RENT CONTROL IN DEVELOPING COUNTRIES: A FRAMEWORK FOR ANALYSIS

by

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and

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The views presented herein are those of the author(s), and they should not be interpreted as reflecting those of the World Bank or of the Rand Corporation.
Stephen Malpezzi is an economist in the Water Supply and Urban Development Department of the World Bank, and director of a Bank research project on "Rent Controls in Developing Countries" (RPO 674-01). He has recently completed a study of the costs and benefits of rent control in Cairo, Egypt, under a Bank research project on "Housing Demand and Finance in Developing Countries" (RPO 672-46). C. Peter Rydell, a consultant to the Water Supply and Urban Development Department, is a Senior Social Scientist at the Rand Corporation. He has participated in a study of rent control in New York City, and directed a recent study of Los Angeles' rent control.

This paper is an edited version of a proposal for the new rent control research project. Because it is a proposal, there are specific recommendations about timing, technique, and choice of case studies which will be revised as the project is executed. The basic framework for analysis will remain unaffected. Opinions expressed herein are solely those of the authors, and should not be interpreted as those of any organization. The authors have benefited from comments by too many colleagues to list in full, but especially Stephen Mayo and Michael Murray.

A companion paper gives more details on the design of the case studies:

ABSTRACT

Economists commonly model rent control as a simple effective price control or tariff. However, remarkably little empirical research has been done on the magnitudes involved. Even less has been done on the analysis of real world rent control regimes, which often diverge from the simple textbook model. Little policy advice is available from the simple price control model other than that immediate blanket decontrol will restore equilibrium after some unknown lag.

Preliminary research under RPO 672-46, "Housing Demand and Finance in Developing Countries", has demonstrated (1) that simple analysis of rent control as an effective tariff does not predict the consequences of all laws in all market conditions, and hence is not sufficient as a guide to policy, and (2) alternative methods of decontrol exist, and vary in their effects depending on type of law, enforcement, market conditions, and how landlords and tenants adjusted to the prior rent control regime.

A new research project is therefore now underway to study "Rent Controls in Developing Countries" (RPO 674-01). Generally, the purpose of this research is to extend that work and increase understanding of one of the most widespread and potentially potent housing market policies extant. Specifically, the proposed research project will have the following objectives:

(1) Survey rent control laws across countries, with special emphasis on developing countries.

(2) Produce several case studies of particular controlled markets.

(3) Integrate the results from the case studies in an internally consistent model of market behavior.

This project will lead to recommendations regarding alternative methods of decontrol for different rent control regimes, under different market conditions.
TABLE OF CONTENTS

INTRODUCTION AND SUMMARY. ................................................................. 1

I. OBJECTIVES AND STRATEGY ..................................................................... 5
   Introduction ........................................................................................... 5
   General Framework and Research Strategy Overview ............................ 7
   General Consequences of Rent Control .................................................. 9
   Rent Reduction ...................................................................................... 10
   Housing Deterioration .......................................................................... 11
   Rental Housing Losses: Demolitions, Conversions, and Foregone Starts .. 12
   Decomposing Changes in Rent into Price and Quantity Changes ............ 12
   Present Value of Tenant and Landlord Gains and Losses ...................... 13
   Effects of Rent Control on Household Location, Mobility, and Tenure Choice ...... 14
   Effects of Rent Control on Property Taxes ........................................... 14
   Alternative Adjustment Mechanisms ...................................................... 15
      Indexing: Keeping Real Rents Constant .............................................. 15
      Reassessment for New Tenants ......................................................... 16
      Differential Pricing of New and Existing Units ................................. 16
      Differential Pricing for Upgraded Units .............................................. 16
      Side Payments .................................................................................... 17
   Policy Issues .......................................................................................... 19

II. PREVIOUS RESEARCH ON RENT CONTROL ........................................... 21
   Analysis of Rent Control Viewed as a Tax on Housing Capital ................. 21
   Dynamic Models of the Effect of Rent Controls on Maintenance ............... 24
   Estimates of Costs and Benefits, and their Incidence ............................. 25
   Rent Control and Mobility ..................................................................... 27
   Studies which Analyze Alternative Adjustment Mechanisms and Methods of Decontrol ............................... 28
   The Relationship between Controlled and Uncontrolled Market ............... 32
   Summary of Rent Control Research Under RPO 672-46 .......................... 32
   The Need for Additional Research ....................................................... 34
III. RESEARCH DESIGN

Overview .................................................................................. 37

Task 1: Survey of Rent Control Laws as Written and as Enforced ........................................... 37
  Key Features of Rent Control Laws ........................................................................ 37
  Rent Control and Property Taxes ........................................................................ 40
  Survey Execution .................................................................................................. 40

Task 2: Case Studies of Selected Markets ..................................................................... 41
  Case Study Design ............................................................................................... 41
  Choice of Case Study Markets .......................................................................... 42
  Data Collection ..................................................................................................... 45
  Outputs .................................................................................................................. 46

Task 3: Integrating Case Study Results in A Consistent Housing Market Model .......... 46
  Introduction ......................................................................................................... 46
  Modeling Strategy ................................................................................................. 48
  Overview of the Model ......................................................................................... 48

Task 4: Dissemination of Research Results .................................................................. 55

IV. ORGANIZATION ................................................................................. 59

General Principles ................................................................................................. 59
  Links to Other Bank-Funded Research ................................................................ 60
  The Work Program, and Proposed Timing .......................................................... 60

