Economic Evaluation of Housing Subsidy Systems

A Methodology with Application to Morocco

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Contents

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Introduction

Housing subsidies exist in almost every country in the world. Meanwhile, in most countries pursuing housing reforms, there is a growing need for integrating various interventions into comprehensive and explicitly articulated housing strategies. This is reinforced by fiscal needs to trim public spending and thus focus budgetary subsidies on better targeted household categories.

The efficiency and equity performances of particular types of housing subsidies have been studied for a long time.[1] On the other hand, monographs of the entire housing subsidy system in a specific country, or comparisons of specific subsidy instruments across countries, are often undertaken by academics and development agencies. These studies essentially analyze how the different types of subsidies fit together, where the leakages are, and who captures the subsidies, often with the purpose of reforming the housing subsidy systems. Such studies make abundant use of public finance criteria to assess the performance of housing subsidies. Thus, it is generally possible to assess the "quality" of particular types of housing subsidies based on simple notions of public finance. However, the criteria used differ from one study to the next.[2]

At a different level, while analysts and policy-makers usually focus on comparing housing subsidy systems across countries, no systematic framework seems to exist to easily compare packages of housing subsidy systems.

The main reasons for this apparent omission can be summarized as follows:

- The intrinsic complexity of the housing subsidy systems may encompass dozens of different channels[3] with sometimes highly idiosyncratic features, which together make cross-country system comparisons difficult[4].

- Different levels of development between countries often preclude an immediate ranking of "good" versus "bad" systems. The relevance as well as the economic efficiency of a particular housing subsidy program depend on many factors, including the level of poverty in the country, the development of mortgage markets, the importance of the banking system, and the land titling system. Thus, comparing housing subsidies across countries on the basis of gross figures alone may lead to conclusions that are not operational in terms of policy recommendations.

The goal of this paper is to provide an organizing set of principles for evaluating the maze of subsidies affecting the housing sector. The paper thus aims at providing operational criteria allowing comparisons to be drawn between housing subsidy systems across countries, both at the individual program level as well as the aggregate level. The principles guiding our analysis are the following:

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[1] Examples of studies which have focused on particular programs are Crew-Cutts and Olsen (2002) on section 8 housing vouchers, and Gyourko and Linnemann, (1989) on public rental housing in the US.

[2] Many studies have focused on evaluation of housing subsidies. Some of them are quoted in this paper. For a general overview and country examples, the reader should consult Buckley and Mayo (1989), Conway et al. (1996), Gilbert (2004), Mayo and Gross (1987), Merrill et al. (1999), Struyk (2000), and the World Bank (1993).

[3] To quote but a few: direct subsidies to rental or ownership, tax cuts on mortgage interest, provision of plots of land at below market prices, and all subsidies to legal producers.

[4] One exception is Mayo (1986), who compares the US and German systems.

- To identify a few simple, basic principles of public finance to provide an assessment grid for all types of housing subsidies, and which cover the whole range of issues deemed relevant by experts and policy-makers; and

- To give an operational content to those principles by trying to provide empirical measures which can be retrieved from existing programs.

Our contribution consists in examining the assessment criteria used by different authors and systematically reviewing them. Hence, we are ultimately presenting a "map" of criteria which covers the most noteworthy topics in terms of operational analyses.

The paper provides a tentative solution to the cross-country comparison of subsidy systems by presenting a method to aggregate the "quality diagnoses" made at the individual program level into country level diagnoses.[5] Ultimately, we would like to provide policy-makers with a simple tool for a qualitative assessment of housing subsidy programs, allowing for both within- and across-country comparisons.[6]

The aggregation technique, which consists in weighting scores obtained by individual programs on a criterion by the share of each program in the country's expenditures on housing subsidies, offers a simple way to visualize the main features of a subsidy system, as well as the impacts on the system of reforms or improvements of particular programs. In terms of policy advice, this type of weighting is helpful, since in a reform of the subsidy system, priority should be given to the parts of the system generating the higher losses. Those need not be the most inefficient parts of the package, if the latter weigh little in the overall subsidy package.

To illustrate the concrete implementation of our method, we have applied our framework to the housing subsidy system prevailing in Morocco in 1995 and 2004.

The remainder of the paper is organized as follows. Part I is devoted to the description of the methodology. The first section briefly reviews the economics of housing subsidies. The second section defines the criteria to be applied to particular housing subsidy programs, associated measures and measurement problems. Section 3 presents the aggregation method and its implementation. Part II illustrates the application of the framework by reviewing the housing subsidy system in Morocco. The first section gives an overview of the housing sector in Morocco. In section 2, we describe the housing subsidy system prevailing in Morocco in 1995. Section 3 evaluates the various subsidy programs under the nine evaluation criteria selected and presents aggregate highlights. Section 4 briefly surveys the main changes having affected the housing policy in Morocco from 1995 to the present. The newly introduced instruments are evaluated in section 5. Section 6 uses aggregate ratings to compare the housing subsidy systems in 1995 and in 2004. Section 7 concludes.

[5] Supposing one is able to assess the "quality" of specific housing subsidy programs in a particular country, the overall "quality" of the subsidy system will depend on the mix of housing subsidies prevailing at that time in the country. If two countries use the same two subsidy types but with a different mix, the "quality" of the housing subsidy system will be higher for the country whose share of the best-performing type of subsidies is higher.

[6] For example, through diagrams showing the performance of housing subsidy systems on several axes, such as those used by the World Bank in country assessments (see also Figure 2).

Part I : Methodology

1) Background and Applied Literature on Housing Subsidies

This section begins with a basic overview of the economic justifications for housing subsidies and their evolution until now. We then focus on the economic impact of housing subsidies, through the standard classification of policy effects given by Musgrave (1959).

Economic Justifications for Housing Subsidies[7]

Housing has typically received a lot of attention from policy makers for a number of years, if merely from the basic needs perspective. Historically, it seems that government intervention in housing was an externality argument: in large cities such as Paris at the end of the nineteenth century, the population density was well over 20,000 inhabitants per square kilometer. Recognition that overcrowding, lack of appropriate water and sanitation, and poor building conditions were at the root of epidemics and health hazards paved the way for government intervention in housing, for example in the form of units constructed by State-owned cooperatives. The public health argument is still valid today for some less developed countries, where population density and health hazards are still comparable to or higher than in Europe a hundred years ago.

In European countries, state intervention in housing continued during the first half of the twentieth century. Two successive wars caused massive destruction of housing units and many governments felt responsible for alleviating the housing shortage. Thirty years later, the picture had changed dramatically. Serious housing shortages were no longer an issue, and justification for state-funded housing subsidies had become harder to support. In some countries, it had become clear that structural shortages were due above all to an inadequate legal and regulatory environment, such as very stringent rent controls. In his famous survey, Rosen (1985) asks whether housing subsidies are not just either a manifestation of paternalism from the state or an indirect means for the federal government to subsidize the construction sector.[8] These differing rationales for state intervention in the housing sector resulted in two main themes of discussion and research:

- Positive externalities generated by housing. If families are not fully aware of the benefits[9] they or the community get from their consuming housing of good quality, housing will be produced in insufficient quality/quantity. Therefore, there is clearly room for government intervention in the housing sector. Thus, a whole branch of empirical economics has been devoted to the identification of those externalities, though mainly in developed countries (for a recent review, see Dietz and Haurin, 2003).

- Market imperfections and incompleteness. If the poor do not have access to financial markets and relevant information, or are discriminated against, housing subsidies targeting the most disadvantaged sections of the population can be justified. Imperfections in other markets such as the job market also justify housing as a privileged means of intervention, considering the "safety net" role played by housing.

[7] This section is not intended to be exhaustive in any way. The reader should refer to Rosen (1985), Mayo (1986) and Hoek-Smith and Diamond (2003), among others.
[8] In France, subsidizing construction is almost natural and beyond question. As the saying goes, "when construction is well, everything is well".
[9] In the form of lower crime rates, better results of children in school, better health, etc.

The traditional justification of housing subsidies, which relies on the "merit good" aspect of housing (see e.g. Mayo, 1986), still has a powerful appeal in many countries. This is especially true in developing countries where a large portion of households does not have access to basic utilities or shelter. In the case of international development institutions, the fact that housing is seen as a merit may be considered the main reason for including housing in the Millennium Development Goals.

Other considerations may, of course, apply. For a government with a vertical equity preoccupation, housing subsidies may serve as a redistribution device. When the government can observe incomes, an income tax should suffice to achieve redistribution (Atkinson and Stiglitz, 1976).[10] However, this conclusion is of little practical relevance in developing countries where income and wealth are not easily observable for a large part of the population, due to the importance of informal markets and the absence of monitoring systems. In that case, subsidizing housing directly could lead to better targeted transfers.

Through the lessons learned by specific countries, there has also been a growing consensus that the institutional and regulatory environment in which the housing market develops is of primary importance to understand its shortfalls or successes. A well-functioning land market, for example, is now recognized as necessary for a fluid housing market and affordable prices, above and beyond any particular type of housing subsidy. Reflecting this new consensus, reforming institutions, rather than intervening directly on physical or subsidy programs, has been a growing activity of international donors in developed countries during the past decade (see Buckley and Kalarickal, 2004).

Economic effects of housing subsidies.

Based on the classification developed by Musgrave (1959), government taxes and expenditures (or other policies) can have three different effects on the economy:

- Allocation. As a result of any policy, the allocation of resources is changed, i.e. the mix of goods and services produced by the economy is altered. Related to this notion is the question of efficiency of the economy.
- Distribution. Many government policies aimed at redistributing resources – some programs are explicitly aimed at redistributing income from the rich to the poor. The fundamental question is then "How do policies change the distribution of income within the economy ?".
- Stabilization. The overall level of government expenditures and taxes can have important effects on the aggregate level of employment, output, and prices.

Stabilization, although important, will not be discussed in detail here. The two other criteria can be used to describe the effects of housing subsidies and classify the existing literature on this topic. Throughout, we will use some typical examples of housing subsidies to illustrate specific points.

[10] This conclusion does not hold if there are positive externalities associated to housing. In that case housing subsidies could perform better than income subsidies, because they directly affect the housing prices perceived by households.

Allocation

Housing subsidies, like all subsidies, usually distort the price system faced by firms and households, thus changing the equilibrium output of goods and services.[11] Compared with other subsidies, studying the distortions caused by housing subsidies to the price system and the economy is particularly important because of:

i. The quantitative importance of housing subsidies in the overall tax and expenditure system in most countries; and

ii. The importance of housing as a consumption good and as an asset for households. Housing typically represents between 20 and 50 % of total consumption and between 40 and 70 % of average household wealth.

Thus, the system of housing subsidies as a whole can be expected to have important effects on many margins, potentially causing huge distortions in the allocation of resources in the economy. On the household side, the margins most likely to be affected are:

i. Consumption of housing versus consumption of other goods. A wide range of housing subsidies can be thought of as equivalent to changes in the price of housing relative to the price of other consumption goods. This results in changes in the consumption bundles chosen by those affected by the subsidy. Usually, the subsidy results in a lower price of housing compared to other goods. If housing is a normal good, both the substitution effect and the income effect are positive, and housing is consumed in greater quantity. This topic has received a great deal of attention in empirical literature (see, for example, Malpezzi and Vandell, 2002, Sinai and Waldfogel, 2002).

ii. Consumption versus saving. Here again, we can identify at least two different effects: by lowering the price of housing today, a housing subsidy may alter the arbitrage between present and future consumption. However, housing prices may also decrease in future. Certain types of housing subsidies, such as up front subsidies to ownership which include eligibility conditions such as a minimum down payment requirements, can oblige households to save more in order to meet the constraint.

iii. Composition of the household's portfolio. Tax treatment, government investment in housing or direct subsidies to homeownership[12] may cause households to invest more in housing, relative to other types of investment, than would otherwise be the case. This issue also affects the production side. On this subject, see the discussion in Japelli and Pistaferri (2002), and the paper by Duebel (2000).

iv. Labor supply. As for any other good, the household's labor supply is affected by the subsidy system. This may happen for "direct" reasons (i.e. the price of housing

[11] There are very few studies we are aware of on the effect of housing subsidies on prices. One exception is Susin (2001), who studied the effect of section 8 vouchers on rents from a panel sample of American cities. In the French case, Laferrère and Le Blanc (2004) show how personal housing subsidies for renters affect rents.

[12] Examples of favorable tax treatment for ownership include income tax deductibility of the mortgage interests, provisions for non taxation of capital gains on housing, low tax rates on housing bequests, etc.

changes, and so does the labor supply of the household), or for indirect reasons.[13] Housing subsidies are no exception to this rule, even though their effects on labor supply have received little attention compared to subsidies for families or minimum income programs, which are of similar magnitude. A study on the effect of section 8 vouchers on the labor supply in the United States can be found in Currie and Yelowitz (1998) and Fischer (2000). Ideally, the effect of housing subsidies on labor supply should not be examined independently, but as a component of the tax-benefit system. For such an approach in France, see Laroque and Salanié (1999).

On the production side, the margins most likely to be affected may be:

i. Self-construction versus buying dwellings from construction companies. In many developing countries, self-construction represents an important part, if not the bulk, of construction, and more so in the poorest parts of the population. Construction subsidies, which often operate via low tax rates on inputs or labor, cover only large firms operating in the formal job market and building mid-range or high standard housing, leaving self-construction out of the loop. This results in both allocation distortion and regressive redistribution.

ii. New construction versus maintenance and upgrading. This point is closely related to point i). Many governments still want to stimulate new construction because of structural deficits in housing units, or because of efficient lobbying by the construction industry, through housing subsidy programs theoretically dedicated to the poor. However, the poor usually cannot afford new units, which results in badly targeted subsidies (see paragraph below). The result is often lack of maintenance and/or upgrading of existing units.[14]

iii. Housing investment versus investment in other sectors. By altering the returns on investment in the housing sector, supply-side policies cause investment to shift from other sectors to the housing sector. Though fairly obvious, this is not often fully taken into account in many countries where all sectors are trying to encourage investment. Eventually, competition between sectors may result in all sectors being worse off and to a decrease in overall tax revenues.[15] One key issue is the degree of openness of the country to foreign investment. An example of applied work on this topic is the study by Sewell, Mintz and Tsiopoulos (1995).

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[13] E.g., in France, public housing is obtained by applying to local authorities managing the public stock at the city level. The wait time for public dwellings can be very long, typically from one to two years. Moving from a city to another, a household previously housed in the public sector loses a low rent public dwelling and has to relocate in the private sector, at least temporarily. Those households thus have strong disincentives to move, even when they lose their jobs. This causes a poverty trap. On this issue, see McIennan et al. (1998).

[14] Moreover, when the housing shortage is caused by reasons such as land titling procedures or overly stringent urban land zoning regulations, this type of policy can be highly inefficient. In this case, the limiting factor is the elasticity of supply for land, not for housing units. Thus, the subsidy is likely to be captured by the construction sector, increasing the price of housing units.

[15] For example, until 1996, Morocco had five different investment codes for different sectors of the economy. To ensure neutrality of the tax system to investment flows, the five codes were abandoned and replaced by a new Investment Code identical for all the sectors of the economy. However, since 1996, many sectors (such as housing) have benefited from exemptions and special fiscal regimes, destroying the original purpose of the new Investment Code.

iv. Public versus private construction. Subsidies to private or State-owned companies for public housing construction, in the form of tax rebates, land subsidies, or subsidized financing of projects, distort competition in the construction sector and can result in partial or total crowding out of private construction by public units.[16] The important variable then is the net effect, i.e., the number of additional units built because of the subsidy. In some cases, the net effect can be negative due to the monopoly resulting from the disappearance of unsubsidized firms from the market. This topic has been studied by Murray (1999) for the United States.

Distribution

The concept of redistribution is fairly straightforward. The generic question "How do policies change the distribution of income in the economy?" can be broken down into several specific sub-questions. In particular, one is often concerned with *vertical redistribution* (are the transfer flows induced by the subsidy going from the rich to the poor, from decile *y* to decile *z* of the income distribution, etc.) and *horizontal redistribution* (comparing the situation of different household sub-groups in a particular income range before and after the redistribution caused by the subsidy).

Evaluating the effects of a subsidy program on welfare is not always easy. For example, evaluating the long-term effects of unemployment training programs or education grants involves dynamic effects and requires intensive modeling. An entire branch of economic literature (the so-called "evaluation literature') is devoted to evaluating program effects (see Heckman, Ichimura, and Todd, 1997a, 1997b, for a good presentation). This literature has focused the attention not only on the effects of subsidies on beneficiaries, but also on non-beneficiaries and on the choices of households (or firms) between participation and non-participation in the programs. In the case of housing subsidies, this framework could be particularly relevant to measure the effects of programs such as land and services, which involve long-term dynamics.

A specificity of developing countries: the formal / informal margins.

When looking at developing countries, one has to take into account that in parallel with formal markets, informal markets very often exist, sometimes playing a more important role than their formal counterparts. The most obvious examples of such markets are:

- Parallel markets for land, either because of the existence of customary systems coexisting with "modern systems" (see World Bank, 2003), or because the formal procedures for titling and transactions are too complicated
- Limited access of households to the banking system and to credit for housing
- Underground rental and sub-rental markets
- Tax evasion and/or inadequate coverage of the tax system for households and firms
- Underground job market

While the importance of some of these informal markets is well acknowledged in developed countries (e.g. underground labor supply), other markets have not been so developed as to justify the theoretical and/or empirical examination of their effects on the housing market. This is

[16] In Morocco, the subsidies given to state-owned infrastructure and construction companies were so high that the private sector was totally excluded from the construction sector until some years ago.

unfortunate, since the existence of informal or parallel markets can have huge impacts on both the targeting of housing programs and the redistribution effects of housing subsidies in developing countries. This is mainly due to the fact that households or firms participating in the formal markets or systems are not generally the intended beneficiaries of housing subsidies. For example, fiscal subsidies for households, although well-targeted in principle, will always miss the fraction of the population that does not pay taxes. It is thus important to keep in mind that the existence of informal markets makes textbook evaluations of subsidy programs difficult to apply in developing countries.