ANNEX: DRAFT RENT CONTROL CHECKLIST ........................................ 63

REFERENCES ......................................................................................... 71
<table>
<thead>
<tr>
<th></th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Key Questions about Rent Control and How to Answer Them</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>Welfare Measures and Their Components: Cairo Renters</td>
<td>18</td>
</tr>
<tr>
<td>3</td>
<td>Comparison of Rent Control Laws for Several Markets</td>
<td>39</td>
</tr>
<tr>
<td>4</td>
<td>List of Case Study Markets</td>
<td>43</td>
</tr>
<tr>
<td>5</td>
<td>Interaction Between Market Conditions and Rent Control, (Phase One) Case Study Market</td>
<td>44</td>
</tr>
<tr>
<td>6</td>
<td>Key Model Inputs from Case Studies</td>
<td>56</td>
</tr>
<tr>
<td>7</td>
<td>Project Outputs</td>
<td>57</td>
</tr>
<tr>
<td>8</td>
<td>Work Schedule</td>
<td>61</td>
</tr>
<tr>
<td>Figure</td>
<td>Description</td>
<td>Page</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>1.</td>
<td>Rent Control as an Effective Price Control</td>
<td>23</td>
</tr>
<tr>
<td>2.</td>
<td>Rent Control as Expenditure Control</td>
<td>23</td>
</tr>
<tr>
<td>3.</td>
<td>Effects of Alternative Rent Control Laws, From Rydell et al.</td>
<td>31</td>
</tr>
<tr>
<td>4.</td>
<td>Overall Structure of the Model</td>
<td>50</td>
</tr>
<tr>
<td>5.</td>
<td>Effect on Housing Services</td>
<td>51</td>
</tr>
<tr>
<td>6.</td>
<td>Effect on Landlord Profits</td>
<td>52</td>
</tr>
<tr>
<td>7.</td>
<td>Effect on Government Objectives</td>
<td>53</td>
</tr>
<tr>
<td>8.</td>
<td>Effect on Tenant Benefits</td>
<td>54</td>
</tr>
</tbody>
</table>
INTRODUCTION AND SUMMARY

Government policies regarding housing and housing finance obviously have extensive impacts on the availability of affordable shelter in developing countries, but they also affect the efficiency and equity of resource use and public expenditures generally, because shelter is such a large sector of the economy. Housing investment ranges from two to eight percent of GNP in developing countries; it can be a third of total investment; and the relative importance of the sector increases systematically as countries develop. Among the housing policies that have the most substantial impacts and are the most widespread are regulations that control the rents that landlords can charge.

Rent control is often treated as the most important single shelter policy issue by project officers and Bank management. Rent control has been a key negotiating point in several Bank urban projects (in India, Portugal, and Tunisia for example), and promises to resurface in future projects, especially as the Bank pursues sector based lending strategies. Despite the importance of the issue, little work has been done to examine actual rent control laws, their effects, and alternative methods of decontrol. In 1952 Leo Grebler could write:

It is perfectly astounding to find that the quantity and quality of analytical materials on rent control are wholly incommensurate with the social and economic importance of the problem.

Over 30 years later, Joseph Gyourko and Peter Linneman found the situation little improved:

Considering the large number of cities that have investigated or adopted rent controls, there is little empirical research documenting the effects of rent controls.

They go on to point out that the few studies which have been done are studies of New York, Los Angeles, and a handful of other developed country cities. Almost no work has been done on rent control in developing countries.

The simple analysis of rent control as an effective price control or a tariff has a straightforward conclusion. This model suggests that rent control reduces the quantity and quality of housing available, and has other undesirable consequences as well. For practical policy applications, however, more specific information is needed -- about the magnitudes of the costs and benefits of alternative policies, their distribution, and about various methods of decontrol. On these points, little is known yet. Past research has demonstrated that the simple textbook model of rent control as an effective tariff does not predict the consequences of particular rent control regimes adequately enough for policy use; and past studies offer little guidance at all on decontrol options, the appropriate phasing of decontrol measures, and their likely consequences. Examples of the kinds of questions which need to be answered for policy work include the following:
How extensive are rent controls in developing countries? What are the major types of controls? What are the stated policy objectives? How are rent controls enforced in various places?

What are the magnitudes of the effects of rent controls in developing countries? Are the effects of different rent control regimes qualitatively and quantitatively similar? How do these magnitudes compare to other distortions, e.g., lack of housing finance, poorly functioning land markets, etc.? How do landlords and tenants adjust to the presence of such controls? Who benefits and who loses from rent controls; what are the distributional effects?

How can rent control be modified to have more appropriate distributional impacts while producing fewer economically inefficient market distortions? When should rent controls be abolished or retained? What alternative policies exist to achieve comparable goals; what practical problems in implementing alternative policies and exist?

This research will contribute toward filling these important gaps in current knowledge about an area of housing policy that potentially has significant implications for the pace of development. Specifically, the proposed research project will have the following objectives:

1. Survey rent control laws across countries, with special emphasis on developing countries. The survey will focus on such details as which units are controlled, how controlled units are appraised, how rents are adjusted over time, and what related laws exist (e.g., occupancy laws, land price controls, etc.). The survey will distinguish between laws as written and as enforced.

2. Produce several case studies of particular controlled markets. The case studies will provide empirical results which will shed light on the effects of different rent control regimes on the supply of housing, and costs and benefits to tenants. Reports prepared for two markets (Cairo, Egypt and Bangalore, India) under RPO 672-46, Housing Demand and Finance in Developing Countries, will be used; since that research has highlighted the diversity of rent control regimes, additional case studies will be prepared.

3. Integrate the results from the case studies in an internally consistent model of market behavior. Internally consistent means that the costs and benefits of rent control to different agents (landlords, tenants, governments) from different sources (changes in prices, changes in consumption, changes in mobility) are all included. Such a framework is needed to correctly analyze the cost/benefit and distributional implications of rent control. It will be used to study alternative methods of decontrol for different stylized rent control regimes, under different market conditions.
General Framework and Research Strategy

The research project can be conveniently divided into three analytical tasks which approximately correspond to each of the objectives just enumerated. Conceptually, there is a natural ordering of the tasks. The first task is to survey rent control regimes in many markets, in order to learn more about the scope and details of rent control laws as enforced. Little is known about the extent of rent control generally, and even less about the prevalence of specific provisions of rent control laws, how they are enforced, and what market conditions are like in controlled markets. The first task is designed to fill this gap.

The second task is to produce case studies of markets which represent a wide range of actual rent control regimes. Few econometric studies have been done of the costs and benefits of rent control laws, and only two in developing countries. Even less has been done on estimating supply side impacts, and the effects of rent control on public finance, household mobility, tenure choice, and the labor market. The second task aims to expand the available knowledge dramatically.

The third task is to integrate the costs and benefits to all agents (landlords, tenants, owner-occupants, governments), and consider the likely dynamic effects of changes in rent control. Research done to date has not integrated estimates of gains and losses from different impacts, or considered the interests of all agents in a consistent (i.e., accounting) framework. Also, the dynamics of rent control have been neglected. The case study results will be integrated in a simple but consistent model of market behaviour, which will be used to study costs and benefits of alternative methods of decontrol. This effort will draw on the first two tasks so that the essential features of rent control regimes as designed and enforced will be captured.

In practice, of course, all three tasks are interrelated. For example, the design of the case studies (Task 2) requires knowledge of the inputs required by the cost/benefit model (Task 3), to ensure that data collection is complete and efficient. The choice of case studies and stylized situations to study in Tasks 2 and 3 will be influenced by the broad survey of housing markets undertaken in Task 1. However, the case studies require the bulk of the project's resources.

Table 7 in the text, below, presents a proposed list of project outputs. Each of the three analytical tasks (survey, case studies, and integrated model) will produce written outputs which will stand on their own. In addition, a synthesis paper will be written which describes the results of the research in nontechnical terms, and which will present the key results in a manner accessible to project officers in the Bank and our client governments. The project final report will be an edited compilation of results from all three tasks, including the synthesis. The synthesis paper will also be used as background reading for a workshop on the results for Bank staff. The workshop will mark the beginning of an additional effort, to widely solicit the views of Bank staff and management, in light of the research findings, on what the Bank's and our client's position and strategy on rent control should be. Assisting our clients in developing practical strategies for effecting needed changes in the regulation of rental housing is the ultimate goal of this project.
The project will be undertaken in two phases. Phase One will consist of the broad survey of laws and market conditions, and five case studies. Phase Two will consist of additional case studies, if needed; the integrated model, which will be used to study alternative methods of decontrol; and synthesis of results.
I. OBJECTIVES AND STRATEGY

Introduction

The theoretical analysis of rent control rests on some principles which are quite elementary, indeed distressingly so. They are so obvious that one would feel the greatest reluctance to repeat them in a professional journal were it not that a great public policy has been erected upon either ignorance or a repudiation of them.¹

Economists as a group have no trouble reaching a consensus on the qualitative effects of rent control on housing markets. A recent study revealed that only two percent of economists surveyed disagreed with the proposition that "a ceiling on rents reduces the quantity and quality of housing available" (Kearl et al. 1979). This consensus rests on the analysis of rent control as a simple effective price control or tariff. However, remarkably little empirical research has been done on the magnitudes involved. Even less has been done on the analysis of real world rent control regimes, which often diverge from the simple textbook model. Little policy advice is available from the simple price control model other than that immediate blanket decontrol will restore equilibrium after some unknown lag.

Preliminary research under RPO 672-46, Housing Demand and Finance in Developing Countries, has demonstrated (1) that simple analysis of rent control as an effective tariff does not predict the consequences of all laws in all market conditions, and hence is not sufficient as a guide to policy, and (2) alternative methods of decontrol exist, and vary in their effects depending on type of law, enforcement, market conditions, and how landlords and tenants adjusted to the prior rent control regime.²

Generally, the purpose of this proposed research is to extend that work and increase understanding of one of the most widespread and potentially potent housing market policies extant, namely rent controls. Specifically, the proposed research project will have the following objectives:

1) Survey rent control laws across countries, with special emphasis on developing countries. The survey will focus on such details as which units are controlled, how controlled units are appraised, how rents are adjusted over time, and what related laws exist (e.g. occupancy laws, land price controls, etc.). The survey will distinguish between laws as written and as enforced.

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²/ Malpezzi (1986 a, b). This work under RPO 672-46 is discussed in more detail in the literature review (Chapter 2). Other links to the Housing Demand and Finance project are explained in Chapter 4.
(2) Produce several case studies of particular controlled markets. The case studies will provide empirical results which will shed light on the effects of different rent control regimes on the supply of housing, and costs and benefits to tenants. Reports prepared for two markets (Cairo, Egypt and Bangalore, India) under RPO 672-46, "Housing Demand and Finance in Developing Countries", will be used; since that research has highlighted the diversity of rent control regimes, additional case studies will be prepared.

(3) Integrate the results from the case studies in an internally consistent model of market behavior. Internally consistent means that the costs and benefits of rent control to different agents (landlords, tenants, governments) from different sources (changes in prices, changes in consumption, changes in mobility) are all included. Such a framework is needed to correctly analyze the cost/benefit and distributional implications of rent control. It will be used to study alternative methods of decontrol for different stylized rent control regimes, under different market conditions.

A recent U.N. study estimates that about 42 percent of the world's urban dwellers are renters. It is not yet known how many of those roughly 150 million households lived under rent control regimes, but preliminary research suggests the proportion is probably quite high; 30 percent is a conservative guess. The motivation for a research project on rent control is therefore clear and needs little elaboration. Rent control is very often treated as the most important single shelter policy issue by project officers and Bank management. Rent control has been a key negotiating point in several Bank urban projects (in India, Portugal, and Tunisia for example), and promises to resurface in future projects, especially as the Bank pursues sector based lending strategies. Despite the importance of the issue, little work has been done to examine actual rent control laws, their effects, and alternative methods of decontrol. The Bank's current policy advice is not well informed by the simple textbook models of rent control as a simple tariff; these models only predict the consequences of rent control for very specific rent control regimes and certain market conditions, and lead to little useful policy advice beyond "remove all controls immediately."

In some situations the use of such oversimple models can be counterproductive. The policy dialogue is better served if Bank policy advice is based on models which can be shown to predict the actual consequences of the regime in question. In some situations the textbook model predicts quite well, but in other cases it does not. For example, previous research on Cairo demonstrates that high vacancy rates and high rates of new construction can be found in a market which is (in a very particular sense) tightly controlled. Also, alternative methods of decontrol do exist, and vary in their effects depending on market conditions and the ways in which landlords and tenants adjusted to the previous rent control regime. Examples of the kind of questions which need to be answered for policy work include the following:

How extensive are rent controls in developing countries? What are the major types of controls? What are the stated policy objectives? How are rent controls enforced in various places?
What are the magnitudes of the effects of rent controls in developing countries? Are the effects of different rent control regimes qualitatively and quantitatively similar? How do these magnitudes compare to other distortions, e.g., lack of housing finance, poorly functioning land markets, etc.? How do landlords and tenants adjust to the presence of such controls? Who benefits and who loses from rent controls; what are the distributional effects?

How can rent control be modified to have more appropriate distributional impacts while producing fewer economically inefficient market distortions? When should rent controls be abolished or retained? What alternative policies exist to achieve comparable goals; what practical problems in implementing alternative policies and programs exist?

The proposed project will greatly increase understanding of the scope and effects of different types of rent control regimes, and of the effects of changes in those regimes.