2) Basic Public Finance Criteria and Their Operational Relevance

Apart from the two main economic criteria of efficiency and equity, which relate to allocation and distribution respectively, other public finance criteria are often used to analyze subsidy programs. Those criteria vary and may bear different names from one author to another. For example, Stiglitz (1988, p. 390-409) gives "the five desirable characteristics of any tax system": economic efficiency, administrative simplicity, flexibility, political responsibility, and fairness. However Stiglitz's categories are broad and each one encompasses different notions. Mayo (1986) and Hoek-Smith and Diamond (2003) provide a very thorough discussion of some of these and other criteria to evaluate housing subsidies. Based on those two studies, Buckley and Kalarickal (2004) evaluate five housing programs in Indian cities based on five criteria: targeting, efficiency, transparency, administrative simplicity and sustainability. In Struyk (2000), who presents evaluations of housing finance and subsidies in transitional countries, subsidies are judged according to the following criteria (p 40): openness and transparency, precise targeting, improved access, cost-effectiveness, administrative simplicity, cost control, and development impact. [17]

Thus, based on the literature on evaluation of policy programs, the closest metaphor would be that of a "rainbow" of criteria: trying to cover the whole spectrum of interesting issues, many criteria arise, the number of which is somewhat arbitrary, and with a certain degree of overlapping between them. Since our primary goal in this paper is to provide a wide range of criteria to achieve completeness, i.e., permits a non-specialist to observe interesting areas, we chose to select a fairly high number of criteria. Specifically, we define and discuss the nine following criteria, which can be organized into three main categories:

- Administrative simplicity
- Incentives/ popularity/political accountability-responsibility
- Transparency

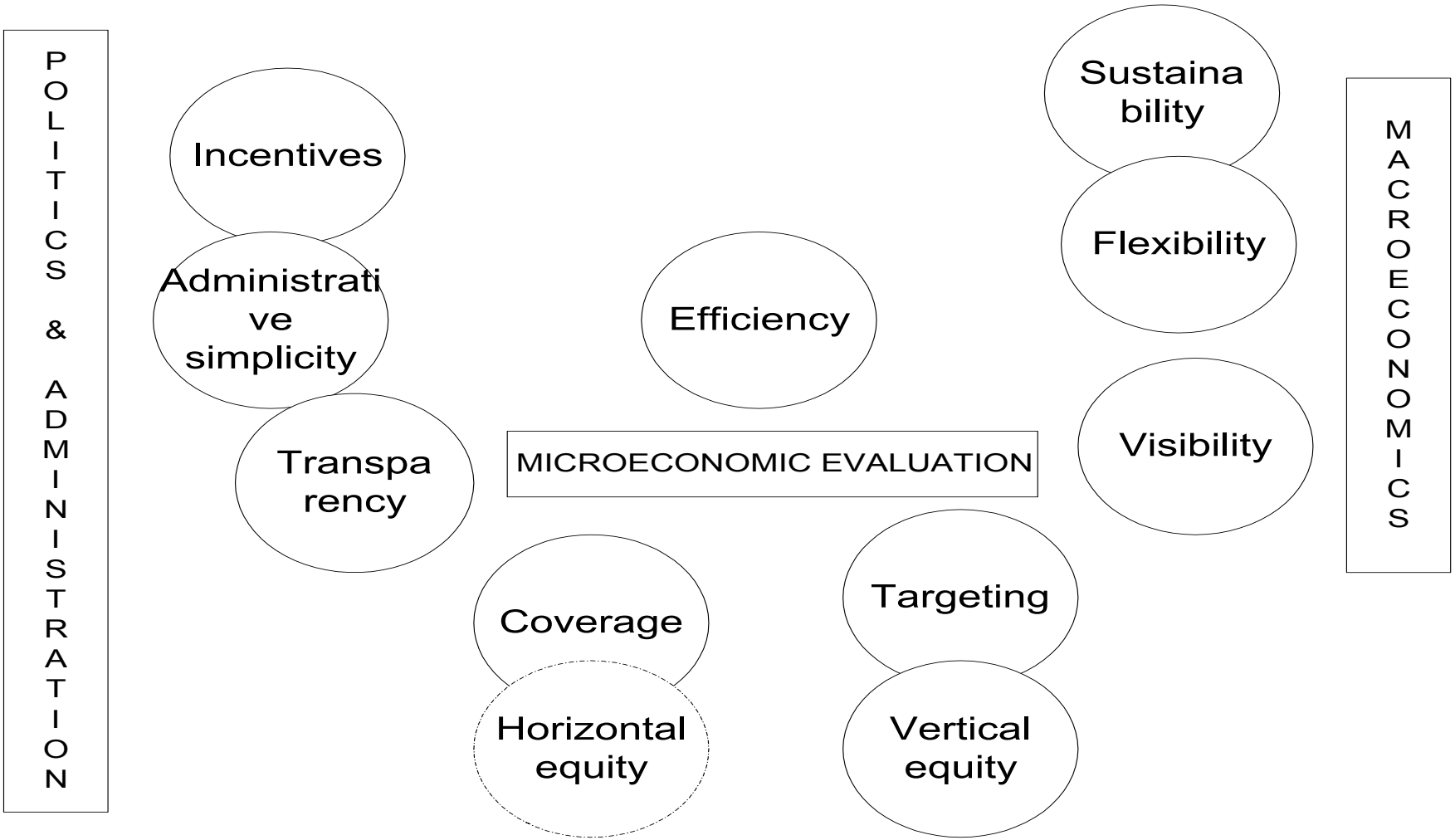
- Targeting / vertical equity (redistribution)
- Coverage/horizontal equity
- Efficiency

- Visibility
- Sustainability
- Flexibility

Figure 1 summarizes the proximity and overlaps between our selected criteria, making the "rainbow" image more concrete.

[17] Other criteria found in public finance textbooks (e.g. Browning and Browning, 1988) include individual freedom and paternalism. We considered those to be less useful in the case of housing subsidies than other criteria, and we have not elaborated on them.

Figure 1 : The rainbow of criteria – Proximity and overlapping between proposed criteria for assessing housing subsidies programs



We will now define the content of all the criteria, and to provide indicators that can be used to measure the degree of success of subsidy programs according to each specific criterion. As indicated below, no quantitative indicators may be available for certain criteria.

Administrative Simplicity

Administrative simplicity can have two interpretations. First, from the administration's point of view : other things being equal, subsidy design should minimize social costs which include the government's administration, monitoring and enforcement costs, but also all indirect costs, such as the time required for applicants to locate the appropriate office where to apply, to understand and to fill out the requested forms. Another potentially important indirect cost is the cost associated with legal disputes arising from the implementation of the program. From a practical point of view, it has to be noted that very often only direct costs are known. Since they are of no significant interest to governments, indirect costs are rarely known without *ad hoc* studies, even in the case of budgeted programs.

A second way to comprehend administrative simplicity is from the potential recipients' point of view. Some programs are so complicated that few potential users are even aware of their existence (this is particularly true for fiscal subsidies), or an "average" household or firm is unable to register under the program without the assistance of social workers or the administration.

Transparency

Transparency refers to the clarity of the program's eligibility and participation criteria and effective implementation by the responsible entities. Since this criterion is more qualitative than others, it might best be defined it through a number of questions: How clear are the rules for allocation of funds to the various states, to local governments? At the local government level, how are beneficiaries identified and selected under the programs? Are there well-defined eligibility criteria for the subsidies? Are those criteria acknowledged by the population? Are responsibilities in subsidy allocation clearly defined? Is subsidy distribution managed by an independent entity? Are any slots for program participation reserved for the administration or local authorities? As an example, the French public sector housing (HLM) would be poorly rated under these conditions (see Le Blanc and Laferrère, 2001). In contrast, Colombia's program for up front subsidies to ownership (Vivienda de Interés Sociál, VIS) directly managed by the State would be rated very high, since distribution of amounts among regions, eligibility criteria, and criteria for selection of beneficiaries are explicit under the law.

Incentives/ political responsibility / popularity :

This criterion is perhaps the most qualitative of all. However, from a policy point of view, it is perhaps one of the most important. Two identically designed housing subsidy programs could perform very differently in two different countries, simply because in one country stakeholders (state, local governments, implementation agencies, recipients) do not have adequate incentives. Thus, the questions underlying this criterion might be the following: What are the incentives of stakeholders to use but not to abuse the subsidy? Are individuals or institutions responsible for choosing participants in the program accountable, and to whom? Are institutions in charge of the program's implementation given adequate financial and technical means? Do entities in charge of the program have incentives to keep the program under control (financial mass, cost recovery, etc.)? How do recipients participate in the project? Does the program receive substantial support

from the public and from politicians? Who supports the program and who is against it? This notion is close to that of transparency, but also to administrative simplicity.

Targeting / Vertical Equity :

Vertical equity relates to the redistribution of income due to the subsidy system and can be explicit or implicit. Vertical equity is a classical public finance criterion (see Stiglitz, 1988), which is not limited to housing subsidies. One may or may not want to include it as a separate criterion, since it is very close to targeting, at least when working (as we do) under the implicit assumption of subsidies targeted to the poor.[18] However, computing (or qualitatively assessing) the distribution of transfers implied by a subsidy is necessary for assessing its targeting, coverage and efficiency. Thus, it may be worthwhile to draw the attention of policymakers to this broader issue, instead of focusing only on targeting.[19]

Targeting is traditionally measured by the proportion of transfer which reaches the intended beneficiaries. It is clear that the ability to define intended beneficiaries assumes the existence of a relatively precise housing strategy in the first place, which is not always the case.[20] In fact, targeting can be examined at many levels. At the national level, how are funds allocated to the various states? At the state level, what criteria are used for disbursing funds to local governments? And finally, at the local government level, how are beneficiaries identified and selected for the programs? In the context of housing subsidies which aim to improve housing conditions, another definition of targeting could be the proportion of the subsidy actually affecting housing improvements for the intended beneficiary groups.

Coverage:

Coverage refers to the proportion of the target population effectively reached by the subsidy. Contrary to Buckley and Kalarickal (2004) we suggest isolating coverage from targeting. The two notions are different and good targeting and high coverage may be somewhat difficult to achieve simultaneously. It should be difficult to achieve perfect coverage for well-targeted subsidies, whereas loosely targeted subsidies could cover relatively well the target population, at the expense of higher costs and leakages to non-targeted groups. Coverage may also be related to horizontal equity issues, i.e., does the subsidy imply different treatments for different types of households / firms in the target population? Which sub-categories in the target population benefit most and least from the subsidy?

[18] From a semantic point of view, "Targeting" refers to a (normative) precise policy objective, whereas "distribution" refers to a positive analysis tool.

[19] Another advantage of raising this issue is to obtain the data necessary to apply the framework used in the so-called evaluation literature. This branch of the literature (see Heckman, Ichimura, and Todd, 1997a, 1997b, for a nice presentation) has focused the attention not only on the effects of subsidies on beneficiaries, but also on non-beneficiaries, and on the choices made by households between participation and non-participation.

[20] For example, in many developing countries, it is difficult to find an official statement concerning the purpose of tax breaks for homeowners going beyond the general objective "of facilitating home ownership".

Efficiency:

The economic notion of efficiency relates to the allocation of resources in the economy. Thus, the general question to be asked is "can the same resources be used more efficiently, and to what extent?" It should be apparent from our review in Section 1 that, in most cases, the answers to this question are not straightforward. Depending upon the type of subsidy program examined, relevant indicators for efficiency may differ or be difficult to identify. The correct theoretical answer to the question of efficiency was given by Debreu (1951), who introduced the notion of Coefficient of Resources Utilization (CRU). In any given economy, the CRU is the complement of only a fraction of resources "wasted", i.e., the portion of resources which can be discarded while still able to ensure that all agents receive the same level of satisfaction as under the actual economy. For optimal economy, the CRU will be 1, since no resources are wasted. For sub-optimal economies, the CRU will be below 1. Debreu (1952) gives a formula for computing the CRU (the economic loss) when a system of small indirect taxes and subsidies is introduced in a Pareto optimal economy. The formula involves quantity and prices before and after subsidies are introduced, as well as the aggregate substitution matrix (consumption plus production) for the economy.

Empirical application of Debreu's formula in its most general form requires general equilibrium models. The computable general equilibrium (CGE) literature has been successful in developing practical models of the economy which can be used to assess the efficiency of alternative tax systems and their impacts on the economy. For example, Coady and Harris (2004) use such a model to estimate the effects of cash transfer programs in Mexico. Most of the time however, even so-called general equilibrium evaluations of welfare costs of subsidies have been undertaken within a simplified framework. Usually, housing is isolated from other goods. The model used depends on the focus of the analysis, and one particular margin affected by the subsidy is put forward. Perhaps the most studied case is that of US income tax deduction of mortgage interests. The efficiency impacts of this provision have been analyzed, both in terms of distortion between housing and other forms of investment, and in terms of intergenerational redistribution.[21]

As far as housing subsidies are concerned, the bulk of empirical estimations of consumer and producer welfare gains and losses have been undertaken using a partial equilibrium framework. Housing is isolated in the analysis and the general equilibrium effects are neglected. The two main assumptions for all evaluations are the following:

- The reference situation is Pareto optimal (no distortion of the housing market or elsewhere in the economy)
- A distortionary tax / subsidy is introduced on housing.

a) Partial equilibrium of the housing market with producers and consumers

In this case, one obtains the famous "Harberger triangle", which sums up the loss of welfare for producers and consumers. When taxes are low and only second-order changes can be considered, the loss of welfare grows as the square of the tax rate increases. Harberger triangles have been used in a number of studies covering many different fields (see Hines, 1999, for a historical review and empirical references on Harberger triangles).[22]

[21] See Skinner, 1996, for a model focusing on the latter aspect, references and a discussion of the relevant margins to be considered in that case.

[22] The "correct" welfare measure for consumers is based on the concept of equivalent variation or compensating variation. Many empirical analyses, however, are based on uncompensated demand curves, which are more frequently estimated.

In the context of housing subsidies, the generic question relates to the portion of subsidies being captured by housing producers, rather than by consumers. Studies on this topic include Susin (2002) for section 8 housing vouchers in the United States, and Devereux and Lanot (2003) for mortgage interest tax relief in the United Kingdom. The latter paper is part of the literature on tax incidence, which by nature is closely related to the literature on evaluation of subsidy programs.

b) Partial equilibrium on the housing market with only consumers

Very often, only the consumer side is examined. In this case, one is concerned with recovering household preferences and computing the distribution of equivalent and compensating variations. This framework may be appropriate when issues of efficiency as well as redistribution for a particular subsidy are examined, and has been applied in many studies: for example, Olsen and Barton (1983) on rent control in New York City; Kraft and Olsen (1977), or Le Blanc and Laferrère (2001) on public sector housing, respectively, in the United States and in France; Koning and Ridder (1997) on rent assistance in the Netherlands.

The partial equilibrium framework is also the main concern of policymakers, who often disregard overall losses for the economy, focusing instead on the effects of subsidies on housing production or consumption. Hence, as far as policy evaluation is concerned, major outcomes will be housing production or consumption changes occurring as a result of the policy. Moreover, specific studies focus on various economic margins. An appropriate estimate of program "efficiency" (though not in the coined economic sense) then becomes the *leverage effect* of a program, i.e., how much supplemental investment in housing will be generated by one dollar of subsidy?[23] The focus on the leverage effect has been particularly important in the evaluation of slum upgrading and site-and-services programs (see for example Quigley, 1987).[24]

Often, particular data from administrative files or surveys are not available, and the estimation of models like those used in the papers mentioned above is not possible. When adequate data are missing, other indicators of efficiency can be devised and they can vary on a case by case basis.

Visibility:

Visibility refers to the degree of visibility of all costs of the subsidy for taxpayers and citizens. In order to measure visibility, one must first determine the actual subsidy cost and then determine how explicitly defined these costs are in the government's budget. As a rule, costs are better known for subsidies on the State budget.[25] The cost of fiscal subsidies is often estimated because fiscal revenues are an important component of a country's macroeconomic stability. In contrast, the cost of in-kind subsidies such as public housing or land are rarely estimated because the implied transfers are often implicit and do not appear on the main budget of the State or local authority. Thus, generally speaking, we can assess a decreasing degree of visibility to subsidies depending on their type and accounting method, as follows:

- subsidy on budget

[23] There are many ways to estimate this type of impact, i.e., marginal or average impact, short-term vs. long-term impact, etc.

[24] This may be attributed to the importance of the "merit good" aspect of housing for international institutions financing such programs.

[25] However, this is often only true for direct costs, e.g., the amount of subsidy budgeted or distributed to beneficiaries during a given year. Indirect costs which are not the main preoccupation of governments, are rarely known without *ad hoc* studies, even for budget programs.

- fiscal subsidy
- implicit subsidy / in-kind subsidy

As a rule, the more visible the program, the more quantitative information will be available on it. From a policy point of view, improving the visibility of a program has significant benefits, such as better understanding of the *full economic cost* of providing housing assistance, better targeting in practice, and eventually less corruption.

Flexibility:

This notion corresponds to the ease with which a particular program can be modified (parameters and / or implementation) or even terminated. This can be understood in the economic sense (can the program be modified or terminated without major disruptive effects on the economy?) or in the political sense (can the program be terminated without major political unrest?).

Sustainability:

It can be argued that "sustainability" is meaningless for an isolated policy because the government's budget constraint implies a tradeoff between policy choices.[26] However, this criterion can be applied in the following sense: given the present economic situation and reasonable forecasts, will the policy still be feasible in ten years, or will it require major changes in design, or even be dropped? One common example concerns subsidies for housing construction through public land grants or sales to developers below market prices by the State. In many cases, this strategy is not sustainable because reserves of public land are typically limited, and there is no mechanism to ensure its renewal. Another generic example could be a substantial subsidy program for a limited number of people at the beginning of the program, but which could rapidly grow because of behavioral responses or political pressures, even to the point where budget expenditures are no longer sustainable.[27]

Another feature of sustainability, which also relates to flexibility, is the degree to which current expenditures on subsidies have lasting impacts on the State budget (i.e., the time persistence of expenditures). Two extreme examples are upfront subsidies for homeownership, which constitute one-shot expenses for governments, and subsidies on mortgage interest rates, which usually impact government expenditures for the entire life of the loans.[28]

Table 1 in the Appendix summarizes the above discussion.

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[26] Sustainability could also be defined as follows, (Buckley and Kalarickal, 2004): "whether the government can scale up the housing subsidy program to effectively address all the intended beneficiaries". This definition is in the middle of our concept of sustainability and coverage.Coverage is not isolated as a criterion in their approach.

[27] The French programs of personal rental allowances (Allocations de Logement, AL, and Aide Personnalisée au Logement, APL) are a good example of unforeseen growth in the number of beneficiaries and State expenditures.

[28] Morocco again is a good example of this. Interest rate subsidies on mortgages were instituted in 1968 for the benefit of the Housing bank, CIH. In 1996, as a by-product of financial market liberalization, they were "de-specialized", i.e., granted to households taking out loans form banks other than CIH. The cost of these subsidies grew from about US $10 million in the early 1990s to US $50 million in 2003. In 2004, the Finance Law discontinued the subsidy. However, all previously approved loans continued to benefit from the subsidies, and subsidy payments should decrease only slowly and continue at least until the year 2015.

Evaluating the Criteria in Practice

Based on the above discussion, it should be clear that some criteria are not easily identified through quantitative indicators, except at times on a case-by-case basis. Moreover, some criteria have multiple dimensions, and various indicators may be required to identify a particular criterion. Moreover, even when quantitative indicators come to mind, as in the case of efficiency, their practical computation may be complicated, and as such, not easily available. Thus, in most cases, qualitative or semi-quantitative information summarizing program performance under specific criteria must be identified.