The proposed research project is therefore consistent with the new research program objectives and priorities as enunciated in the Report on the World Bank Research Program. That report emphasized the need for "more studies of factual behavior patterns of individual agents and institutions," and for more "multicountry comparative studies of important policy related issues." Emphasizing the need for research that both supports Bank operations and keeps the Bank "in the forefront of thinking on the economics of developing countries," the report listed five broad research priorities (Part I, pp. 13-14). This project is most clearly related to the first two: (1) estimating the costs and benefits of government intervention, and (2) studying the interrelationships between institutions and incentives.

This project supports Bank operations, because rent control has become an important issue in the urban policy dialogue. For this reason, the Water Supply and Urban Development Department is planning to prepare a strategy paper on rent control in developing countries. This paper requires more specific information on the effects of different rent control regimes under different market conditions than currently exists. The research project is designed to provide that information.

General Framework and Research Strategy Overview

The research project can be conveniently divided into three analytical tasks which approximately correspond to each of the objectives just enumerated. Table 1 illustrates some of the important questions to be answered by each task. Conceptually, there is a natural ordering of the tasks. First, survey rent control regimes in many markets, in order to learn more about the scope and details of rent control laws as

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Table 1
Key Questions about Rent Control and How to Answer Them

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<tr>
<th>Task 1: Survey Task 2: Case Task 3: Integrated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rent Control Laws Studies of the Accounting Model</td>
</tr>
<tr>
<td>and Enforcement Costs and Benefits of Costs and Benefits</td>
</tr>
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<td>Practices in Rent Control to All Agents From</td>
</tr>
<tr>
<td>Many Markets All Sources</td>
</tr>
</tbody>
</table>

How widespread is rent control? What are the major types of controls, and how are they enforced?

What are the costs and benefits of rent control?

What are the effects on housing prices and consumption, mobility, landlord profits and investment? Distributional implications?

How do landlords and tenants adjust to rent controls, e.g., key money, other side payments, changes in maintenance and upgrading?

What are the indirect impacts of rent control on e.g., labor markets, tax revenue, tenure choice?

What is the net effect of rent control on each agent (landlord, tenant, owner-occupants, government)?

What are the dynamic responses of markets, and their implications for alternative methods of control?

**: Primary means of answering these questions.
*: Will also provide information on these topics.
enforced. Second, produce case studies of markets which represent a wide range of actual rent control regimes. Third, integrate the case study results in a simple but consistent model of market behaviour, and use it to study the costs and benefits of alternative methods of decontrol. This effort will draw on the first two tasks so that the essential features of rent control regimes as designed and enforced will be captured. In practice, of course, all three tasks are interrelated. For example, the design of the case studies (Task 2) requires knowledge of the inputs required by the cost/benefit model (Task 3), to ensure that data collection is complete and efficient. The choice of case studies and stylized situations to study in Tasks 2 and 3 will be influenced by the broad survey of housing markets undertaken in Task 1. Also, note that the three tasks do not require equal resources; about two thirds of the project's resources will be used for the case studies.

While the execution of the three analytical tasks is less neat in practice because of these interrelationships, outputs from each of the tasks will be designed to stand on their own. In particular, the case studies will be tailored to local conditions and data availability, while at the same time the necessity of providing consistent inputs to the modeling effort will impose a certain discipline to the case study design, and ensure comparability of results.

The fourth task is dissemination of the research results. This proposal will contain specific suggestions for dissemination activities to be funded now as part of the research project. We shall also propose, more generally, other types of research dissemination which may be carried out separately from the project itself.

General Consequences of Rent Control

To motivate this proposed analytical framework, it is important that we understand the three ways in which rent control affects housing markets.

Rent control limits the amount by which rents can increase. As a consequence, rents of controlled dwellings are less than they would be in the absence of rent control. Landlords can respond to these rent reductions in three ways. First, they can operate their properties the same as they would without controls. In that case, tenants will continue to receive the same "quantity of housing services" (a summary measure of shelter, amenities and convenience provided by a dwelling). Since they will pay less rent for the same quantity of housing services, the price of those services is reduced. Second, landlords can reduce maintenance to offset, at least in part, their revenue losses. As a result of the lowered maintenance, dwellings deteriorate, causing a drop in the quantity of housing services they provide. Finally, landlords can remove their dwellings from the rental market by abandoning them or converting them to other uses, such as owner occupancy, and over time, potential starts may be foregone. In fact, all three responses occur: some results in cuts in the quantity of housing services available in the rental housing market.
Consequently, we need a set of models which can estimate three primary impacts of rent control law:

- Rent reductions
- Housing deterioration caused by rent reductions
- Other rental housing losses (demolitions, conversions and foregone starts) caused by rent reductions

From these primary impacts a variety of secondary or derived effects can readily be studied. Examples of important derived effects are:

- Price and quantity changes derived from rent charges
- Present values of gains and losses to tenants and landlords
- Effects of rent control on household location, mobility, and tenure choice
- Effects of rent control on local public finance, mainly through property taxes
- Alternative adjustment mechanisms, e.g. key money

These are key results to be gleaned from the case studies, and once we have these estimates of the magnitudes involved under different rent control regimes and market conditions we can generalize the results in the modeling effort. Each primary and derived impact will be discussed briefly, in turn.

Rent Reduction

To assess the percentage rent reduction caused by rent control, we will first estimate what the rents would have been in the absence of rent control, and then compare those results with what the controlled rents actually are. Because the former (free market rents) are not directly observable in cities where controls are pervasive, indirect estimation methods must be used. The principal options for that purpose are: to rely on proxies for market rents where they have been collected through household surveys; to apply a hedonic index procedure; or to utilize the cross-country housing expenditure model of Malpezzi and Mayo (1985). These methods are described briefly in the section on case studies, below.

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Key money refers to lump-sum payments made to landlords when a new tenant moves in. In some uncontrolled markets such payments are customary and legal (e.g. Korea) but in rent controlled markets they are usually illegal.
It is widely known that most rent control laws often treat housing units differently when the tenants are new than when they have been there longer. What is not so widely known, however, is that the uncontrolled housing market also treats the two types of units differently: landlords set first rents higher than the market average, and raise later rents by less than the growth in average rent. That pattern of rent payment may not appear to have much effect on tenants, who on the average pay the same rent they would if landlords set first rents at the market average and afterwards raised them by the growth in average rent. However, individual tenants can be much affected.

In light of the above, projected average rent increases without rent control must be split between the two types of units; rents for units that keep the same tenant increase by less than rents for units that acquire a new tenant. For example, Rydell et al. (1981, p. 51) found that in Los Angeles during eight years of 10 percent average rent inflation, annual rent increases for units keeping the same tenant would be only 8.2 percent, while annual rent increases for units obtaining a new tenant would be 14.3 percent. The case studies will provide new evidence on the extent of this differential treatment of new and continuing tenants in other markets.

This rent-setting behavior in uncontrolled markets has two important implications for assessing the impact of rent control. First a limit on rent increases for units that keep the same tenant during a year can be less than the average growth in uncontrolled market rate and still not cause rent reductions overall. Second, since landlords are accustomed to raising rents above average market rents upon a vacancy, they will continue to do so under a rent control law that has a vacancy decontrol provision. However, under rent control, landlords will set first rents even farther above the market average to compensate for the smaller subsequent rent increases allowed by control (we assume that tenants are willing to pay somewhat higher first rents because they know the subsequent annual increase will be low).

Similar examples can be worked through for other types of rent control regimes. For example, the use of key money to clear markets "on average" has similar, strong, distributional implications.

**Housing Deterioration**

Rent control offers landlords an incentive to allow their properties to deteriorate. When the rent reduction caused by rent control is 10 percent, landlords can charge the market price for only 90 percent of the housing services they produce. In the long run, landlords will allow the portion of their output that yields no revenue to disappear through deterioration.

However, knowing that in the long run landlords will allow their properties to deteriorate in proportion to the size of the rent reduction tells us little about deterioration in the short or intermediate run. Also, incentives can be created for tenants to invest in or maintain units if an increase in occupancy rights (tenure security) associated with rent
control implies that tenants can now capture the gains from such expenditures. The existence and size of this effect will vary with type of law, market conditions, and with landlord and tenant characteristics.

The question is not only whether rent control induces deterioration or by how much, but rather how rapidly it does so. Rydell et al. have provided one estimate of a bound on such deterioration. Comparable data on variation in depreciation rates in 59 U.S. cities (Malpezzi et al. 1985) will enable estimation of the differential effects of different laws, albeit in a developed country. Hedonic indexes from the case studies will provide additional information from developing countries.

Rental Housing Losses: Demolitions, Conversions, and Foregone Starts

Regardless of the cause—declining demand or rent control—rent reductions motivate landlords to consider alternate uses for their property. Some remove the property from the housing stock (by either demolishing it or converting it to nonresidential use); others convert their rental units to owner-occupancy units. Only a small fraction, however, make such changes in any one year, even in the face of large rent reductions. Probably more serious, especially for developing countries, are future starts foregone. For all three components of inventory change, as in the case of deterioration, the question of rental housing losses caused by rent control becomes a question of the pace at which change occurs.

Time series data from the case study markets will be used to relate variation in removal and tenure-conversion rates to variation in revenue caused by different housing market conditions. Applying the results of that analysis to the revenue losses caused by rent control we previously estimated gives the estimates of losses in the rent-controlled housing supply from removals, conversions, and foregone starts.

Decomposing Changes in Rents into Price and Quantity Changes

If landlords undermaintain rent-controlled units, the resulting housing deterioration offsets, in part or in toto, the tenant's seeming rent bargain. We therefore require a measure of how much of a bargain rent control actually creates for a tenant; that is, we must measure how much rent control lowers the price of rental housing services, and how much the quantity changes. The notions of the quantity of housing services, and its corresponding price, are developed elsewhere (Muth, 1969).

The method of hedonic equations is one way expenditures on housing can be decomposed into measurable prices and quantities so that rents for different dwellings or for identical dwellings in different places can be predicted. A hedonic equation is a regression of expenditures (rents or values) on housing characteristics and is explained in detail in Malpezzi et al. (1980). Briefly, the independent variables represent the individual characteristics of the dwelling, and the
regression coefficients are estimates of the implicit prices of these characteristics. The results provide us with estimated prices for housing characteristics, and we can then compare two dwellings by using these prices as weights. For example, the estimated price for a variable measuring number of rooms indicates the change in value or rent associated with the addition or deletion of one room. It tells us in a dollar and cents way how much "more house" is provided by a dwelling with an extra room.

Ordinarily we would prefer to estimate such a regression separately in each market, where prices and quantities ideally clear. For many purposes it will be useful to define submarkets by tenure and degree of control. The definition of markets will be addressed in some detail in the research project.

Once we have estimated the implicit prices of measurable housing characteristics in each submarket, we can select a standard set of characteristics, or bundle, and price a dwelling meeting these specifications in each submarket. In this manner we can construct price indices for housing of constant quality across submarkets. In a similar fashion we can use the results from a particular submarket's regression to estimate how prices of identical dwellings vary with location within a single submarket (e.g., with distance from the city center), and to decompose the differences in rent or house values into price and quantity differences.

A related method of estimating the rent reduction due to controls is to rely on direct proxies for market rents which can be collected for controlled units in some markets. For example, in Cairo, Egypt, information was collected on the rents units would command in the furnished, uncontrolled market (Malpezzi, 1984a). Such proxies must be used with caution, however. The presence of a large controlled market can radically affect the price paid in the uncontrolled market (see Fallis and Smith, 1984). In the Egyptian case, the market proxies were found to be strongly correlated with dwelling characteristics and other expected correlates, but they were found to be much higher across the board than the long-run equilibrium market rents predicted by a cross-country model of housing demand (Malpezzi and Mayo 1985, Ch. 3). The proxies were adjusted downward accordingly, and then decomposed into prices and quantities using the method of hedonic indexes, as above.

Present Value of Tenant and Landlord Gains and Losses

Tenant gains from rent control are derived from the price reductions (rent reductions net of deterioration) less the value of any distortion in tenant behavior (e.g., because households are unlikely to be able to consume the quantity of housing services they would like to consume at controlled prices). Landlord losses are the revenue losses from rent reductions and stock removal plus rent control fees paid by landlords less savings from reduced maintenance expenditures. These gains and losses can be straightforwardly estimated in consumer's and producer's surplus models. Examples of such estimates include Olsen (1973), Malpezzi (1984a), and Linneman (forthcoming).
The present value of landlord losses will, in general, be greater than the present value of tenant gains. This "transfer inefficiency" of rent control has two causes. First, the administrative burden of rent control is commonly borne by landlords. Second, the losses of housing benefits to tenants from deterioration can exceed the savings to landlords from undermaintenance.