Once adequate data have been collected, the programs are given ratings according to a predefined scale for each criterion. In this paper, we have arbitrarily chosen to rate the programs from 1 to 5. A program that performs poorly will receive a score of 1, while a program which performs well will be rated 5. We agree that any assessment of policies or programs according to the suggested criteria is highly subjective, and is therefore subject to criticism. However, casual practice suggests at least two reasons why such a system would be better than it appears:

- Whether a particular program receives a score of "3" or a "4" in a particular dimension should be of little importance. The point is that housing specialists who examine the same type of program applied in different cities or countries should agree on the relative *ranking* of those programs according to the five or six criteria. The same applies to the comparison of two different types of programs in the same city or country. In other words, the cardinal properties of such a system are irrelevant, and it is the *ordinal* properties that matter.

- On second thought, even cardinal ranking my not be such a problem. In certain cases, once experts reach consensus on a ranking of programs in a particular dimension, reference to qualitative and/or quantitative indicators can be used to apply cardinal values to programs under this scale. This is why it is important to identify reasonable indicators for each criterion.

Practical difficulties and means to compensate for the lack of quantitative information can be best illustrated through examples. Some of these are described in the companion paper which uses this framework for Morocco.

3) Aggregating Across Subsidy Types

This section presents the method used to aggregate ratings for different programs based on the criteria defined in the previous section. The objective of this exercise is to find a synthetic tool for comparing housing subsidies systems across countries. Without such a tool, such a comparison can be a difficult exercise, essentially because:

- Variations in the parameters for a given subsidy type seem to vary almost ad infinitum across countries.
- Not all countries choose every type of housing subsidy.
- The mix of effective housing programs (i.e., their relative importance in terms of financial weight) is country and time-specific.

Suppose previous work in two different countries (or in the same country at two different times) have produced tables listing the different programs of housing subsidies and giving different

scores for each criterion defined in the previous section. To compare the two subsidy systems, one needs a way to aggregate the scores of all the subsidies along each criterion. The simplest idea is to compute a score for the whole subsidy system as a weighted average of the scores of each program.

Mathematically speaking, if there are *n* types of subsidies, and $(S_i)_{i=1,..,n}$ are the scores of the *n* subsidies based on a particular criterion, we want to find *n* weights $(w_i)_{i=1,..,n}$ so that the score of the whole subsidy system is given by:

$$S_c = \left(\sum_{i=1}^{n} w_i S_i\right) / \left(\sum_{i=1}^{n} w_i\right)$$

The problem is then to find a meaningful weighting system, i.e., to assign a weight to each type of subsidy. The solution we propose consists of weighting the programs by expenditures (explicit or implicit) on those programs, or, which is the same, by the *shares of the programs in total expenditures on housing subsidies*. This choice seems by far the most natural. It is also a practical one, in the sense that alternative information on the whole subsidy system for weighting the program scores may not be available in practice. Having a reliable way to measure of the amount of all subsidies is already challenging. The way to effectively compute "expenditures" for various types of subsidies is described in the section below.

Before doing so, however, one must first assess the meaning of aggregation for the various criteria defined above. Three questions arise:

- Do aggregate scores on particular criteria have a sense? i.e., is it possible, based on individual assessments under a particular criterion, to obtain an aggregated measure for the whole subsidy system?
- If this is not the case, can the criterion at the aggregate level be given a meaning sense somewhat close to its sense at the individual level, and how should the system be evaluated based on this new criterion?
- Could supplementary criteria be relevant at the aggregate level, and not at the individual level?

In the case of the first question, we can define three levels of "goodness of aggregation": satisfactory, limited, and poor.[29] Results are summarized in Table 2. Targeting, vertical equity, visibility, transparency, flexibility and incentives make the cut easily. The case of administrative simplicity is not so clear, because hundreds of simple subsidies can prove complex for the administration and the taxpayer. Apart from this caveat, aggregating should not be a problem under this criterion.

[29] We take the practitioner's point of view, rather than the economist's point of view, because the economist could be tempted to call any attempt of aggregation across subsidy types a nonsense.

Table 2 : Meaning of Aggregation of Scores across Subsidy Types

Criterion	*Meaning of Aggregation across Subsidy Types*
Administrative simplicity	Limited. Hundreds of simple subsidies can create a complex system for the administration and the taxpayer.
Targeting	Satisfactory
Coverage/horizontal equity	Poor. Partial coverage by complementary measures may result in good overall coverage of the poor.
Vertical equity (redistribution)	Satisfactory
Efficiency	Poor. Multiple distortions are difficult to model and can result in welfare effects contrary to common sense.
Sustainability	Limited (not worse than the individual measure)
Visibility	Satisfactory
Transparency	Satisfactory
Flexibility	Satisfactory
Incentives	Satisfactory

Three criteria have different meanings at the aggregate level: sustainability, coverage, and efficiency. An aggregation of individual sustainability measures appears no worse than the individual measures themselves. Indeed, sustainability is better defined at an aggregate level than at the individual program level, since the whole mass of housing subsidies can be followed through time and compared to other macroeconomic indicators. As for coverage, aggregation clearly fails, since partial coverage by complementary measures may result in good overall coverage of the poor. On the contrary, accounting for these complementarities is particularly important in the design of subsidy systems. As for efficiency, it is well known that distortions of multiple markets are difficult to model and can result in welfare effects which defy common sense. Thus caution is needed in the assessment of efficiency at an aggregate level.

Lastly, an important criterion relevant only at the aggregate level, may be that of *redundancy or competition between programs*. In most countries, changes in the tax and benefit systems often occur incrementally. New provisions are included in the existing system, whereas previous programs are not necessarily dropped. As a result, the portion of the tax and benefits systems which concerns housing often presents layers of programs and provisions which are not always consistent. One example is when housing construction is both taxed and subsidized.[30] Although the quantitative effects of multiple distortions are difficult to estimate, it seems clear in practice that subsidizing and taxing construction at the same time cannot be optimal, and will result in both distorted supply and waste of resources. Thus, evaluation of the subsidy system based on this criterion should focus on the logic of the subsidy system as a whole, merging various subsidies , and on the way the different programs interact and complement each other.

Table 3 summarizes the differences between the program and aggregate levels for the list of criteria.

[30] Once again, Morocco is a good example of this. On the one hand, housing production is taxed through a tax on cement. On the other hand, production of housing and social housing in particular is heavily subsidized via tax cuts and exemptions.

Table 3 : Correspondence between criteria at individual and aggregate levels

Criteria having the same meaning at individual and aggregate levels	*Criteria having different meanings at individual and aggregate levels*	*Criteria only relevant at aggregate level*
Administrative simplicity*	Coverage/horizontal equity	Redundancy / competition
Targeting	Efficiency	
Vertical equity (redistribution)	Sustainability	
Visibility		
Transparency		
Flexibility		
Incentives		

* : with a caveat, see Table 2.

How to measure expenditures on housing subsidies?

Measuring expenditures for housing subsidies can vary between very easy (case of subsidies on budget), to very difficult (case of non-priced in-kind or implicit subsidies). Thus, rather than a presenting a general method, we prefer to give some concrete examples.

- Subsidies on budget: expenditures on those subsidies should be forecast, allocated and monitored and they should be easily obtainable.

- Subsidies through tax code provisions: Measuring the implicit expenditure in this case is not straightforward. An accurate measure would need to rely on models incorporating the whole tax (and benefit, in the case of the household) system, to account for behavioral responses of agents to changes in the tax system. As a rule, those responses do matter in determining the magnitude of the changes in tax revenues. However, this approach is rarely used because it is both time and data-consuming. Within administrations, simulations and estimations often rely on the so-called "tax expenditure" method.[31] This very simple method is purely static and consists in applying the tax rebate / change to the existing tax base. Estimates obtained in this way neglect the response of agents to the change and, thus, tend to overestimate the loss of tax revenues for the government. Another weakness in this approach is that agreement has to be reached on what the "normal" level of taxes[32] should be. This is not always obvious. Although controversial, this simple method is very often the only one available. Since it usually gives at least correct orders of magnitude, it should be used when more detailed estimations are not available.

- Land subsidies. Very often land is given or sold at below market price to producers or directly to households. In this case, the amount of subsidy should be computed from evaluating a market price for the land, from which the price paid by beneficiaries will be deducted. Interestingly, in some countries the size of those subsidies is not computed by

[31] This method is officially used by Canada and the United States, among others, who annually compute estimations of fiscal expenditures in an appendix to the federal budget. The concept of fiscal expenditure has received much criticism in those countries.

[32] For example, the case of capital gains on real estate. Should the "base" tax rate on capital gains be applied to interest income, to wage income, or to dividends?

the government, because state-owned land is perceived as a "free" resource, at least in the short run. The issue one may face here is that so much land is publicly held and allocated that it is not clear what the "market" price should be.

- Direct subsidies through housing finance instruments. Frequently, instruments of housing finance such as Housing Contract Savings Schemes (HCSS) serve as vehicles for housing subsidies, or have been subsidized to ensure their success.[33] This paper is not directly concerned with housing finance; however, the subsidies or premiums given to households should be included in the total amount of housing subsidies. The availability of figures in that case will vary by the type of instrument, but can be expected to be high, since those subsidies are typically budgeted.

- Indirect subsidies through finance instruments. This includes the value of State commitments on instruments such as mortgage insurance schemes, liquidity facilities, hedging instruments for mortgage lenders, etc. Pricing those products (which in the case of guarantee schemes amounts to estimating the contingent liabilities faced by the State) is possible in theory, and is effectively done under private schemes. Historically, however, this type of instrument is initially introduced by the State, and subsequently taken over by the private sector. At the beginning of the system, calculation may not be available due to lack of adequate historical data. An example of how data on mortgages can be used to estimate the cost of a subsidy program in the form of low-LTV mortgages at subsidized rates is given in Deng et al. (1996).

4) Limits of the Method

The usual limits applying to economic analysis of particular programs, independently of the rest of the economy, also affect the analysis of housing subsidies. Interventions or distortions, operating both inside and outside the housing market, can influence the efficiency of subsidy programs as well as the entire housing subsidy system.[34]

An example of internal distortion is rent control. Whether rent control should be considered as a subsidy is not clear on *a priori* basis, and depends on the exact nature of the control involved. However, modeling and estimation of economic and welfare effects of rent control share many characteristics with the evaluation of other types of subsidies (Fallis and Smith 84, 85, Heffley, 1997, Basu and Emerson, 2000, 2002). Of importance also in the rental sector is the legal framework defining the rights and duties of landlords and tenants. Based on the balance between landlords and tenants, it can encourage or hinder the development of the rental market. Subsidizing the rental market in the latter case can be totally inefficient.

Examples of external distortions concern land titling / security of tenure issues (for case studies, see Payne, 2002; for an early paper, see Friedman, Jimenez and Mayo, 1988) as well as in land planning and zoning regulatory frameworks. Inefficiencies arising from inadequate laws or regulations in those areas can largely offset the effects of all public subsidies on housing. This problem has been recognized by economists, both on the theoretical side (Arnott and McKinnon, 1977, Bertaud and Brueckner, 2003) and on the empirical side (Brueckner, 1996, Fu and Somerville, 2001).

[33] For a description of HCSS systems, see Lea and Renaud (1995).
[34] Acknowledgment of this has led to increased focus of multilateral agencies on legal and regulatory issues in the housing sector. See World Bank (1993).

In conclusion, it is worth noting that while the traditional public finance criteria used here help evaluate traditional government interventions in the primary housing markets, they may fall short of providing a satisfactory assessment of the benefits and costs of government interventions through implementation of, or participation in, housing finance instruments such as secondary market agencies, mortgage insurance schemes, etc. Inasmuch as these instruments benefit from specific regulatory advantages or explicit financing by the state, as is very often the case, there are subsidies involved, and a complete picture of a government commitment in the housing sector should account for them. However, traditional public finance criteria are mostly concerned with efficient allocation of resources, whereas housing finance instruments mainly deal with efficient allocation of risks. Hence, in some cases, applying the criteria used here to the part of the subsidy system which concerns complex housing finance instruments may prove both difficult and incomplete.[35] As financial markets develop around the world, it is to be expected that a growing portion of Government interventions in the housing sector will relate to housing finance. The type of analysis described in this paper will therefore become less relevant as the bulk of subsidies shifts from primary to secondary market interventions. However, in many developing countries, affordability problems remain the main concern and financial markets are just starting to develop, so that "traditional" housing subsidies will remain the main vehicle of state intervention for years to come. Rationalizing housing subsidies, by using scarce public resources more efficiently, is still a high priority objective.

[35] For example, how are we to judge the efficiency of a government mortgage insurance scheme?

Part II : Application to Morocco

We now apply the methodology developed in Part I to assess the performance of the housing subsidy system in Morocco. We have used data from a study undertaken by the Ministry of Housing in Morocco in 1998-1999, through an assistance program of the World Bank (PLURAM-ALGOE-PROMOCONSULT, 1999). The purpose of the study was to examine all the dimensions of housing financing in Morocco. In particular, it looked at all subsidies for housing, both from a qualitative and quantitative perspective. One product of the study is a booklet which summarizes expenditures on all types of housing subsidies in Morocco, explicit as well as implicit, for the year 1995. We have used this and other materials[36] to rate the different components of the housing subsidy system based on public finance criteria described in Part I.

1) Housing in Morocco

Housing supply

Morocco has a current population of about 30 million people and 5 million primary residences. In 2000, 62% of households were owners, 28 % were renters, and 10 % had another status.[37]
Similar to its neighbors, Algeria and Tunisia, Morocco faces a high urban population growth, with an annual growth rate ranging from 3 to 4 %. Demand for new housing units is estimated at about 120,000 units per year and is expected to continue growing in future due to the demographic composition of the population, whereas annual supply of formal housing units is estimated around 90,000 units.

The housing stock can be broken down into two categories: formal and informal. Here, "formal" conforms to the law. Concretely, a formal housing unit is built on a properly titled land, in an area zoned for residential construction (see below), and has a legal construction permit. The formal housing stock is estimated at 80% of the total stock. Informal housing can be in turn broken down into two categories: illegal but in good condition (called "*habitat non réglementaire*", 15 % of the stock), and slums (barracks and shacks, 5% of the stock). *Habitat non réglementaire* represents units which, at any given stage of the production process, did not comply with laws and regulations. The main consequence of this was a lack of basic services and utilities, since by law, illegal units install utilities.

During the past 20 years, informal housing has developed at a faster pace than formal housing in spite of government intervention (see below). Construction of *Habitat non réglementaire* can be attributed to bottlenecks stemming from the land titling system, on the one hand, and zoning and planning procedures at all geographical levels, on the other.

- Land titling: As many former colonies, Morocco faces the coexistence of many types of property rights for land. Public land, i.e., land owned by the state, still represents a large portion of the country. Most property rights for private land stem from the Ottoman (customary) system: This system recognizes both individual property rights and community rights on land parcels. At present, the bequest of land to communities results in uncertainty of property rights and immobilization of land with urban potential.

[36] In particular, another study undertaken in the same conditions as the first, the study by EDESHA-URBAPLAN-IHEM (1998), concentrated on the bottlenecks in the housing construction process.
[37] The rental sector is entirely private, except for 38,000 public units managed by the companies CIFM and SOPHAL.

However, the only "official" titles for land (and the only ones that allow for collateralization) are those of the Torrens type. The applicable law was passed in 1913 and has not been amended since. The formal procedure to obtain a title is both lengthy and costly[38], and is subject to court settlement of disputes, which generates delays and backlogs in the titling process. As a result, it is estimated that only 12 % of the country was titled in 2004 (20% in urban areas).

- Urban planning. The urban zoning and planning system is very restrictive. It includes compulsory production of master plans for cities and more detailed plans for lower geographical levels. Construction projects located outside of planned zones are forbidden and cannot obtain permits. The master plans are valid for ten years and in theory cannot be amended during that time. Moreover, it has been frequently mentioned that, due to the long delays in production and approval, the plans become outdated by the time they are approved.

- Building permits are expensive, time-consuming to obtain, and subject to having an official title or deed for the property.

The bottlenecks described above produce a thin market for urban land, high land prices, and long delays between project conception and delivery of housing units (in 1995 it was estimated that land was held by developers for 9 years on average), which result in expensive new formal housing and basically encourages illegal construction. A 60m^2 dwelling was estimated to cost between MDH 210,000 and 290,000 in the two main cities, and between MDH 150,000 and 170,000 in other large towns.

[38] When the procedure runs smoothly, it can take more than one year on average. However, many cases go to court. In those instances, it is not rare to see cases still unsettled after 5, 10, or even over 20 years.

Figure 2 : Estimated distribution of Income in Morocco in 1995.