**Effects of Rent Control on Household Location, Mobility, and Tenure Choice**

The first order welfare change tenants experience under rent control stems from disequilibrium in the consumption of housing services. The price per unit of housing services may be lowered in the short run, but the consumption of housing is constrained: households cannot, in general, consume as much housing as they desire at the prevailing price. Changes in consumer's surplus (and the related changes in producer's surplus to landlords) have been the focus of most cost-benefit studies to date. However, there are several second order effects which could be quite important. Household mobility can be sharply reduced by rent control, especially if there are accompanying laws restricting the ability of landlords to evict and choose tenants. For example, the median length of tenure for renters in the Cairo market is 13 years. This compares to medians of 1 to 3 years in uncontrolled markets in the U.S. Restricted mobility can have serious implications for the labor market, transportation, fuel consumption, etc.

The ability of tenants to choose the form of tenure they desire can be impaired by rent control. Not all households are better off as homeowners; if rent control shrinks the rental sector, households may be forced to choose a form of tenure inappropriate to their current economic circumstances.

**Effects of Rent Control on Property Taxes**

The effects of rent control on property taxes can be studied for two cases: when controlled rents are the basis for assessments, and when market values are the basis for assessments.

The first case is the more extreme. India is an oft cited example, where even units in the uncontrolled submarket, including owner-occupied units, are assessed at the controlled rents. Once we are armed with reductions in rents, calculation of rough estimates of the losses are straightforward. Once the rent reduction is further decomposed into price and quantity changes, and information is collected about reassessment practices, more refined estimates of the effects of changes in the rent control law on property tax collections can proceed (see Rydell and Murray).

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In the second case rent control also affects tax revenues, because market values are related to the present value of rents. Under some conditions rent control will, for example, depress values of controlled units but increase values of uncontrolled units (Fallis and Smith 1984). Sorting out the net effect on tax revenues correctly requires taking this effect on related markets into account.

In both cases key administrative features, mainly the rate of reassessment and other assessment practices, are keys to predicting actual effects. Both the survey and the case studies will collect information on these practices.

Alternative Adjustment Mechanisms

There are at least seven alternative adjustment mechanisms which can equilibrate a notionally controlled market. The maintained hypothesis is that markets must adjust in some fashion in a long run, given alternative opportunities for landlords and a housing stock of limited durability: Four of the adjustments are embodied in rent control laws: (1) indexing (keeping real rents constant), (2) reassessment for new tenants, (3) differential pricing of new and existing units, and (4) differential pricing for upgraded units. Three are market responses which policymakers would generally consider undesirable outcomes, namely (5) accelerated depreciation and abandonment, (6) side payments such as key money and tenant maintenance expenditures, and (7) distortions in consumption, not only in the composite housing services but also crowding, length of stay, mobility and tenure choice. Mechanism (5) has already been discussed in some detail; here the others are treated briefly.

Indexing: Keeping Real Rents Constant. This adjustment scheme has attracted much interest from the proponents of "moderate" rent control in the U.S. It has a great deal of superficial appeal, because it addresses the short-run problem of quick price runups in reaction to market swings, while presumably retaining incentives for landlords to invest because they can earn long-run normal profits. Arguments against it are that such a scheme would mitigate the role of prices as a signal for new investment, that once imposed it will be tightened because of the political clout of tenants relative to landlords, that choice of an actual index is problematic, and that landlords are so nervous about controls that imposition of moderate rent control would scare off investment anyway. What has not been emphasized in the rent control literature is the fact that in a well functioning market housing price increases vary spatially for good reasons. For example, in the simple monocentric model of a growing city with a putty-clay housing stock, rents rise faster on the periphery than in the center. A system which tended to equalize rent changes would seriously distort the spatial structure of a city over time, with appreciable attendant welfare losses.

6/ For now assume laws are enforced as written. The research project will study laws as enforced.

7/ Of course alternative indexing schemes can be analyzed, but this is one commonly put forth by moderate rent control advocates.
Note that indexing schemes which are not tied to a price index but which are set at some a priori "reasonable" annual rate of increase will place landlords (and eventually tenants) at the mercy of variable general inflation. Schemes which only permit partial price changes up to the index will also have deleterious effects relative to full indexing.

The survey will examine the frequency of alternative indexing mechanisms. The case studies will be of markets with different indexing schemes, yielding estimates of the effects of alternative indexing methods. One of the key features which will be used to differentiate the stylized regimes used in the Task 3 modeling will be the type of indexing.

Reassessment for New Tenants. Perhaps the appeal of this method is tied to the image of elderly tenants on small fixed incomes who are attached to their neighborhood and who would adjust to a move only with some difficulty. Presumably if tenants moved voluntarily, the new tenant should face market prices since they choose to move in. However, it is not clear why landlords should bear the cost to society of maintaining the elderly's real income. A subsidy or cash transfer would be more appropriate. One advantage of such a system is that at least landlords will gain from tenant's leaving, so there is some incentive to buy out the sitting tenant. This could yield a more efficient allocation than a system with no such gains to mobility (see the following discussion on key money and mobility). All three tasks--survey, case studies, and case study integration--will take assessment practices into account.

Differential Pricing of New and Existing Units. This has become quite common, although the details vary greatly from market to market. For example, in Egypt, controlled rents which are based on value at the date of construction yield rents which vary more by age of structure than does the quantity of housing services produced by those structures (Malpezzi 1984, pp. 10-13). In India, the rent holiday scheme and assessment based on historical cost have a qualitatively similar effect. In Egypt, with tight controls on monthly rents, but higher rents (and key money) from newer units, new construction continues at an impressive pace; in India the rates may have been more seriously depressed. However, Ghanaian controlled rents do not appear to vary in this fashion, and it appears that new construction had ground to a halt by the period studied (1981). Note that a key money system also works as an incentive to new construction, since new units have new tenants from whom such payments can be extracted. Data on new construction will be collected for the case study markets to permit stronger tests and generalizations.

Differential Pricing for Upgraded Units. This is very similar to the above. It provides an incentive for additional housing investment per unit through upgrading. Cairo and Los Angeles, among other cities, share this provision. Malpezzi (1985) provides simulation results that suggest that such a system could prove highly stimulatory to upgrading, since the entire unit can usually be revalued. Empirical work shows that such upgrading exists in Cairo but on a modest scale (Malpezzi 1985, Ch. 4). Further evidence from additional markets is needed.
Side Payments. Once a tenant is in place, monthly rents collected usually correspond to the controlled rents, according to survey evidence from Cairo, Bangalore, and Kumasi. If tenant protection laws are enforced, then landlords will have difficulty extracting more than the legal rent from sitting tenants. But there are other payments for housing services which can make up much of the difference between controlled and market rent. Key money, or lump-sum payment at the time of occupancy, is a common adjustment mechanism. Such payment systems can work most efficiently if finance is available. Low-income tenants in developing countries do not, in general, have easy access to such finance; even for higher income tenants, and in countries with well-developed capital markets, financing key money is made difficult by the fact that the right of tenure purchased is not recognized as collateral. Other side payments which can help equilibrate include: (1) utility payments, and payments for public services; (2) tenants can take over maintenance and repair expenditures which would otherwise be incurred by landlords; (3) where the tenant's occupancy rights are very strong, they may make major physical changes to the structure. The last point in particular points out that renting in a controlled market is actually a very different bundle of property rights than renting in a free market.

The data from Cairo have particularly good information about these side payments. Those data have been extensively analyzed in Malpezzï (1986), and Table 2 presents summary results from that study. The method used can be outlined as follows. Hedonic regression models were used to estimate market prices of controlled units, and the quantity of housing services produced for each unit. Next, data from both controlled and free markets was used to estimate the demand for housing services. Demand estimates were used to compute cost and benefit measures of the households in the controlled market.10/ The analysis was done twice, once using net controlled rents, and again using gross rents which are controlled rents plus side payments (utilities, tenant maintenance and repair expenditures, amortized key money, and amortized tenant upgrading expenditures).

Table 2 demonstrates that side payments equilibrate much of the Cairo market. The key result is the following: when net rents are used in the analysis, renters appear to pay less than 40 percent of estimated market prices for housing services. In addition, according to the demand relation estimated with net rents (based on owners and renters, but adjusted for length of tenure), renters consume less in housing services

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8/ Loikkanen (1983) and Skelley (1986) present theoretical treatments.

9/ See Malpezzï (1986), Chs. 4 and 5, for elaboration.

10/ Details can be found in Malpezzï (1986). The method used is similar conceptually to Olsen's, outlined above. The exact method of computation borrows heavily from Schwab (forthcoming), who integrates Hausman's (1981) analysis of the computation of consumer's surplus measures from log-linear demand equations, with Neary and Roberts' (1980) exposition of using shadow prices to analyze rationed demands.
### Table 2: Welfare Measures and their Components: Cairo Renters

<table>
<thead>
<tr>
<th>Quantity of Housing Service</th>
<th>Price</th>
<th>Implicit Subsidy</th>
<th>Welfare Cost of Ration</th>
<th>Net Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sample Statistics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Based on Q3*</td>
<td>14.9</td>
<td>0.66</td>
<td>19.94</td>
<td>12.14</td>
</tr>
<tr>
<td>Net Rents</td>
<td>Med</td>
<td>8.2</td>
<td>0.38</td>
<td>8.24</td>
</tr>
<tr>
<td>(naive model)</td>
<td>Q1</td>
<td>1.4</td>
<td>0.23</td>
<td>2.25</td>
</tr>
<tr>
<td>N</td>
<td>312</td>
<td>297</td>
<td>239</td>
<td>239</td>
</tr>
<tr>
<td>Prob &gt;</td>
<td>s</td>
<td></td>
<td>.001</td>
<td>.001</td>
</tr>
<tr>
<td>Based on Q3</td>
<td>29.4</td>
<td>1.46</td>
<td>12.00</td>
<td>20.89</td>
</tr>
<tr>
<td>Gross Rents</td>
<td>Med</td>
<td>17.0</td>
<td>0.71</td>
<td>3.27</td>
</tr>
<tr>
<td>(correct model)</td>
<td>Q1</td>
<td>10.1</td>
<td>0.42</td>
<td>-3.76</td>
</tr>
<tr>
<td>N</td>
<td>312</td>
<td>297</td>
<td>237</td>
<td>237</td>
</tr>
<tr>
<td>Prob &gt;</td>
<td>s</td>
<td></td>
<td>.001</td>
<td>.001</td>
</tr>
<tr>
<td><strong>Representative Consumer</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net</td>
<td>8.2</td>
<td>0.38</td>
<td>5.08</td>
<td>0.27</td>
</tr>
<tr>
<td>(native model)</td>
<td></td>
<td></td>
<td></td>
<td>4.82</td>
</tr>
<tr>
<td>Gross</td>
<td>17.0</td>
<td>0.71</td>
<td>4.93</td>
<td>0.63</td>
</tr>
<tr>
<td>(correct model)</td>
<td></td>
<td></td>
<td></td>
<td>4.30</td>
</tr>
</tbody>
</table>

* Notation: Q3: third quartile; Med: median; Q1: first quartile; Prob > |s|: Probability of observing such a large centered signed rent statistic (not reported) if the population mean is zero. Units: estimated equilibrium competitive price normalized at one; all other variables in Egyptian pounds. One pound was approximately one U.S. dollar in 1981 at unofficial rates. Median renter income is 85 pounds.

** Income, Quantity, Price set at each variable's median. For other demand determinants, use median of dot product of sample values and demand coefficients.
than their estimated equilibrium demand. In fact, they consume less than they would demand at higher market prices. This ration imposes a welfare cost which reduces, but does not eliminate, the overall benefit to tenants.

This naive conclusion is radically changed when rents are corrected by including side payments. The median price paid is now seen to be much closer to the estimated market price of housing. Side payments allow landlords to recover, on average, 71 percent of estimated market prices, although there are certainly many households who pay less than estimated market prices; for that matter, many pay more. The distributional implications of this wide variation are discussed in Malpezzi (1986).

**Policy Issues**

Clear policy analysis of rent control has been hindered by the lack of empirical estimates of the impacts of controls, and can be greatly improved by (1) additional estimates of gains and losses from different types of regimes, in different markets, and (2) consistent accounting of the gains and losses to different agents (landlords, tenants, government, deadweight losses) from different sources (changes in prices and the quantity of housing services, but also changes in mobility, tenure, employment, and tax revenue).

By themselves case studies can yield insights into the policy issues, but they are limited by their partial nature. The purpose of the third task is to clearly and sharply define the costs and benefits to all agents from all sources. Of course, the case studies will yield useful policy advice of a partial nature.