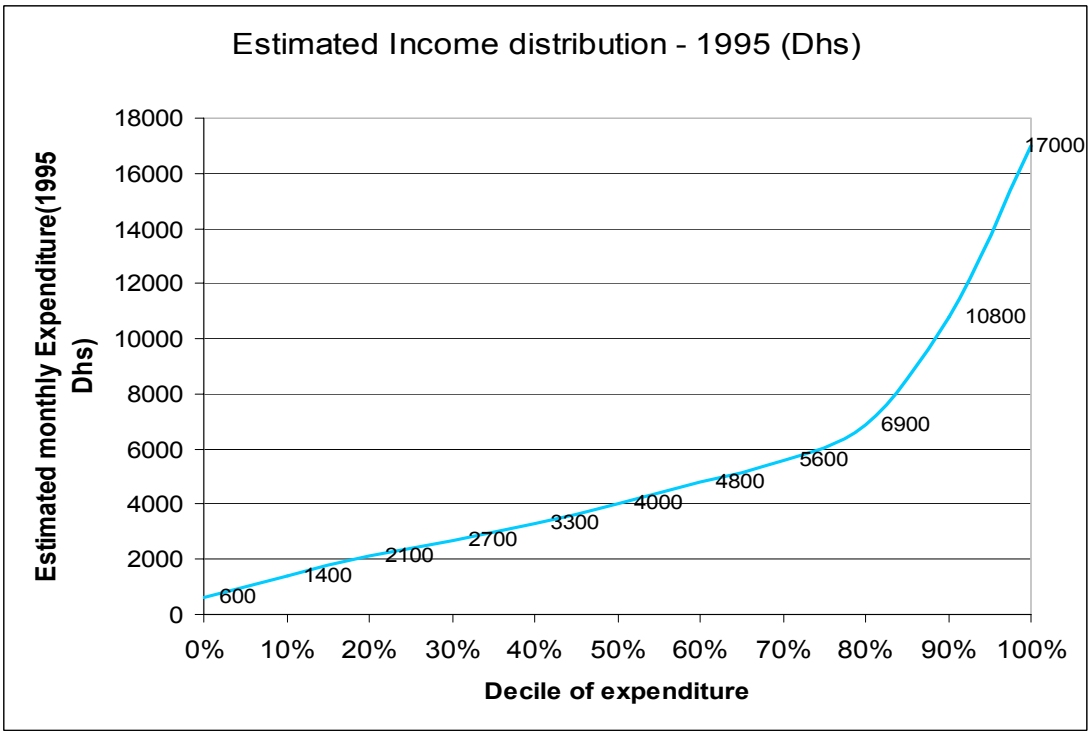
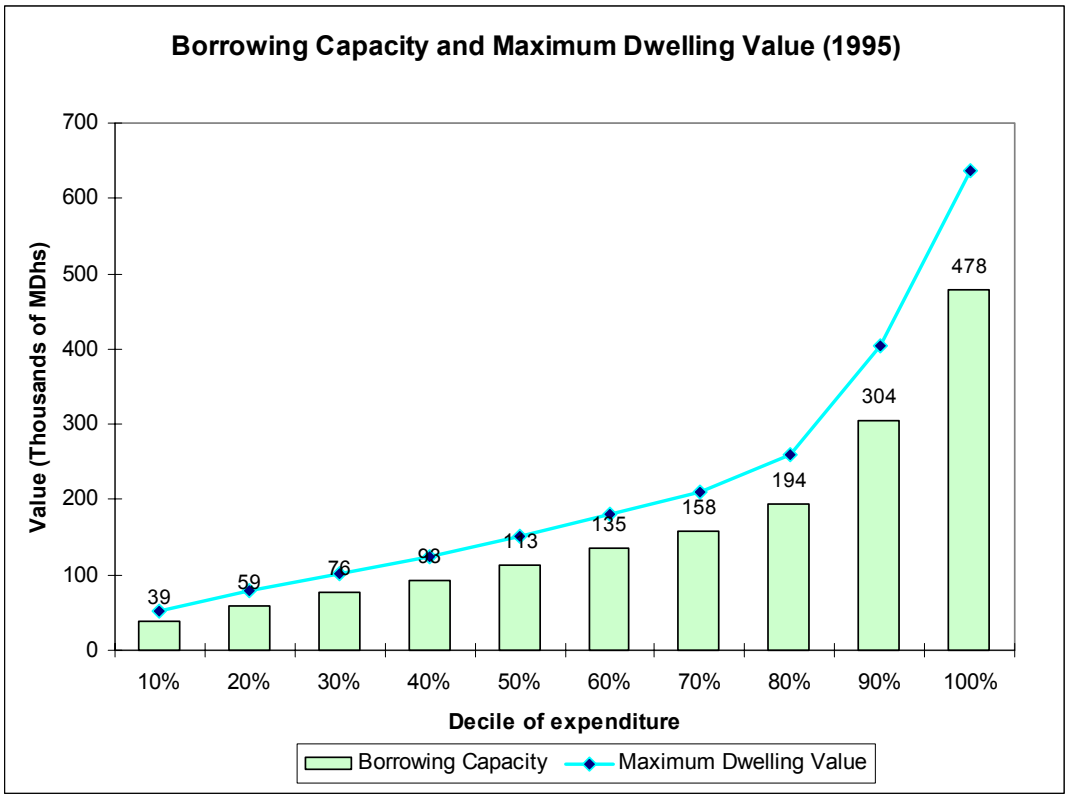


Figure 3 : Borrowing capacity and maximum dwelling value by decile of income, Morocco, 1995



Housing Demand

Figures 2 and 3 show that affordability of housing was the main problem in Morocco in 1995. Median monthly income (as measured by expenditures) stood at about MDH 4,000, approximately equivalent to US$ 400. Taking into account conditions prevailing in the mortgage market at that time (favorable conditions would be a LTV of not more than 75 %, maximum payment-to-income ratio of 30 %, and a mortgage interest rate of 11.5 %), it is clear that new construction in urban centers was totally inaccessible to those within the lower half of the income distribution.

Apart from affordability problems, access to housing credit was limited by the following:

- Lack of interest on the part of the banking system in the lower deciles of income. Banks are mainly interested in clients with stable sources of income, which is most often contingent upon having steady employment. But only 58% of the labor force in 1995 worked in the formal sector, of which 22% in the public sector. Wage earners were concentrated in the higher parts of the income distribution, so that a majority of households located in the lower half were not considered as good clients by the banks. In fact, very few people even had a bank account.

- Unfair competition on the mortgage market by the State Housing Bank, CIH, which prevented banks from participating (see below).

As a result, more than 50 % of new construction was self-construction. Moroccan households typically construct their homes one floor at a time, without recourse to housing finance. Housing loans represented only 5% of GDP in 1995, which shows the very limited outreach of mortgage financing at that time. Mortgages distributed by the CIH and other banks were of the FRM type, with constant repayments. The typical duration of a loan was 15 years. In theory, interest rates were market-based, though the quasi-monopoly of the CIH enabled it to maintain high margins.

2) Housing subsidies in Morocco in 1995

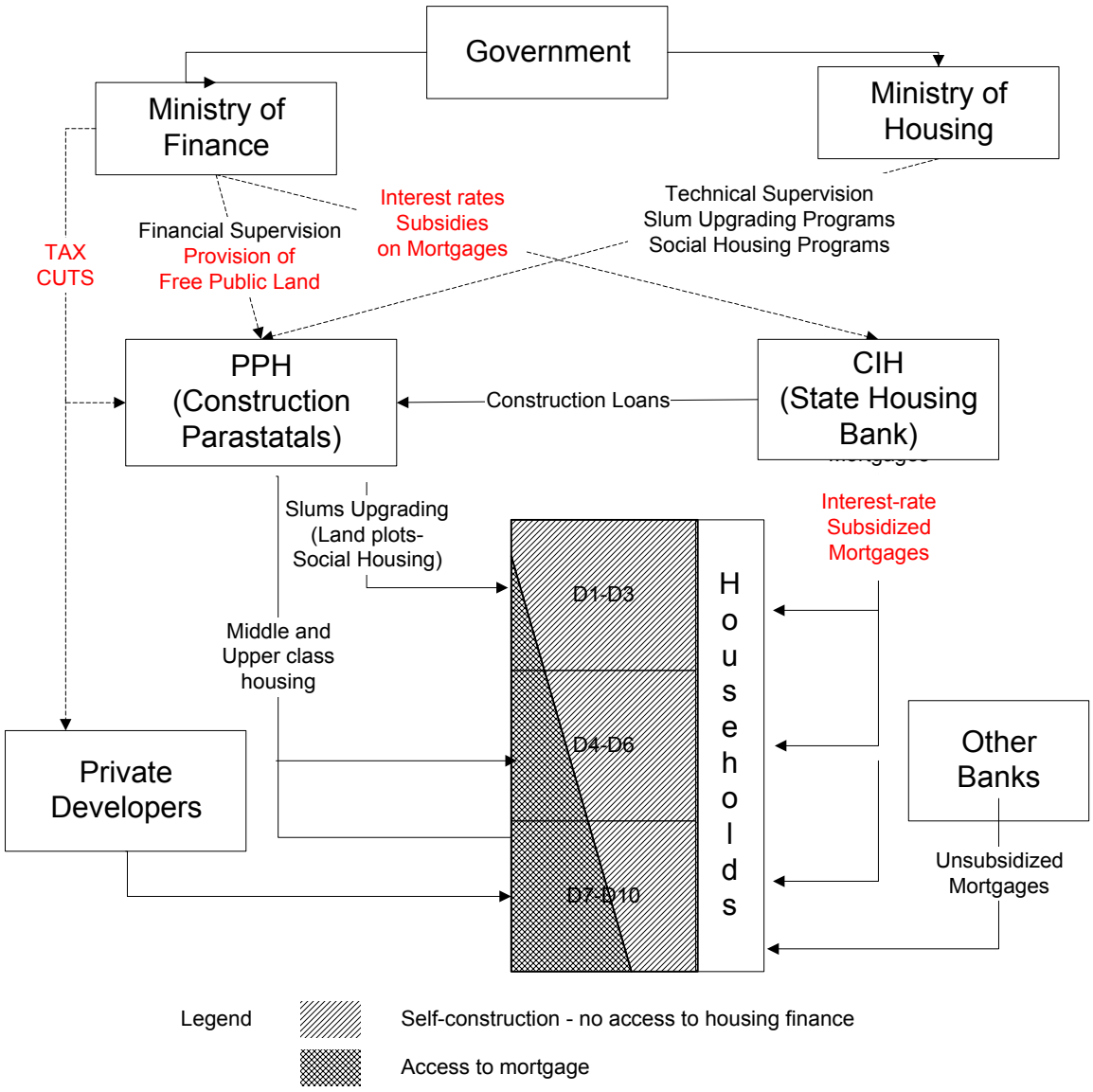
This section is devoted to the presentation of the housing subsidy system prevailing in Morocco in 1995. First is presented an outline of the organization of housing construction. Second, we examine the tax system applying to housing production and consumption. Finally, details follow on housing subsidies.

In 1995, the production of formal housing was characterized by the broad spectrum of State intervention:

- control of the majority of land servicing and construction of low-cost housing units (apart from self-construction);
- subsidies to State construction companies in the form of land parcels from the public domain;
- programs of slum upgrading and prevention, financed from the investment budget of the Ministry of Housing;
- existence of a State housing bank, CIH, which benefited exclusively from demand-side subsidies through subsidized interest rates on mortgages and other benefits;[39] and
- other important subsidies to producers in the form of tax breaks (see below).

[39] Including the right to issue bonds guaranteed by the State, and access to a faster foreclosure procedure. The former privilege was suppressed in 1993 after the reform of the financial sector.

Figure 4 : Simplified Organization of the Housing Production Sector in Morocco – 1995



The State controlled a large portion of the land servicing process through parastatal companies called *Producteurs Publics de l'Habitat* (PPHs).[40] These companies were supervised financially by the Ministry of Finance, but for operational purposes depended on the ministry of Housing. The Ministry of Housing used the PPHs as implementing agencies for the State programs of slums eradication and prevention. As such, the PPHs benefited from transfers of State public land, given or sold at very low prices. This represented an important subsidy to these

[40] Producteurs Publics de l'Habitat. These State companies included ANHI, SNEC, Attacharouk, and seven regional ERACs.

companies.[41] Another typical feature of PPH interventions was that they were not limited to the production of serviced lots or to the construction of low-cost housing for low-income households. Instead, the concept of cross-subsidization (called *péréquation* in French) was at the heart of the State strategy. This consisted of producing different types of land plots or housing units in any development project (that is, low, medium and high standard plots or housing units). Medium and high standard units were then sold for more than production cost, in order to further subsidize units and lots for low-income beneficiaries. Therefore, in practice, State subsidies from gifts of public land were not targeted to low-income households.

This cross-subsidy mechanism was possible because of the large subsidy implied by the transfer of public land, so that even after cross-subsidizing low-income units, the price of medium and high-level units remained below the price attainable by private developers who had to carry the full cost of land servicing. As a result of unfair competition, private developers were crowded out of most the land servicing and construction business. They were forced to concentrate on niches, which consisted in construction of upscale units, in the country's two largest cities, Casablanca and Rabat-Salé, where the reserves of public land had already begun to dry up.

The main demand-side housing subsidy was in the form of subsidized interest rates on mortgages. These subsidies were created by a Royal Decree of 1968,. Two subsidy regimes were created based on the estimated value of units built. For the highest bracket of unit values (*régime général*), the interest rate subsidy was 2% for the life of the loan. For the lowest bracket of unit values (*régime special*), the subsidy was a rebate of 6% on the interest rate. However, in spite of a reform of the banking sector in 1993, CIH was still the only bank benefiting from these subsidies in 1995. As a result of generous interest rate discounts, other banks could not enter the market, especially for low-value units. Their role thus remained limited, and the market share of CIH in the mortgage lending business was over 50%.[42]

Table 4 synthesizes the revenues and expenditures from the tax and subsidy system applying to housing in 1995. For the sake of simplicity, some lines in Table 4 refer to groups of provisions in the tax code, rather than to the provisions themselves. However, tax revenues from housing construction are distinguished from tax revenues from the housing stock, as commonly done from a fiscal analysis perspective.

Housing production was taxed in the form of corporate taxes, income taxes (for rental income), VAT, capital gains on housing, titling fees and duty, and construction taxes (a local tax). Existing units were taxed on income tax, capital gains, solidarity tax, titling fees and duty. The housing stock was also subject to three local taxes which represent the bulk of the municipalities' own resources: the *Patente* (business tax), the *Taxe urbaine* (Property tax), and the *Taxe d'édilité* (local services tax).[43]

[41] Regarding competition with private developers, the PPHs also benefited also from financial benefits (zero-interest loans form the State, ability to collect payments from beneficiary households on units not yet built, and from the ease to obtain administrative approvals and permits).

[42] CIH also had privileged links with the PPH, being a quasi –exclusive lender to the parastatals. The combined debts of parastatals to the CIH eventually became a serious threat for the financial health of CIH.

[43] In official terminology, the *Taxe Urbaine* is not a local tax. However, both the *Taxe Urbaine* and the *Taxe d'édilité* share the same base, i.e., both are collected by the central State administration, and both are returned to municipalities, except for 10% kept by the State as a collection fee.

In 1995, revenues generated by construction of housing units amounted to MDH 2,200 million, whereas revenues from taxes on existing units amounted to MDH 4,259 million. It is apparent that housing construction is highly taxed in comparison to existing units.

Table 4 : The Housing Tax System in Morocco – Financial Masses – 1995

Category	*Tax revenues*		
	Flows	*Stocks*	*Total*
Corporate Tax	350	-	350
Income Tax – Rental income	280	276	556
Income Tax – Deductibility of mortgage interests	-	-	-
VAT	949	-	949
Tax on Capital Gains	95	378	473
Solidarity Tax	-	350	350
Registration Fees	185	742	927
Stamp Duty	10	40	50
Total	1869	1786	3655
"Patente" (business tax)	-	833	833
Taxe Urbaine	-	391	391
Taxe d'édilité	-	1214	1214
Total	0	2438	2438
Tax on vacant land	-	25	25
Tax on land division operations	9	-	9
Tax on "lotissement"	46	-	46
Construction Tax	213	-	213
Public land occupation fee	63	-	63
Total	331	25	356
Grand Total	**2200**	**4249**	**6449**

Source : Etude PLURAM INTERNATIONAL-ALGOE-PROMOCONSULT, Ministry of Housing, Morocco (1999), except numbers with a *: Source, World Bank.

Table 5 presents subsidy breakdowns for the housing sector through tax cuts, direct subsidies, and land subsidies to producers, with the relevant estimated expenditures. Although the general principles underlying the PLURAM-ALGOE-PROMOCONSULT study to calculate expenditures on subsidies are consistent with those mentioned above, the exact methods used vary from one subsidy to another.[44] As underlined in the previous chapter, estimating tax expenditures requires consensus on the definition of "normal" tax levels.

[44] The evaluations rely primarily on common sense, rather than technically involved mathematics. Most evaluations involve no more than a "proportion rule", the difficulty being to locate reliable information to assess the quantity to be estimated.

Table 5 : Housing Subsidies in Morocco – Detailed List and Amounts as of 1995

Category	*Provision*	*Subsidy Amount (million MDH)*
Fiscal Expenditures		
Registration Fees	Reduced rate : 2.5% instead of 5% for dwellings with value under Dh 350,000 Reduced rate : 1.25% instead of 5% for dwellings with value under Dh 180,000	(total) 458*
VAT	Reduced VAT rate for housing sector (14% instead of 20%) No VAT on self-construction No VAT on social housing (area < 100 m2 and value , 200,000 DH) Exemption of VAT on interests for mortgages	824 222 44 63
Income Tax	Deduction of mortgage interests from taxable income	276*
	Deduction of 40 % from rental income	n.a.
	Deduction of mortgage interests and capital from taxable income, for wage earners buying social dwellings (Value < MDH 500,000)	n.a.
Tax on Capital Gains	Total exemption after 10 years possession, partial exemption after 5 years possession Exemption of the first sale of social unit (area < 100 m2 and value , 200,000 DH)	570* n.a.
Taxe Urbaine	Tax base cut by 75 % for homeowners Exemption for new units for the first 5 years	275 100
	Exemption for social housing for all the duration of the loan	5
Taxe d'édilité	Tax base cut by 75 % for homeowners	992
Construction Tax	Exemption for social units built on parcels with area <100 m2	13
Total		**3842**
Direct Subsidies		
Housing Ministry Investment Budget	Investment expenditures for slum upgrading and infrastructure servicing of the informal sector programs	144
Interest rate subsidies on mortgages	Applies to households buying dwellings from the Housing Bank (CIH) for less than MDH. 500,000	181
Exchange rate risks	Treasury covers the exchange rate risk on loans serving to finance social housing programs	20
Total		**345**
Land subsidies	Provision of land parcels from the State domain to public developers for construction of social housing, at prices below market	**637**
Grand Total		**4824**

Source : Etude PLURAM INTERNATIONAL-ALGOE-PROMOCONSULT, Ministry of Housing, Morocco (1999), except for items with a * : Author's calculations from World Bank (1995). n.a. : not available.

Supply-Driven Subsidies:

Land Subsidies for State-Owned Companies.

As mentioned above, this corresponds to public land given or sold at below-market prices to State companies (the PPH). The amount of these subsidies was estimated at MDH 636 million in 1995. Due to the discretionary nature of land transfers to the PPH, this subsidy was not transparent. The illusion of "free" land implied that the amount of these subsidies was not computed by the State. Transparency was again very low. This type of subsidy, similar to a manna for the PPH, did not generate incentives to lower costs or to produce housing units meeting the market demand.

The subsidy was also badly targeted, both from a spatial point of view and from a redistribution perspective. From a spatial point of view, it has been noted above that reserves of public land, while still abundant around small cities, were already greatly reduced around Rabat-Salé and Casablanca, where demand was the highest, creating a problem of sustainability for this type of subsidy. Thus, the PPH had an incentive to construct most in places where the demand for their product was lowest. The result of this disconnect between supply and demand was the servicing of land parcels and construction of housing units in remote areas, which made them difficult to sell and eventually constrained the PPH to sell them below cost. This problem has persisted until now. From a redistribution point of view, the *péréquation* system of cross-subsidies described above resulted in a waste of land given away by the State, since for any given number of low-cost units built for low-income households, two or three times as many medium or high-end units had to be constructed and sold to medium or high-income households. The PLURAM-ALGOE-PROMOCONSULT estimated that only MDH 150 million of the land subsidies (24%) effectively reached households in the three lowest deciles of the income distribution, through serviced land parcels.

This type of subsidy was not efficient. As noted above, disconnects between supply and demand were exacerbated by the lack of reserves of public land in areas where housing demand was the highest. There exists no study on the efficiency of the PPH as producers of housing units, making it difficult to assess which portion of land subsidies were merely captured instead of being transferred to consumers. However, an indirect efficiency indicator is given by the performance of the PPH. Is spite of benefiting from large subsidies, some PPHs were heavily indebted, and had to rely on yearly subsidies by Ministry of Housing to balance current operating costs.Also important was the unfair competition subsidies created for private developers who could not benefit from them. As mentioned above, this deterred the creation of a strong private construction industry, and thus led to monopoly and housing shortage.

Direct Investment by the Ministry of Housing via the PPH

This type of investment comprised all programs managed by the Ministry of Housing using its own budget, which amounted to MDH 144 million in 1995. This included slum upgrading programs in a broad sense, including: *Recasement* (giving former slum dwellers serviced land plots on which they can build their homes), *relogement* (moving former slum dwellers into finished housing units), and *prévention* (building housing units aimed at providing low-income households an alternative to informal solutions). These programs have been characterized by a mix of construction styles, with cross-subsidization of land plots and housing units aimed at low-income households for other types of units.

The implementation of the projects was done by the PPH, under supervision from the Ministry of Housing. No specific evaluation of the administrative simplicity is known. However, the responsible unit within the ministry of Housing consisted in an administrative, project-by-project, follow-up. At the beginning of the 1990s, a computer database was developed at the Ministry of Housing which included all project records. However, no permanent evaluation and monitoring framework existed.

As often, slum upgrading projects generated incentives for households which affected the program efficiency. First, the government's public commitment to dealing with slums gave households an incentive to migrate to slums, in the hope of finding cheap housing in future. Locally, when a State program was initiated in a particular slum area, the resident population would suddenly increase, which made budget and physical forecasts obsolete. Furthermore, households granted *relogement* units had strong incentives to sell them immediately and return to living in the slums. Frequently, *relogement* and *recasement* operations were not accompanied by sufficiently rigid measures to prevent redevelopment of the vacated slums. In this regard, lack of coordination with municipalities whose responsibilities were not clearly defined, became a definite problem. Local governments had no incentives to eradicate slums because these were seen as a trigger for State intervention measures, resulting in construction of housing units in their jurisdictions through national budget financing.

Efficiency was also low. A study by the Ministry of Housing on the projects managed by the PPH from 1983 to 1995 revealed the following: projects included distribution of serviced land plots (*recasement*) and completed housing units (*relogement*). Although 80% of the land plots had been distributed to beneficiaries before 1987 and 96% before 1990, 29% of the parcels were not constructed in 1997, and only 46% included completed and occupied dwellings. The population living in the parcels represented only 30% of initial program projections. In the case of *relogement* programs, the rate of completion was higher (80% of the projected housing units had been constructed) and vacancy rates were lower, but the units housed only 70% of the projected population. From the social point of view, evaluation studies undertaken by the Ministry of housing showed that the programs were focused on the physical dimension, and failed to take into account potential problems which might arise from relocation of former slum dwellers into new neighborhoods. Loss of a social network, lack of services in the newly urbanized zones, and lack of public transport networks were quoted as the most pervasive problems for the newly relocated families.

The programs were also badly targeted because of the *péréquation* system of cross-subsidization mentioned above, under which the bulk of government spending on those programs eventually benefit medium and high-income households. From a horizontal equity point of view, the programs gave preferential treatment to households living in slums, de facto encouraging the development of informal housing.

The two other main issues were coverage and sustainability. Spatial coverage was problematic because of the land availability issues in some cities, as described above. Sustainability issues also arose because the investment budget of the Ministry of Housing was subject to arbitrage each year, and appeared insufficient to seriously address the issue of informal housing development.

Demand subsidies

Interest Rate Subsidies on Mortgages Distributed by the Housing Bank.

As noted above, this corresponded to interest rate subsidies on mortgages distributed by the CIH. The amount of the subsidy was 2 points of interest for mortgages taken out on dwellings valued at less than MDH 350,000 (*régime général*), and 6 points for mortgages taken out on dwellings valued at less than MDH 200,000 (*régime spécial*). All loans issued by the CIH for the construction of units valued at under MDH 500,000 were also exempt from VAT on loan interests (at a rate if 7%)[45]. In 1992, expenditures amounted to MDH 50 million under the *régime general*, and MDH 130 million under the *régime special*.

Although these subsidies were transparent and commercially simple to explain to buyers, they were not simple to manage because the State was obliged to keep track of every single loan and reimburse the CIH annually on the basis of the loan interest rates which varied. A special unit in the Treasury managed this system. On the incentive side, however, the existence of thresholds for eligibility under the *régime général* and *régime special* created strong incentives for developers to understate the value of the units in order to fall into advantageous brackets. As the same limits applied to various tax deductions and exemptions, it was common to understate the value of dwellings.[46]

For the reasons mentioned above, interest rate subsidies were not adequately covering homebuyers, nor were they well-targeted. Moreover, since these subsidies were aimed at formal housing mortgage owners, they neglected those in the lower brackets of the income distribution.[47] A World Bank Study in 1995 based on documents from CIH showed that 80% of beneficiaries of *régime spécial* loans declared annual incomes above MDH 60,000, which corresponds to deciles 6 and above in the income distribution scale. Subsidies under *régime spécial* loans appeared better targeted, all of them targeting the poorest 40% of the population.

In the context of fixed-rate mortgages (FRMs) with fixed repayments applied in Morocco, affordability problems would arise at the beginning of the mortgage repayment period, either because of constraints on the maximum LTV (insufficient savings), or because payments were too high. In time, fixed nominal payments translate into decreasing real payments due to inflation; also, real incomes can increase. Thus, subsidies are needed mainly at the beginning of the loan. Instead, the interest rate subsidy as parameterized in Morocco would apply for the entire life of the loan, which is clearly inefficient. Moreover, under this scenario, the value of the *régime spécial* subsidy was very high, equivalent to about 40% of the mortgage value.. Combined with other types of subsidies, this resulted in huge subsidies for few fortunate households able to obtain a mortgage. Lastly, this resulted in very high inertia of the system, in the sense that loans approved at any given time would continue to generate liabilities for the State for the next 15 years and thus, flexibility was very low.

As noted above, the main problem facing subsidies at that time was that they were granted only to CIH, *de facto,* excluding other banks from competing in the mortgage market. However, the

[45] This tax seems to exist only in Morocco.
[46] This was amplified by the fact that the concept of value used for administrative purposes, the VIT, was based on administratively pre-set values for land, and on construction costs for dwellings, resulting in differences between the VIT and market value of the dwellings.
[47] The subsidy also had a built-in regressive feature (within each bracket, the higher the unit value, the higher the subsidy).

generous nature of these subsidies, especially under the *régime spécial*, was only applicable to a small number of loans. Thus, from the very beginning, sustainability problems were likely to occur given these interest rate parameters.

Subsidies through provisions in the Tax code

- Deductions of mortgage interest payments from taxable income: up to 10% of taxable income. The corresponding expenditure amounted to MDH 276 million in 1995. A World Bank study on CIH data from 1992 (World Bank, 1995) showed that the tax expenditure for CIH loans only was Mdh 115 million, out of MDH 277 million of deductible interests. This corresponded to an average subsidy rate of 41% on mortgage interests. The subsidy rate, corresponding to the marginal tax rate, was increasing in income. Households with income above MDH 60,000 per year (the highest three deciles of the income distribution), which represented 62% of the CIH mortgagers in 1992, benefited from 68% of the tax expenditure. Thus, the provision was highly regressive.

- For civil servants, the ability to deduct payments from the mortgage principal and interest from taxable income, without a ceiling, provided the dwelling is worth less than MDH 500,000. The cost of this provision is not known for 1995. However, this provision, which still applies today, is particularly inequitable, since it benefits only a specific household category, which is on average wealthier than most, and thus has easy access to funds because of their job security.

The combination of these two provisions was thus poorly targeted, with a redistribution pattern favoring the wealthy over those benefiting from interest rates subsidies. This pattern also suffered from the same coverage problems (only households to access housing finance covered), exacerbated by the income tax schedule, which resulted in the majority of interest rate subsidies being distributed to those in higher tax brackets.

Although this type of subsidy exists in many countries, it can be highly inefficient (see Skinner, 1996). In Morocco, another problem arises: when combined with interest rate subsidies, this scheme resulted in very low mortgages under the *régime général*, without any proven effect on housing supply, since most of the subsidy was distributed to segments of the population already served by the market.

Sustainability of this type of subsidy is also limited. Tax expenditures remained relatively low as long as access to mortgage is limited, but would automatically increase relative to the overall mortgage debt in the country. Moreover, the corresponding revenue losses are drawn directly from income tax revenues, which represent one of the pillars of the tax system

Regarding the other criteria, the administrative simplicity was very satisfactory (the subsidy is part of general income tax procedures), and transparency was also good. The procedure indirectly provided an incentive for filing tax returns, and was thus at the most neutral as concerns tax revenue generation for the State. Although flexibility was theoretically high, (a simple provision in the Finance Law for any given year could have suppressed this advantage), the provision was never seriously challenged, whereas others generated annual disagreements during the budget arbitrage process. This illustrates the low visibility of this measure. In contrast, sustainability of this type of subsidy was limited. Tax expenditures remained low as long as access to mortgages was limited, but would automatically increase according to the overall mortgage debt in the country. Moreover, the corresponding resources were drawn directly from income taxes.

- Lower registration fees for housing. Registration is essential for accurately recording property titles, transactions, mortgages, rights of lease, etc. Most of the revenues are derived from transaction fees. The normal rate of 5% is reduced to 2.5% for all housing unit transactions by households. Moreover, for social units (valued at under MDH 200,000 and an area below 100 m^2), the rate is further reduced to 1.25%. The corresponding fiscal expenditure was MDH 146 million in 1995.[48]

Lowering transaction fees is generally seen as a sound policy. It helps to stimulate housing transactions and evens out the real estate market by allowing households to adjust their housing stock more frequently. Notably, it reduces lock-in effects faced by recent buyers who cannot move due to the losses they would face and the difference between buying and selling prices of their dwellings. Moreover, from a standard point of view, the 5% rate which normally applies in Morocco may be considered too high. The lower fee for social units could represent yet another incentive for the construction of social units. However, whether or not this provision had any additional effect is yet to be seen, especially since it is the last of many exemptions for social units.

However, this subsidy is fairly simple to manage, transparent and simple since it is built into the normal registration process. From the incentive point of view, this provision is also positive, since lower fees reduce the opportunity cost of formal registration, and thus may drive households into the formal housing sector. This, in turn, could increase government revenues and is beneficial for the housing market. However, as in the case of other tax provisions, the lower unit rate is limited by a threshold value and thus provides incentives to decrease the reported the value of the unit.

The distributional consequences of this policy are difficult to assess. It could be argued that mainly wealthy households will benefit from it, since they are more likely to own houses. However, overall welfare gains from a more balanced housing market, and which are likely to be given to more financially constrained households, may well offset this effect.

Two other provisions of the tax system in 1995 could be considered as conveying indirect subsidies:

- Capital gains provisions.

In 1995, housing capital gains were taxed separately from other income.[49] The rate of the corresponding tax, called TPI (Taxe sur les Profits Immobiliers), was 15%, compared to 20 or 25% for other sources of income (interests and dividends). Capital gains were totally tax-exempt after 10 years of housing ownership, and partially tax-exempt after 5 years. Moreover, capital gains were subject to under-reporting, which generated a loss of revenue for the State. This comparison resulted in an estimated tax expenditure of MDH 570 million in 1995.

Very few qualitative or quantitative details are available on this tax, but its effects can be briefly assessed: it was mainly targeted to average or high-income households who are more likely to own property of higher value and it encouraged under-reporting of real estate values. This tax

[48] The calculation of the corresponding fiscal expenditure is purely conventional in this case, since the "reduced" rate of 2.5% for housing may as well be seen as the "normal" rate, since it applied to all housing transactions by individuals since 1958. In this case, only the revenue loss corresponding to social units should be counted as fiscal expenditure (MDH 13 million). However, for land transactions between individuals the rate is 5%.

[49] Since then, the TPI has been integrated into the income tax schedule.

also had very low visibility. Efficiency is low unless bequest motives are strong enough to effectively stimulate housing construction which is unlikely. However, due to this lack of information, the provision will not be rated.

- Deduction of 40% of rental income from taxable income.

Deduction of a portion of rental income is traditionally permitted to account for charges and maintenance costs applying to housing investments. The real share of those costs determine whether rental housing is "better" treated than other non wage-based income such as interest income, which benefits from a source deduction of 25%. The difference, if it exists, could be considered as a tax expenditure. However, in the present case there is no way of assessing whether or not the deduction was too generous. This provision has thus been left out of our calculations.

Local Tax Subsidies

A peculiarity of the Moroccan system consists in the very different tax treatment of home owners compared to renters. Existing property is taxed in two ways: the first tax, the *Taxe Urbaine*, is a property tax *stricto sensu*. The tax base is the rental value of the house, determined from tax grids established at the local level and distinguishing a handful of house categories and neighborhoods. The tax rate is an increasing function of the rental value. The tax is paid by the owner of the property. However, occupying owners are taxed on a base diminished by 75% (and the rate corresponding to this lower base.[50]. In addition, new units are exempt from the *Taxe Urbaine* during the first five years of ownership.

The second tax, the *Taxe d'Edilité*, is a tax on urban services and is paid by the household occupying the dwelling. The tax rate is a flat 10%, whereas the tax base is the same as that of the *Taxe Urbaine*, including the 75% cut for owner-occupiers.

The potential revenues lost from the base cut for owner-occupiers were the largest fiscal expenditure in 1995, representing nearly 30% of all subsidies. The 75% cut off the base for owners has been criticized for many reasons. First, it introduces a strong bias against rental housing as an investment, via the *Taxe Urbaine*. Second, renters pay four times as much as owners in terms of *Taxe d'Edilité* for similar housing units. However, this tax is levied in order to compensate for services offered locally to all residents, regardless of their status, and should thus be the same for renters and owners. Third, the effects of the provision for real estate investments have not been established. It should at the very least be indirect since housing construction alone is not affected. Moreover, since provisions affecting housing are different from other types of capital, this category of tax rebate could eventually result in higher housing prices through a capitalization effect. Comparisons drawn with other countries also suggest that effective tax rates on housing resulting from these tax cuts could leave the housing stock relatively untaxed compared to construction of housing.

However, the most problematic aspect of this provision in terms of efficiency concerns the local government revenues. The *Taxe Urbaine* and *Taxe d'édilité* , along with the business tax,

[50] For example, let us consider a dwelling whose rental value is estimated to be MDH 30,000. If the dwelling is rented, the corresponding marginal tax rate would be 24% and the tax amount would be MDH 5,100 (corresponding to an average tax rate of 17%). If the dwelling is owner-occupied, the base will be brought back to MDH 7,500, commanding a marginal tax rate of 16% and a tax amount of MDH 540 only (corresponding to an average tax rate of 1.8%).

represent the main source of revenue for municipalities. In the context of decentralization and increasing responsibilities at the local level, a cut in the tax base having the highest revenue potential is a severe blow to municipal financial capacities. Transferring the tax burden to renters, while the ownership sector is thriving due to other favors, is bound to reduce revenues further.

The main problems of incentives associated with these two types of taxes in Morocco (see SCET-Urba-Systems, 2003) are linked to the method of tax collection and management. The legal parameters of the *Taxe Urbaine* (base, rates and exemptions) are dictated by the Central State and passed through the Finance Laws, rather than by the municipalities. The taxes are collected by the tax administration of the central government. The tax revenue is then returned to the municipalities where they were collected (less 10% retained by the Central State as administration and collection fees). Thus, municipalities in which taxes accrue have no real capacity or incentives to manage this source of revenues and are at times also reluctant to increase the tax paid home owners. These problems have been discussed for quite some time, but so far have not resulted in any concrete changes.

Evaluation of Individual Subsidy Programs

Based on the discussion above, the main housing subsidy programs have been ranked according to the nine criteria retained in the analysis. The results are aggregated in Table 6.The scale chosen here ranges from 1 to 5, with 1 denoting a very poor performance, and 5 an excellent performance. Figures are given instead of qualitative ratings only for aggregation purposes. Equivalent qualitative assessments could be as follows:

1 Very Poor
2 Poor
3 Fair
4 Good
5 Very Good.

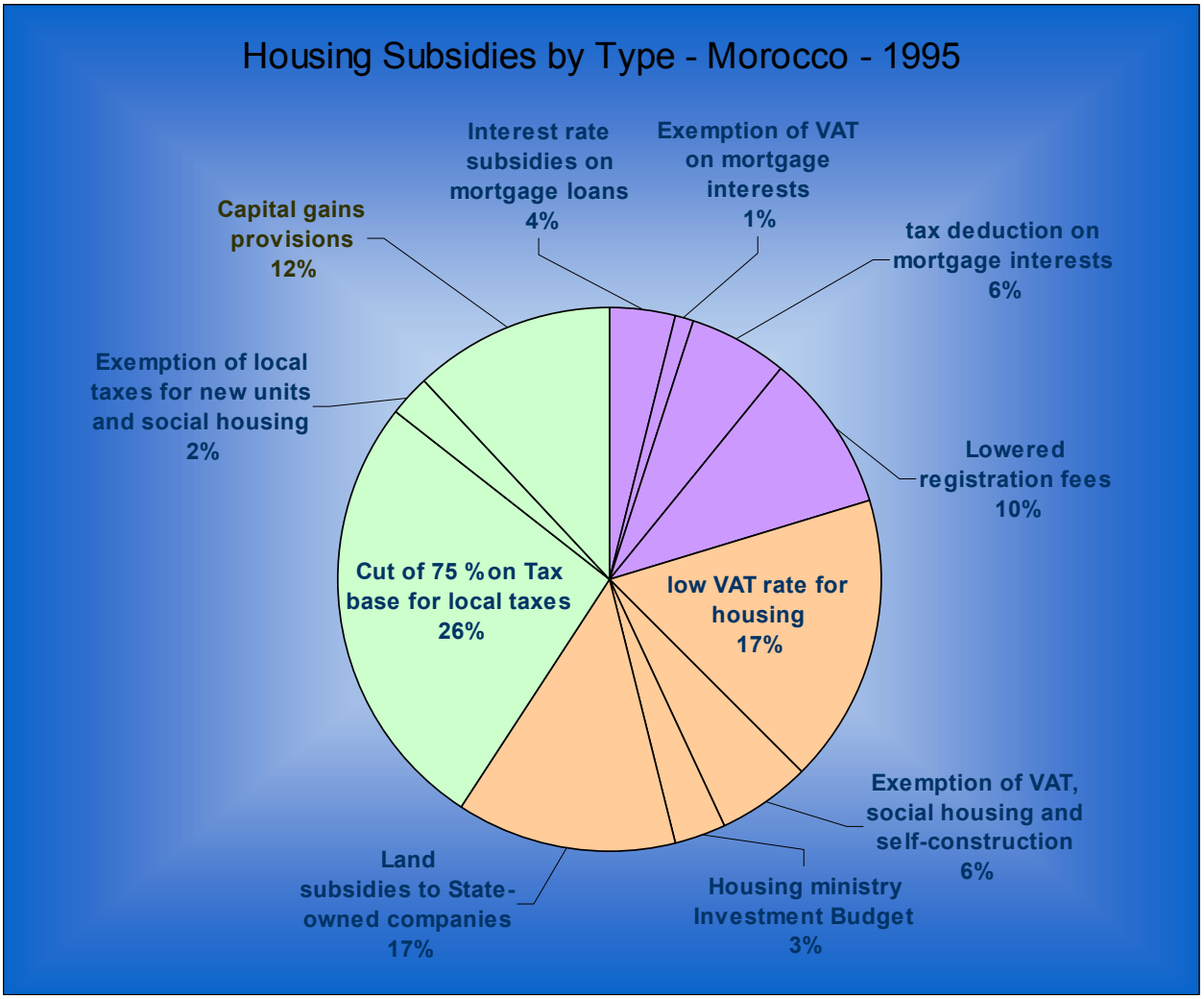
Table 6 : Performance of the housing subsidy system – detailed level - Morocco - 1995

Type of subsidy	*% Total cost*	*Administrative Simplicity*	*Transparency*	*Incentives*	*Targeting /Vertical Equity*	*Coverage*	*Efficiency*	*Visibility*	*Sustainability*	*Flexibility*
Demand-side subsidies										
Interest rate subsidies on mortgage loans	4.2	3	5	2	2	2	3	5	1	1
Exemption of VAT on mortgage interests	1.5	3	5	//	2	2	3	2	3	3
Income tax deduction on mortgage interests	2.7	4	5	3	1	1	2	4	2	4
Lowered registration fees	3.4	5	5	4	3	2	4	3	3	5
Total demand side	**11.7**	**3.8**	**5.0**	**//**	**2.1**	**1.8**	**3.1**	**3.8**	**2.1**	**3.1**
Supply-side subsidies										
Low VAT rate for housing	19.0	5	4	//	1	2	2	2	3	2
Exemption of VAT, social housing and self-construction	6.1	2	4	//	3	2	2	3	2	2
Housing ministry Investment Budget	3.3	3	2	2	2	2	2	5	3	3
Land subsidies to State-owned companies	14.7	2	1	1	2	1	1	1	2	3
Total supply side	**43.2**	**3.4**	**2.8**	**//**	**1.7**	**1.7**	**1.7**	**2.0**	**2.5**	**2.4**
Capital subsidies										
Cut of 75% on Tax base for local taxes	29.2	5	5	2	1	4	1	2	1	1
Exemption of local taxes for new units and social housing	2.7	5	5	//	1	3	1	2	3	3
Capital gains provisions	13.2	2	3	1	1	1	2	1	3	4
Total capital side	**45.1**	**4.1**	**4.4**	**//**	**1.0**	**3.1**	**1.3**	**1.7**	**1.7**	**2.0**
Grand Total	***100.0***	***3.8***	***3.8***	**//**	***1.4***	***2.3***	***1.7***	***2.1***	***2.1***	***2.3***

3) Aggregate Results

Figure 5 breaks down the estimated total expenditures for housing subsidies in 1995 into its main components. Different colors indicate, respectively, subsidies for housing construction (orange), housing demand (pink), and housing as capital (green). Figures have been extracted from Table 5.

Figure 5 : Expenditures on Housing Subsidies by Type - Morocco – 1995



A few striking facts emerge:

- Total subsidies amounted to MDH 4.8 billion annually (1.5% of Morocco's GDP). Of those, only MDH 325 million (less than 7%) were subsidies on budget, and interest rate subsidies represented only 4% of the total of subsidies.

- Budget and fiscal expenditures on mortgages (interest rate subsidies, deduction of interest from taxable income) amounted to MDH 460 million, in spite of the weak development of the mortgage market. This shows that severe problems of sustainability would show up following the development of housing financing.

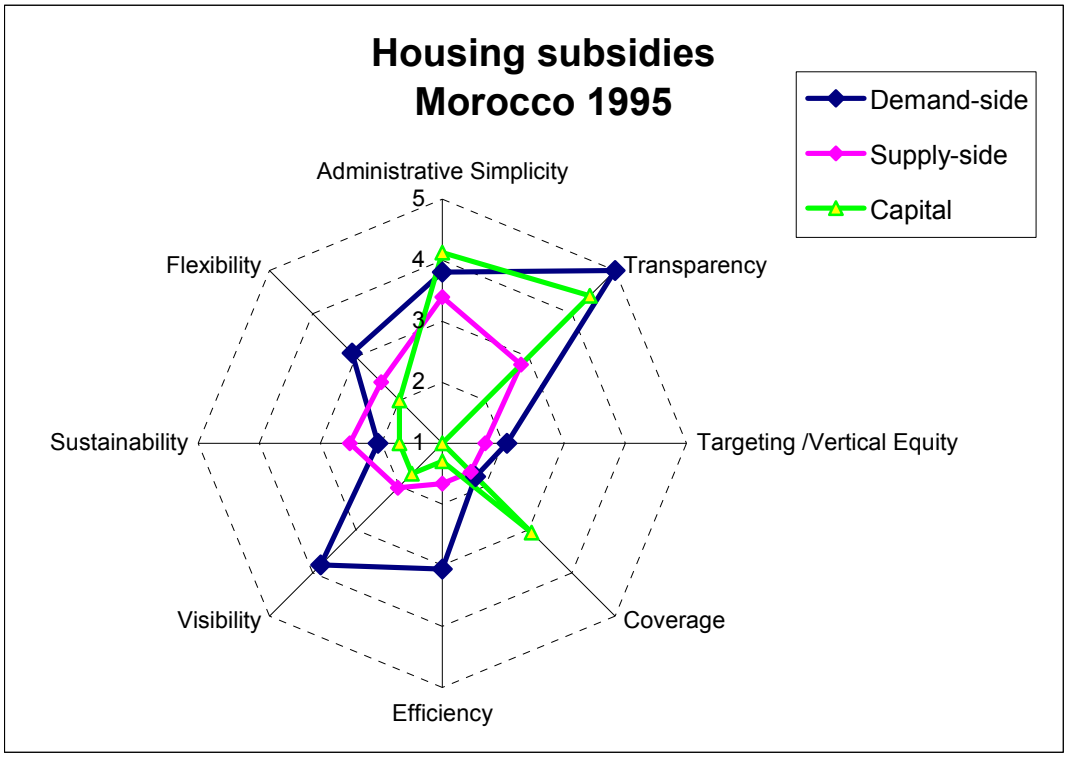
- Land subsidies, arguably the less visible of all subsidies, amounted to twice the subsidies for budget or 13% of total subsidies.

- The distribution of subsidies was 39% for housing construction, 20% for housing demand, and 41% for housing as capital stock..

- Cuts on local tax bases for homeowners and exemption of new units from the *Taxe Urbaine* represented MDH 1.3 billion, by far the highest tax expenditure.

An average of the scores obtained by certain programs based on the various dimensions by broad category of subsidies allows a synthetic visualization of the system. Figure 6 shows the results of this aggregation.

Figure 6 : Performance of the housing subsidy system – aggregate level - Morocco – 1995



Subsidies for housing demand clearly ranked first in terms of transparency, visibility and efficiency, and also fared better in terms of flexibility. Subsidies for housing as capital stock performed well in terms of simplicity and transparency, and relatively well in terms of coverage. However, this was achieved at the expense of efficient targeting. Efficiency, visibility and sustainability were also low. Lastly, subsidies for housing construction were ranked below average except in the case of administrative simplicity and transparency. As such, this type of transparency ranked lower than other types of subsidies.

4) Changes in housing policies between 1995 and 2002

This section describes the main changes which took place in the legal, regulatory and fiscal environments of the sector between 1995 and 2002. Overall, the main trends were :

- The tendency to push tax exemptions further for builders (see below).[51]

- In parallel, the support for development of a strong private construction industry, via tax and regulatory provisions. The idea was to create a setting in which the PPH could sell serviced land to private developers, which would cover the bulk of housing construction.

- The continuing intervention of the State in the housing sector, via publicly sponsored construction programs (*Programme des 200 000 logements royaux*). Resources from the FSH (see below) and continued provision of public land are the bases for the important new program for slum eradication, called "Villes sans Bidonvilles", managed by the Ministry of Housing, which would span years 2004 to 2010. This program was included on the "usual" interventions of the Ministry of Housing, which continue to evolve as described in the previous sections.

- The development of housing finance, which followed the reform of the banking sector. In 1996, the advantages of the Royal Decree of 1958 were extended to other banks, which rapidly began to compete in the mortgage market. This was encouraged by a macro-economic context of decreasing interest rates, which dropped to around 13% in 1995, and to 8 or 9% in 2004. In this context, outstanding loans as a share of GDP stood at 7% in 2003.he market share of the CIH declined to 30-35% of outstanding mortgages,oan to value (LTV) ratios dropped from 30-40% to 10%, currently sometimes to 0%.

The decrease in interest rates and in LTV requirements resulted in increased affordability of housing. However, in conjunction with the increase of projects eligible for interest rates subsidies, this drop also caused a tremendous increase in the budgetary charges for interest rate subsidies, which rose to MDH 450 (US$50 million) per year in 2003. This sustainability issue was eventually resolved by eliminating this subsidy as of 2004.

In 1999, through a provision of the Finance Law known as Article 19, private developers were granted total tax exemption (national and local) on construction of housing units (units valued at less than MDH 200,000). The only eligibility criteria to benefit from this measure was the commitment (in the form of an agreement between the developer and the Ministry of Housing) to construct 3,500 units within 5 years for the entire country. In 2001, this figure had decreased to 2,500 units. Another constraint is that "grouping" between developers is prohibited. Thus, the provision is de facto limited to large developers.

The last modification of the institutional framework took place during the year 2004, with the termination of interest rates subsidies. Initially, the system was to be replaced by upfront subsidies for homeowners. Technical assistance from the World Bank in 2002 and 2003 had led to a system of parameters for the upfront subsidy system, which had been approved in principle by the Ministry of Housing and Ministry of Finance. However, the project was eventually dropped. Even thus, interest rate subsidies will continue to be a burden for the State budget for

[51] In 1996, for example, the first sale of social units (area < 100 m2 and value < MDH 200,000) was totally tax exempt on capital gains.

some time because loans already attributed will continue to benefit from subsidies. Therefore, subsidy payments will decrease only slowly and continue until at least 2015.
Interest rates subsidies were "replaced" by a combination of two instruments:

- A Social Housing Fund (FSH) financed by a tax on cement to be used by Ministry of Housing, notably for National Program of Slum Eradication.
- Mortgage Guarantee Funds.

The FSH will be a special fund, separate from the State's main budget. The Fund will be replenished by a tax on cement (which price is controlled), of MDH 100 per ton. Given the current amount of local cement production, the tax is expected to generate about MDH 1 billion per year. The corresponding resources will be allocated to the FSH. Control of the FSH resources is less than the Ministry of Housing's standard budget investment resources. The budget submitted to Parliament during the annual Finance Law process contains only a list of possible uses of FSH resources for the coming year. The allocation of resources to those uses is not specified and is determined only during the course of the year by the Ministry of Housing, and subject to Ministry of Finance approval for disbursements.

Thus, the FSH is not very transparent. In comparison, another special off-budget fund, the FNAET, is very opaque.[52] On a positive note, the FSH, based on a stable and increasing base, represents a reliable resource for the Ministry of Housing, and totals more than twice the Ministry's own investment budget. And is also less subject to budgetary arbitrages, given its para-fiscal nature. Resources from the FSH and the continued provision of public land are at the basis of the new program of slum eradication, called "Villes sans Bidonvilles", managed by the Ministry of Housing. This program was added to normal interventions by the Ministry of Housing, which continue as described above.

The Mortgage Guarantee Funds were designed to provide an incentive for banks to provide services to the low-income population by eliminating a degree of credit risk on mortgages. Initially, three funds were to be created which translated into a segmentation of the population frequently used in Morocco:

- one Fund (FOGALOGE Public) was for civil servants;
- a second fund (FOGALOGE Privé) for wage earners of the private sector; and
- a third fund (FOGARIM) for households with irregular / informal sources of income.

The first Fund was created and capitalized on by the State from the primary budget. The government was committed to capitalizing on the Fund up to MDH 350 million. The second Fund does not exist today. Initial negotiations between the Ministry of Finance and private sector representatives led to believe that the Fund would be financed by both parties. However, after the announcement of interest rate subsidy elimination, negotiations broke down. An agreement has still not been reached with the private sector for the capitalization of the Fund. The third Fund, FOGARIM, was created in February 2004 and will be capitalized by the State. A first tranche of MDH 200 million was to be deposited in 2004 from the FSH resources. The government committed to capitalize the Fund up to MDH 600 million in future.

The main characteristics of the Fund for informal households, FOGARIM, are the following :

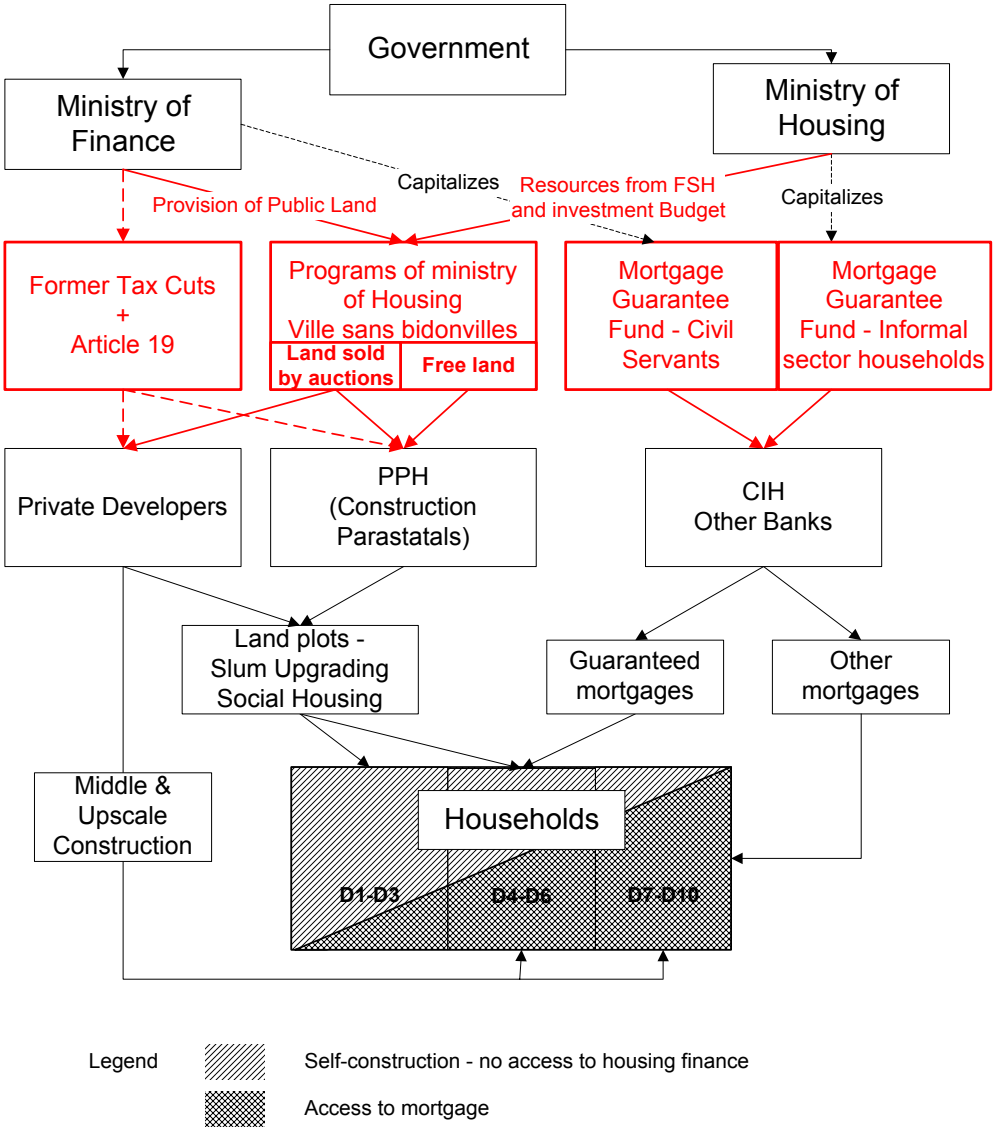
1) Only banks are eligible (not financial institutions or micro-credit institutions).
2) Eligible loans are: FRM with fixed payments only, with a cap on maximum monthly payments equal to MDH 1,000 (about US$100). Maximum LTV can reach 100%. The specific LTV amount is left to the discretion of banks.

[52] Subsidies for current PPH expenditures have been allocated through this Fund for some time.

3) The Fund covers 70% of the credit risk (principal balance at the date of default).
4) The Fund is not conceived as an insurance tool, at least at start-up. Specifically, banks pay no actuarial premium for each loan they guarantee.

To summarize this discussion, Figure 7 gives a simple description of the institutional organization of the current housing production sector.

Figure 7 : Simplified Organization of the Housing Production Sector in Morocco – 2004



5) Evaluation of New Instruments

Article 19

No economic evaluation of the Article 19 program is yet available. In particular, systematic studies have not yet been undertaken concerning the impact of Article 19 on housing supply. However, the following comments can be made:

- In theory, the importance of the subsidy for units valued at less than MDH 200,000 compared to more expensive units should have caused substantial distortions in the housing supply. One should expect to witness the quasi disappearance of units with values just above MDH 200,000, up to a floor value above which investment is again profitable.

- The fiscal burden is enormous. The cost of the 110,000 units planned in the program agreed at the beginning of 2004 in terms of national taxes only,[53] was estimated to be MDH 4 billion, or MDH 36,000 per unit. In spite of the fact that the VAT exemption already existed for social housing units, the differential cost was still MDH 1.5 billion, or MDH 14,000 per unit. However, to this should be added all the revenue lost by the municipalities (tax on land division operations, tax on parcelling out, and construction tax)[54]. Since locally generated revenues for municipalities are scarce, this is an important parameter to consider.

- As noted above, the subsidy is tailored to big developers and thus relatively inequitable for smaller developers. As a consequence, only those developers who have access to the largest markets can benefit from the tax cut. At the beginning of 2004, in the 50 projects agreed upon by the Ministry of Housing, 70% of the projects were located in Casablanca.

- As always, the ceiling value on housing units created agency problems. Those concerned the monitoring of prices (while the list price was 200,000 MDH or slightly under, "real" prices were higher), but also the monitoring of firms having signed conventions. The Article 19 did not include provisions in case a firm could not provide the minimal number of required units within five years. What action needs to be taken in such cases?[55]

- However, prices of social housing units in Casablanca have in fact decreased sharply since 2002, and the trend is continuing. Units are now advertised as low as MDH 160,000, and local sources report the decreasing incidence of bribes. Without a sound economic evaluation, whether increased competition between developers is a consequence of Article 19 or simply traduces the critical mass reached by the private construction sector cannot be told. Nonetheless, the comparison of the magnitude of the recent fall in prices of social units (about MDH 40,000) to that of the incremental cost of the Article 19 (MDH 14,000) seems to suggest that the last layer of subsidies helped in eliminating rents and increasing competition.

[53] These include stamp duties paid by the developer on land and by the buyer on housing unit ; VAT on housing construction ; and corporate tax for the developer.
[54] Social units were already exempt of construction tax before 1999.
[55] The choice seems to lie between forgiving, which would be equivalent to giving up on the quantitative quota, or reclaiming all the tax rebates corresponding to the units constructed since the signature f the convention, which could result in bankruptcy of the developer.

Due to perceived high costs for the State revenues, the article 19 has been threatened several times when it came to passing the finance Law. This is likely to be the case again in the future, as the program is not in a stationary state and continues to grow. In all cases the phasing out of the program should be designed carefully, since its brutal suppression would imply a large negative shock to the economic and financial environment of the construction sector.

Mortgage Guarantee Funds

FOGALOGE Public is a replication on a bigger scale of an existing Fund managed by the Fondation Hassan II, the FOGALEF, aimed at giving subsidized loans to low-income civil servants from the Ministry of Education. The main characteristic of loans covered by those funds is that payments are directly deducted from the borrowers' payrolls, thanks to an agreement between the banks and the Treasury. Hence credit risk, intrinsically low for this category of households[56] , is further reduced. The usefulness of the FOGALOGE Public is thus questionable.

The government's expectations from FOGARIM were high. The Fund was to be the miracle solution to suddenly give access to housing finance to households working in the informal sector, and in particular to the future beneficiaries of the slum eradication program VSB. The official rhetoric presented the creation of the Fund as an "exchange" for the late interest rate subsidies. However, interest rate subsidies were useful in bridging financing gaps for low-income groups. By contrast, the Guarantee Fund is aimed at covering credit risk, and should not be expected to result in improved affordability of housing. Increased affordability could only come from a decrease in interest rates due to the shifting out of credit risk. However, this cannot be higher than a few dozens of basis points, which stays short of the previous interest rate subsidies. In that sense, the creation of the Guarantee funds has not solved the financing issue created by the suppression of interest rate subsidies. In an attempt to lower monthly payments compared to previous mortgage types, the government wanted the banks to increase the duration of mortgages, from 15 years to 25 or 30 years.

In June 2004, no credit had been guaranteed, though the technical arrangements had been made and tested by the managing company and the participating banks. It is thus too soon to make a sound judgment on the efficiency of FOGARIM. However, the following remarks can be made.

First, some parameters of the Fund constitute bad incentives for participating banks and households:

- The possibility let to banks to go up to 100% LTV is very risky. International experience shows that LTV is by far the main factor driving default risk. Default rates grow exponentially with LTV worldwide. Since the groups targeted by FOGARIM are not well known to the banks yet, imposing an upper limit to LTV as an eligibility condition would sound as a good incentive.

- The rate of coverage of the credit risk (70%) is very high by international standards. Usual rates range from 20% to 40%. With such a high coverage, incentives for banks to act in case of default could be limited. If this happens to be true, it could cause serious moral hazard problems as time goes by.

[56] Income of civil servants is known in advance with almost no uncertainty. Moreover, in practice civil servants in Morocco benefit from a lifetime employment guarantee which lowers default risks.

- The fact that no actuarial premium per guaranteed credit is paid by participating banks makes the Fund distinct from an insurance device, at the risk of being perceived as a subsidy product, giving incentives to the banks not to assess credit risk correctly

- The fact that only FRMs are eligible to the guarantee bears potentially huge interest rate risk, exacerbated by the extended duration of the loans. Due to the absence of long term liabilities in Morocco, the main banks have not been able to properly hedge interest rate risks. This is not perceived as a big risk by the government in the present context.[57] However, interest rates may rise again in the short future.The fact that only fixed repayment schedules are allowed, combined with the cap on maximum monthly payments, could be a problem for categories of households having highly seasonal or irregular income.More generally, most of the official target population of the Fund has not even access to a bank account yet. Banks will start lending by focusing on "high income" informal categories (grocers, taxi drivers, etc.) which they know. Extensions to lower income groups of the informal population, if it happens, can only be gradual and slow. Thus, the major part of the beneficiaries of the VSB program will not be covered by FOGARIM.

6) Comparison of the housing subsidy system in 1995 and 2002

Table 7 presents the costs of the housing subsidies system prevailing in Morocco in 2002, which is the last year for which figures are available. As related above, the last decade has witnessed the extension of tax cuts to housing producers. Tax expenditures for the sector now represent around MDH 6.5 billion per year (1.8% of GDP), constituting the bulk of housing subsidies, whose total is estimated around MDH 9 billion per year (2.6% of GDP). The growth of tax expenditures has been driven by the drive to push social housing out of the tax base (first partially, then totally), a trend which culminated with Article 19. On demand side, the development of the mortgage market has mechanically pushed up fiscal expenditures incurred on the income tax, due to generous deductibility provisions. This latter trend will continue as access to credit expands further.

Figure 8 breaks down the estimated expenditures on housing subsidies into its main components. Different colors signal respectively subsidies to housing production (orange), to housing demand (pink), and to housing as capital (green). The comparison with figure 5 reveals the following trends:

- The repartition of subsidies shifted over the years towards production subsidies, which now represent 44% of total subsidies, and demand subsidies (33% of the total). This is explained both by the growth of these two types of subsidies in absolute value, but also by the relative stability of the third type of subsidies. Local taxes have not grown rapidly over the years. However, Cuts on local tax base for homeowners and exemption of new units from Taxe Urbaine is still the highest tax expenditure.
- Budget and fiscal expenditures on mortgages (interest rate subsidies, deduction of interest from taxable income) now amount to MDH 1,580 million, including the remnant of interest rate subsidies and the capitalization of the Mortgage Guarantee Fund by the State. This has more than tripled in seven years, due to the rapid development of the rental market.

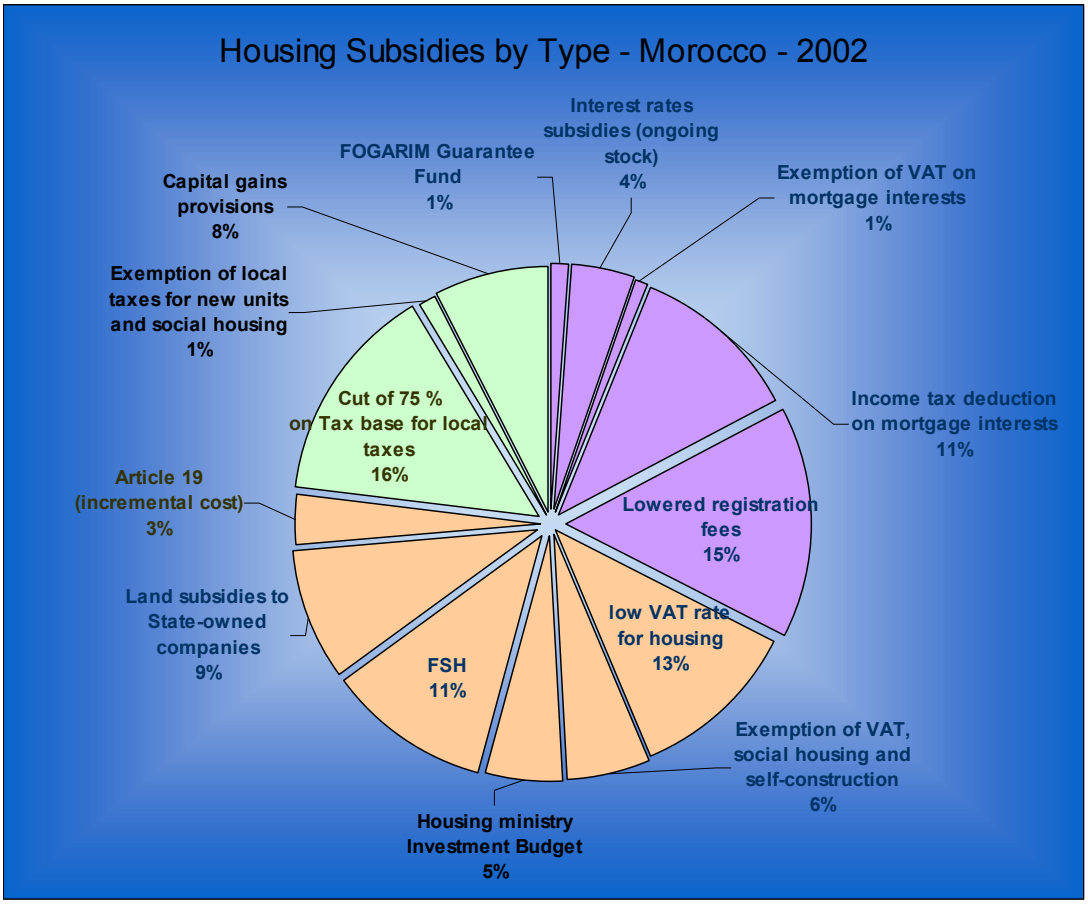
[57] Interest rates have been steadily declining for ten years, and the share of mortgages in the balance sheet of banks is still limited.

Table 7 : Housing Subsidies in Morocco – Detailed list and amount as of 2002

Category	*Provision*	*Subsidy Amount (million Mdh)*
Fiscal Expenditures		
Registration Fees	Reduced rate : 2.5% instead of 5% for dwellings with value under Dh 350,000 Reduced rate : 1.25% instead of 5% for dwellings with value under Dh 180,000	(total) 1428
VAT	Reduced VAT rate for housing sector (14% instead of 20%) No VAT on self-construction No VAT on social housing (area < 100 m2 and value , 200,000 DH) Exemption of VAT on interests for mortgages	1020 340 177 77
Income Tax	Deduction of mortgage interests from taxable income	602
	Deduction of 40% from rental income	n.a.
	Deduction of mortgage interests and capital from taxable income, for wage earners buying social dwellings (Value < 500,000 Dhs)	406
Tax on Capital Gains	Total exemption after 10 years possession, partial exemption after 5 years possession Exemption of the first sale of social unit (area < 100 m2 and value , 200,000 DH)	700 n.a.
Taxe Urbaine	Tax base cut by 75% for homeowners Exemption for new units for the first 5 years	228 100
	Exemption for social housing for all the duration of the loan	13
Taxe d'édilité	Tax base cut by 75% for homeowners	1,100
Article 19 (differential cost)*	Construction of social housing units exempt form all taxes and duties (national and local)	300
Total		**6,491**
Direct Subsidies		
Mortgage Guarantee Funds	Capitalization from the State for a 10-year period	95
Housing Ministry Investment Budget	Investment expenditures for slum upgrading and infrastructure servicing of the informal sector programs	450
FSH	Dedicated Housing Fund (funded by a tax on cement)	1,000
Interest rate subsidies on mortgages	Still applies to loans originated until 2004	400
Exchange rate risks	Treasury covers the exchange rate risk on loans serving to finance social housing programs	20
Total		**1,965**
Land subsidies	Provision of land parcels from the State domain to public developers for construction of social housing, at prices below market	**800**
Grand Total		**9,256**

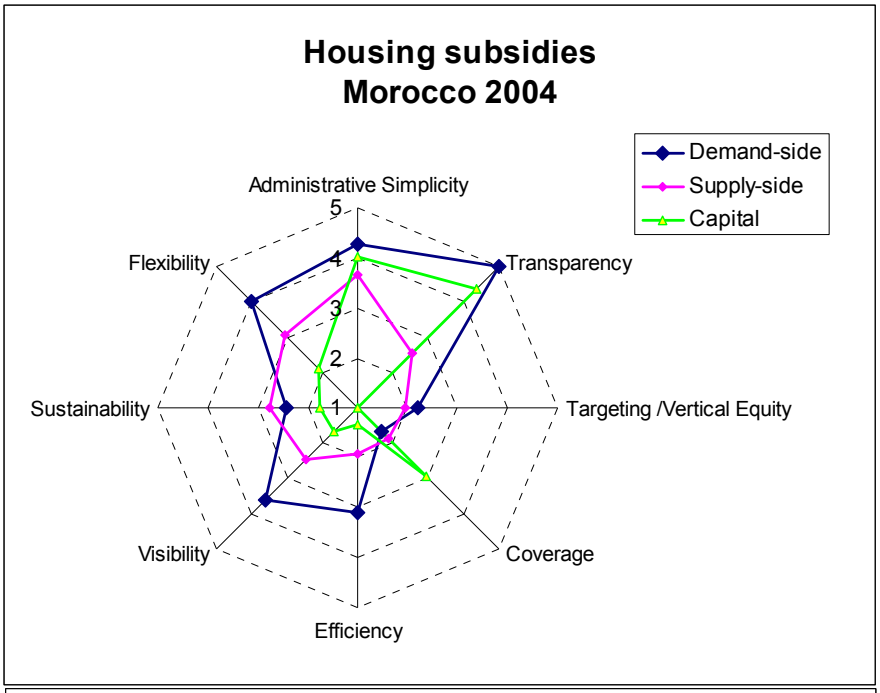
* The differential cost is calculated with reference to preexisting fiscal provisions for social housing
Source : World Bank calculations (2004).

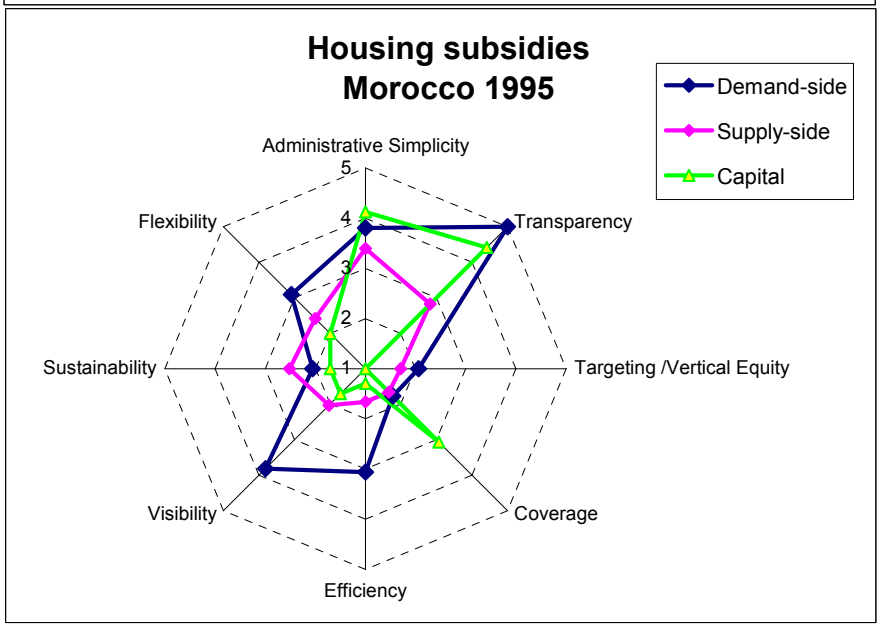
Figure 8 : Expenditures on Housing Subsidies by Type - Morocco – 2002



The 2002 counterpart to Figure 5 is given by Figure 9. The two graphs are strikingly similar. The three types of subsidies rank in the same order under the various criteria. The only noticeable changes concern an increase in flexibility, both for demand and supply-side subsidies, and a decrease in transparency for production subsidies. For demand-side subsidies, the increase in flexibility corresponds to the growth of subsidies related to low registration fees and deductions of mortgage interests from taxable income. However, as noticed above, flexibility in this case is perhaps more theoretical than real : although the regressive characteristics of the Moroccan income tax deductions have been known for a while, the corresponding provisions have not changed and have not even seriously been challenged. Nonetheless, flexibility is going to increase in the future, due to the progressive phasing out of interest rate subsidies. For production subsidies, the increase in flexibility comes from the FSH, whose para-fiscal nature makes very easy to use for different purposes. However, dedicated funds of this kind are very opaque and have bad incentives properties. This explains the decrease in transparency for production subsidies.

Figure 9 : Expenditures on Housing Subsidies by Type – comparison 1995-2002

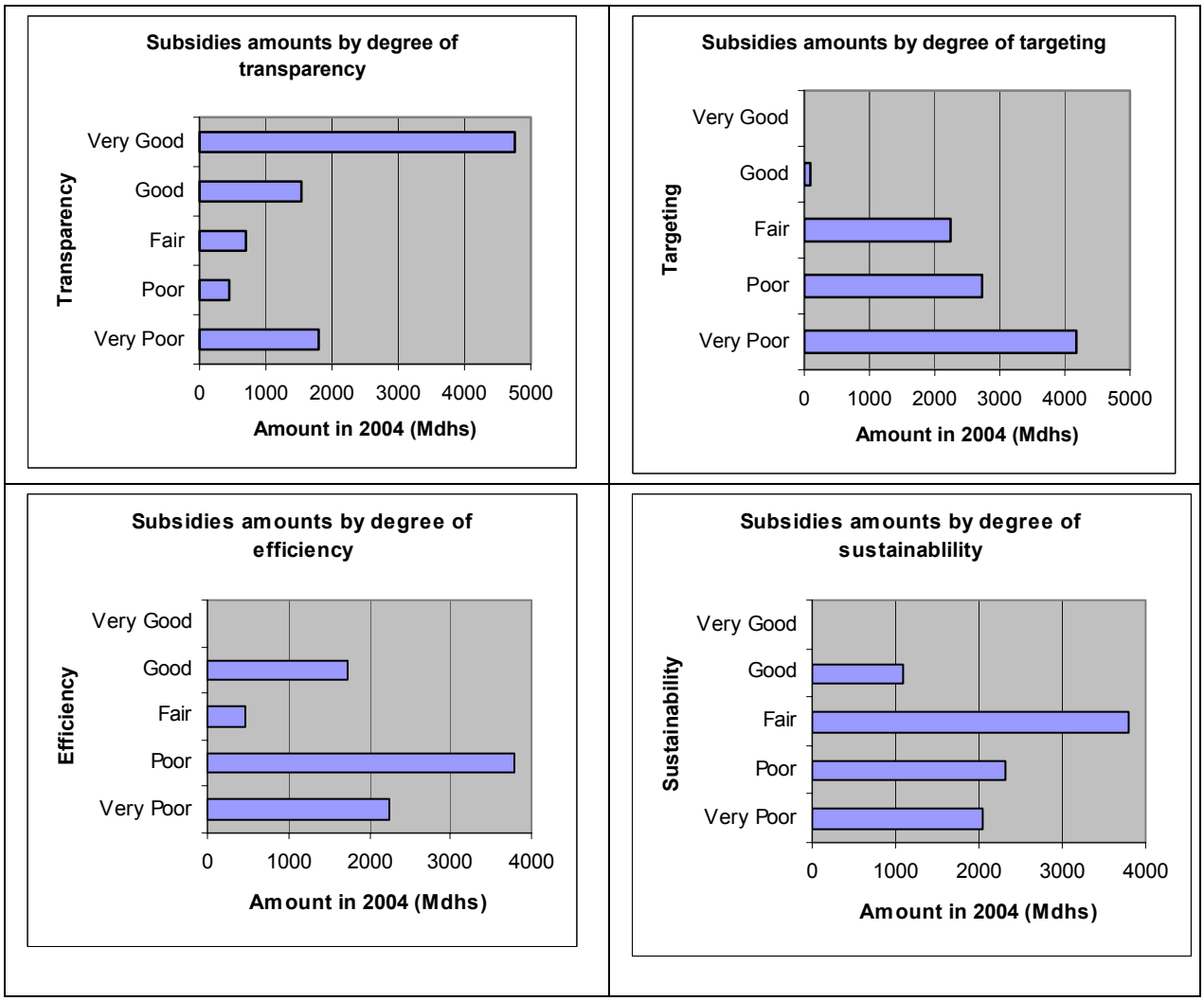




7) Conclusion

This paper presents a systematic methodology to evaluate systems of housing subsidies. The methodology is applied to the system of housing subsidies prevailing in Morocco in 1995 and 2002. The various parts of the housing subsidy system are described, and rated along public finance criteria. The framework used here provides a synthetic overview of the housing subsidy system of Morocco. It may be used to compare the Moroccan system to those of similar countries. To illustrate this possibility, Figure 10 presents some of the results in a different manner.

Figure 10 : Expenditures on Housing Subsidies by Type – comparison 1995-2002



The paper shows that the most visible subsidies have been neither the most inefficient nor the most resource consuming for the state. Examination of changes since 1995 shows that while the most visible subsidies have received nearly all the attention, large invisible subsidies remain at the heart of Morocco's housing policy. For example, the decision to phase out interest rate subsidies was accompanied by the creation of the Fund for Social Housing, whose cost is twice as large, and whose characteristics may lead to economic inefficiencies and to greater opacity for Moroccan taxpayers.

Like all exercises of synthesis, this one potentially faces the criticism of overlooking prominent aspects of the housing subsidy systems. It is worth emphasizing that our battery of criteria is just a practical tool for summarizing various aspects of particular programs and comparing them. Assessing the various aspects of a particular program, which is the basic input needed to apply our methodology, still remains a complicated exercise to be undertaken by specialists. We nonetheless believe that our framework can be used in useful ways, the first of which is to provide a simple pedagogical tool allowing more comparable studies on different countries or programs. For policymakers or governments seeking ways to improve their housing policies, the aggregation technique provided in this paper provides a synthetic way to assess the basic features of the housing subsidy system as a whole, but also a quick way to compare the system to those of neighbors or similar countries. The framework may also help go beyond the usual "best -worst practice" presentation. A particular program may be ranked high along some criteria, and not so well along others. Even programs widely recognized as "best practices" could be enhanced in some dimension. Practitioners may then want to address other comparable programs that fare better in that particular dimension.

Last but not least, we believe that the very nature of the evaluation exercise forces policymakers and experts to consider explicitly how and why they believe a program performs against a specific standard. The aggregation exercise in turn forces one to look at all kinds of subsidies, visible and less visible. As emphasized above, very large implicit subsidies often receive far less attention than they would deserve, simply because their visibility is low. In that case, focusing on more visible but less important types of subsidies can lead to inefficient use of money and loss of credibility by governments trying to reform the housing subsidy system.

References

Arnott, Richard J., J.G. McKinnon (1977), Measuring the cost of height restrictions with a general equilibrium model, *Regional Science and Urban Economics*, 7, 359-375.

Atkinson, A., Stiglitz, J., 1976. The design of the tax structure: direct versus indirect taxation. *Journal of Public Economics* 6, 55–75.

Bertaud, Alain, Jan Brueckner (2003), Analyzing Building-Height restrictions : Predicted Impacts and Welfare Costs, mimeo., The World Bank.

Basu, Kaushik, Patrick Emerson (2000), "The Economics of Tenancy Rent Control" (with Patrick Emerson), Economic Journal, October 2000.

Basu, Kaushik, Patrick Emerson (2003), "Efficiency Pricing, Rent Control and Monopolistic Landlords", Economica,.

Bertaud, Alain, Jan Brueckner (2003), Analyzing Building-Height restrictions : Predicted Impacts and Welfare Costs, *mimeo.*, The World Bank.

Browning, E.K., J.M. Browning (1983), *Public Finance and the Price System*, second edition, MacMillan Publising Co., New York.

Brueckner, Jan (1996), Welfare gains from removing Land-Use Distorsions : An Analysis of Urban Change in post-apartheid South Africa, *Journal of Regional Science* 36, 91-109.

Buckley, R. F. and S. K. Mayo, "Housing Policy in Developing Countries: Evaluating the Macroeconomic Impacts", *Review of Regional and Urban Development Studies,* 1(2), 1989.

Buckley, Robert, Jerry Kalarickal (2004), Improving Low Income Housing Programs : A Method to Monitor and Reform Indian Housing Subsidy Programs*, mimeo.*, The World Bank.

Coady, David P., and Rebecca L. Harris (2004), Evaluating Transfer Programmes within General Equilibrium Framework", The Economic Journal, 114 (October), 778-799.

Conway, F., M. Michelsons, M. Valera, and J. E. Torres Ramirez (1996), *A Review of Demand-Side Housing Subsidy Programs: The Case of Latin America*, Washington, D.C., The Urban Institute April 1996.

Crews Cutts, Amy, Edgar O. Olsen (2002), Are Section 8 housing subsidies too high? , *Journal of Housing Economics*, Volume 11, Issue 3, September 2002, Pages 214-243

Cronin, F. J., The Efficiency of Demand-Oriented Housing Programs: Generalizing from Experimental Findings, *Journal of Human Resources*, 18(1), 1983, pp. 100-25.

Currie, J., A. Yelowitz (1998), Public Housing and Labor Supply, *JCPR Working Paper*, Northwestern University.

Debreu, G (1951), "The coefficient of Resource utilization", *Econometrica*, 19, 273-292

Debreu, G (1952), "A classical tax-subsidy problem", *Econometrica*, 20, 14-22

Devereux, Michael P, Gauthier Lanot (2003), Measuring tax incidence: an application to mortgage provision in the UK , *Journal of Public Economics*, Volume 87, Issues 7-8, August 2003, 1747-1778

Deng, Yongheng, John M. Quigley, Robert Van Order and Freddie Mac (1996), Mortgage default and low downpayment loans: The costs of public subsidy, *Regional Science and Urban Economics*, 26(3-4), June 1996, 263-285.

Dietz, Robert D., Donald R. Haurin (2003), The social and private micro-level consequences of homeownership, *Journal of Urban Economics*, 54, 401-450.

Duebel, Achim, "Separating Homeownership subsidies form Finance : Traditional Mortgage Market Policies, Recent Reform Experiences and Lessons for Subsidy Reforms", *Land and Real Estate Initiative background paper*, 14, The World Bank, Washington DC.

EDESHA-URBAPLAN-IHEM (1998), Etude sur l'aménagement des terrains résidentiels pour le développement de la promotion immobilière : mission 2, le régime de l'offre de terrains résidentiels, Propositions et recommandations, Rabat, mars 1997.

Fallis, G., Smith, L.B., 1984. Uncontrolled Prices in a Controlled Market: the Case of Rent Controls, *American Economic Review* 74 (1), 193–200.

Fallis, G., Smith, L.B., 1985. Price Effects of Rent Control on Controlled and Uncontrolled Rental Housing in Toronto: A Hedonic Index Approach, *Canadian Journal of Economics* 18 (3), 652–659.

Fischer, Will (2000), Labor Supply Effects of Federal Rental Subsidies , *Journal of Housing Economics*, 9(3), Pages 150-174, September 2000.

Friedman, J., E. Jimenez, and S. K. Mayo, The Demand for Secure Tenure in Developing Countries, *Journal of Urban Economics* 29, 1988, pp.185-98.

Fu, Yuming, C. Tsuriel Somerville (2001), Site density restrictions : Measurement and Empirical Analysis, *Journal of Urban Economics*, 49, 404-423.

Gilbert, Alan (2004), Helping the poor through housing subsidies: lessons from Chile, Colombia and South Africa , *Habitat International*, Volume 28, Issue 1, March 2004, 13-40

Gyourko, J., Linneman, P., 1989. Equity and Efficiency Aspects of Rent Control: An Empirical Study of New York city, *Journal of Urban Economics*, 26.

Heckman, J., H. Ichimura, P. Todd (1997a), "Matching as an Econometric Evaluation Estimator", *Review of Economic Studies*, 65(2), 261-294.

Heckman, J., H. Ichimura, P. Todd (1997b), ''Matching as an Econometric Evaluation Estimator: Evidence from Evaluating a Job Training Program'', *Review of Economic Studies*, Vol. 64(4), October, 1997.

Heffley, Dennis (1998), Landlords, tenants and the public sector in a spatial equilibrium model of rent control , *Regional Science and Urban Economics*, Volume 28, Issue 6, 1 November 1998, Pages 745-772

Hines, J. R., 1999, ''Three sides of the Harberger Triangle'' *Journal of Economic Perspectives*, 13(2), 167-188.

Hoek-Smit, Marja C. and D. Diamond. 2003. "The design and Implementation of Subsidies for Housing Finance." Paper prepared for the World Bank Seminar on Housing Finance, March 10-13, 2003. Available at http://www.worldbank.org/wbi/banking/capmarkets/housing

Jappelli, T., L. Pistaferri (2002), "tax incentives for Households Saving and Borrowing", *CEPR Discussion Paper*, 3881.

Kraft, J. E.Olsen, The Distribution of Benefits from Public Housing. In F. Thomas Juster (ed.), The Distribution of Economic Well-Being, New York, *National Bureau of Economic Research*, 1977.

Koning, Ruud H., Geert Ridder, Rent assistance and housing demand , *Journal of Public Economics*, Volume 66, Issue 1, October 1997, Pages 1-31.

Laferrère, Anne, David Le Blanc (2004), How do housing allowances affect rents? An empirical analysis of the French case , *Journal of Housing Economics*, Volume 13, Issue 1, , 36-67 March 2004.

Laroque, G., B. Salanié (1999), "Labor Market Institutions and Employment in France", *Journal of Applied Econometrics* (2002), 17, 25-48.

Lea, M., B. Renaud (1995), "Contractual Savings for Housing : How Suitable are They for Transition Economies ?", *Policy Research Working Paper*, 1516, The World Bank, Washington, D.C.

Le Blanc, D., A. Laferrère (2001), "The effect of Public Social Housing on Households' Consumption in France, " *Journal of Housing Economics*, 10, 429-4555

Malpezzi, Stephen, Kerry Vandell (2002), Does the low-income housing tax credit increase the supply of housing? *Journal of Housing Economics*, 11(4), December 2002, 360-380.

Mayo, S. K.(1986), Sources of Inefficiency in Subsidized Housing Programs : A Comparison of US and German experience, *Journal of Urban Economics*, Vol.20, 1986, pp.229-49.

Mayo, S. K. and D. Gross, A, Sites and Services -- and Subsidies: the Economics of Low-Cost Housing in Developing Countries, *World Bank Economic Review*, Vol.1, No.2, 1987, pp. 301-335.

Merrill, Sally, Patric Hendershott, Stephen Mayo, Michael Lea, and Douglas Diamond (1999), Housing and the Macroeconomy: Tax Reform and the Alternative Subsidy Policies for Housing", The Urban Institute Consortium for USAID/Warsaw, April 1999.

Murray, M.P., 1999. "Subsidized and unsubsidized housing stocks 1935 to 1987: crowding out and cointegration". The Journal of Real Estate Finance and Economics 18 (1), 107–124.

Musgrave, R.A., *The theory of Public Finance*, New York, McGraw-Hill, 1959.

Olsen, E. and D.M Barton, The Benefits and Costs of Public Housing in New York City, *Journal of Public Economics,* Vol. 20, 1983, pp.299-332.

Olsen. Edgar, 2001, Housing Programs for Low-Income Households, *NBER working paper* 8208.

Payne, Geoffrey, Ed. 2002. *Land rights and innovation: improving tenure security for the urban poor*, London, ITDG.

PLURAM-ALGOE-PROMOCONSULT (1997), *Etude relative aux aspects financiers et fiscaux du financement du logement au Maroc*, Révision du rapport de la phase Stratégie et rapport provisoire de la phase Propositions, Casablanca, December 1997.

PLURAM-ALGOE-PROMOCONSULT (1996), *Etude relative aux aspects financiers et fiscaux du financement du logement au Maroc*, Phase Diagnostic, composante 3 : Imposition de la Propriété, Casablanca, March 1996.

Quigley, J. M., Nonlinear Budget Constraints and Consumer Demand: An Application to Public Programs for Residential Housing, *Journal of Urban Economics,*Vol.12, 1982, pp.177-201.

Rosen, H.S., 1985, Housing Subsidies. Effects on Housing Decisions, Efficiency and Equity. In: Auerbach, A.J., Feldstein, M (Eds.), *Handbook of Public Economics*, vol. 1, pp. 375–420 (Chapter 7).

SCET-URBA Systems (2003), *Etude sur le financement des collectivités territoriales marocaines et la réforme de la fiscalité locale*, Rapport réalisé pour la Banque Mondiale, December 2003.

Sewell, Mintz and Tsiopoulos (1995), "Tax effects on investment in Morocco", *World Bank Discussion Paper Series*, Middle East and North Africa, 1995.

Sinai, Todd, Joel Waldfogel (2002), Do Low-Income Housing Subsidies Increase Housing Consumption ?, *NBER Working Paper 8709*, http://www.nber.org/papers/w8709, January 2002

Skinner, Jonathan (1996), The dynamic efficiency cost of not taxing housing , *Journal of Public Economics*, Volume 59, Issue 3, March 1996, Pages 397-417

Struyk, R. , editor, *Homeownership and Housing Finance in the Former Soviet Bloc. Costly Populism*, The Urban Institute, 2000.

Stiglitz, Joseph (1988), *Economics of the Public Sector*, Second edition, New York: W.W. Norton & Co.

Susin, Scott (2002) Rent vouchers and the price of low-income housing , *Journal of Public Economics*, Volume 83, Issue 1, January 2002, Pages 109-152

World Bank (1993), Housing: Enabling Markets to Work, *Housing Policy Paper*, Washington, D.C., World Bank, 1993.

World Bank (1995), Kingdom of Morocco, Housing Sector Strategy, Report # 13930 –MOR, the World Bank, Washington, D.C., March 1995.

Appendix : Table 1

Table 1 : Proposed criteria for assessing housing subsidies programs

Criterion	*Questions to be answered*	*Measurement indicators*
Administrative simplicity	- Is the subsidy easy and relatively inexpensive to manage ? - Are users aware of the existence and modalities of the program ? - does an "average" household/ firm need help (social worker, administration) to register in the program?	- Direct and indirect administrative cost / subsidy amount - Qualitative or Survey assessment
Transparency	- Are there well-defined eligibility criteria to the subsidy ? - Are responsibilities in subsidy attribution clearly defined ? - Is subsidy attribution managed by an independent body ?	- existence of eligibility and participation criteria, and nature (law, decree, regulation, rule internal to the implementation agency, etc.) - proportion of participants chosen on open and known rules (vs. quotas of administration, local authorities, etc.) - knowledge of those in the population - *ad hoc* assessment of transparency
Incentives / Political accountability-responsibility / Popularity	What are the incentives of stakeholders (State, local governments, households, firms) to use but not abuse the subsidy ? - Are individuals / institutions responsible for choosing participants in the program accountable ? - Are individuals or institutions in charge of the implementation of the program given adequate financial and technical means ? - Do institutions in charge of the program have incentives to keep the program under control (financial mass, cost recovery,...)? - Does the program receive a large support ? Who supports it and who 's against it ?	*Ad hoc* qualitative analysis of incentives.

Table 1 (continued) : Proposed criteria for assessing housing subsidies programs

Criterion	*Questions to be answered*	*Measurement indicators (examples=* - this is not clear)*
Targeting / Vertical equity (redistribution)	- What is the distribution of transfers (explicit or implicit) implied by the subsidy ? - Who are beneficiaries of the subsidy in theory ? - Are the most needy covered by the subsidy ?	- Estimation of distribution of transfers (explicit or implicit) implied by the subsidy. Depending on the case : - Estimation from tax files - Econometric calculation from survey data - Use of administrative files on beneficiaries - comparison of official targets and effective target possible with type of subsidy and implementation chosen.
Coverage/horizontal equity	- What share of the targeted population is covered by the program ? - Does the subsidy introduce different treatments for different kinds of households / firms in the target population ?	- share of the targeted population covered by the program. - subsidy reach in different groups of households / firms within target group.
Efficiency	- What is the social loss of resources implied by the subsidy ? - Could the same resources be used more efficiently ? - Which economic margins are affected by the subsidy?	Depending on the case considered: - partial equilibrium calculation - integration of subsidies in complete models of the tax and benefits system *Ad hoc* qualitative assessment *Ad hoc* approach, e.g. : - calculation of multiplier effect of public spending on the program, - calculation of effective tax rates on investment in different sectors* - econometric calculation of crowding out effects*

Table 1 (continued) : Proposed criteria for assessing housing subsidies programs

Criterion	*Questions to be answered*	*Measurement indicators (examples=*)*
Visibility	- What is the degree of political visibility of the subsidy ? By order of decreasing visibility : subsidy on budget, fiscal subsidy, implicit subsidy - Are citizens / taxpayers aware of the true cost of the subsidy?	- Type of subsidy : cash / kind subsidy - proportion of total subsidy accounted for in State/ Local Government Budgets - evaluation of subsidy program at government level (local – regional – national)
Sustainability	- Is the subsidy program sustainable in the long run ? - Has today's program a long-run implication of State budget equilibrium ?	- Simulation of medium-run or long-run costs / expenditures on the program - impact of today's expenditures on future government liabilities
Flexibility	- Can the program be modified or stopped without major political unrest ? - Can the program be modified or stopped without major disruptive effects on the economy ?	- *Ad hoc* qualitative analysis. - evaluation of dependence of housing supply and demand on the subsidy*