For example, the research on Cairo has shown that (1) the rent control regime extracts a welfare cost from tenants as well as landlords, because their housing consumption and mobility are constrained; (2) that aggregated results mask large welfare gains and losses to individual tenants. These results suggest that decontrol is desirable in the Cairo market. However, immediate blanket decontrol would adversely affect not only long-term tenants who pay low monthly rents, but recent movers who paid large amounts of key money in anticipation of future low rent. Landlords would unambiguously benefit from decontrol; owners of older units would receive market rents, and owners of (mostly newer) units with recent tenants could receive a windfall from increasing rents while retaining key money. In effect, recent tenants have purchased a property right which decontrol abolishes.

Vacancy decontrol would have the general advantages (and disadvantages) of a gradual adjustment to a newly competitive market. Landlords could in some cases accelerate the process by offering financial incentives for tenants to move. On the other hand vacancy decontrol could take decades to move to a competitive market, with continuing welfare losses for a generation or more. For vacancy decontrol to work, it would be important to change tenancy laws so that rights of occupancy at controlled rents cannot be passed on to heirs.
An alternative scheme would be to combine vacancy decontrol with "floating up and out"; controlled rents would be no longer nominally fixed but could rise within limits based on a general price index. The actual formula adopted could speed adjustment. For example, rents could be adjusted by larger fractions (or multiples) of the CPI change for older units or units with long-term tenants.

Which decontrol scheme is optimal? Firm recommendations on alternative policies are hard to make at the present time. They should be based on consideration of the effects of the change on all agents from all sources. The cost-benefit estimates to date are limited to changes in consumer surplus from price and consumption changes. Changes in mobility, tenure, tax revenue, etc. are ignored. The dynamics of adjustment are not well understood. In a market for a good so durable, explicit consideration of these dynamics, even if they must rely on assumptions of the speed and nature of the adjustment process, are essential. The model built for the third task will consider these dynamics.
II. PREVIOUS RESEARCH ON RENT CONTROL

In this chapter, previous research on rent control is very briefly reviewed, so that the reader can put the proposed project into context, and in particular understand how our reading of the literature has motivated the development of this proposal. The review makes clear the potential gains from a modest amount of additional research.

Economic research on rent control has so far largely focused on the comparative statics of a simple price control, or on dynamic disincentives to landlord investment and maintenance from a simple price control. Many rent control regimes, as implemented, are quite different from simple price controls. In particular, rent determination schemes are often quite complex, resulting in a schedule of prices which vary by vintage of housing capital, length of tenure, recent upgrading, etc. Theoretical work to date has taken little account of this complexity. Even within the simple analytic framework, only a handful of studies have put forth empirical results. In addition, most empirical work has been done in North America.

The purpose of this proposal is to illustrate how the framework for applied research on rent control can be expanded to model policy regimes that, while still stylized, capture some of the important features of actual rent control policies. Here we briefly review both the standard neoclassical views on rent control, and a few recent extensions.

Analysis of Rent Control Viewed as a Tax on Housing Capital

Simple rent control can be viewed as a tax on the profits of landlords, or a tax on the return to housing capital. The traditional textbook analysis of rent control as a price control then follows directly. When rent control is imposed, the price per unit of housing service charged by landlords is reduced by fiat. In Figure 1, representing market demand and supply, this is represented by a move from \( P_0 \) to \( P_1 \). If rather than being reduced, rents are frozen at existing levels, then an assumed shift in demand or price inflation leads to a similar divergence between equilibrium and controlled prices. In the

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1/ This section is based upon Olsen's (1969) unpublished paper, and on similar published work by Frankena (1975). These and similar analytic treatments present arguments developed earlier in, for example, Friedman and Stigler (1946), Grampp (1950), and Paish (1950). This review is not exhaustive. See Thibodeau (1981) for an excellent review. Malpezzi (1985) contains an expanded literature review. Two useful compendiums are Block and Olsen (1981) and Gilderbloom (1981). United Nations (1979) reviews rent control in developing countries.

2/ Simple in the sense that dynamic price adjustment mechanisms are ignored.
short run, the housing stock is fixed, \((S_0)\), so at \(P_1 \) there exists excess demand \((Q_1 - Q_0)\), and housing is rationed. The divergence between \(P_0 \) and \(P_1 \) also provides a strong incentive for the development of a key money system, where amortized key money makes up the difference \((P_0Q_0 - P_1Q_0)\).

In the longer run, the supply schedule has more elasticity \((S_1)\), and so if key money has not become an effective equilibrating mechanism (because of strict enforcement, or because it is difficult to collect key money from tenants already in place, or simply because low incomes and poor capital markets make it difficult for many renters to finance key money payments) then landlords decrease the quantity of housing services supplied to \(Q_2\). Some houses are demolished early, and new starts are foregone. Obviously, shifts in demand as population and income increase will exacerbate this situation. In the very long run, with an elastic supply \((S_2)\), the simple competitive model implies an unhoused population.

In fact, landlords even have some ability to alter the quantity of housing services from an existing unit. Figure 2 therefore presents an alternative model, based on Olsen (1969) and Frankena (1975), which models rent control as an expenditure control, not a price control.

Suppose that rent control is imposed, and initially lowers real rents to \(P_1\). That is, the supply curve in the immediate market period, which is not shown, is vertical, and the immediate effect of the unanticipated imposition of controls is to effectively reduce the price from \(P_0 \) to \(P_1 \). Rent is fixed at \(P_1Q_0\).

But in the intermediate run landlords have some latitude to vary the quantity of housing services available in the market, as represented by the slope of \(S\). Also, virtually all real world rent control regimes fix rents, not the price per unit of housing services. Specifically, rental expenditure is fixed at \(P_1Q_0\), that is, landlords are constrained by the rectangular hyperbola \(E\), the locus of all quantities and prices yielding \(P_1Q_0\).

Now there is no longer a market clearing equilibrium, and, in fact, the final price per unit of housing services can exceed the original uncontrolled price. As drawn, landlords can reduce supply to \(Q_3\) during the intermediate period, but charge \(P_2Q_3\). Note that at \(P_3\) there is excess demand \(Q_2 - Q_1\). If the minimum quantity which could be offered in the intermediate run (the vertical portion of the supply curve) were less than \(Q_3\) (where \(E\) intersects with the demand curve), \(Q_3\) would become the binding constraint because at prices higher than \(P_3\) consumers would demand less housing than was offered.

3/ Some rent control regimes try to limit the landlord's supply response with building codes and maintenance provisions. These are difficult to enforce and cannot in any case prevent some supply response.
Rent Control as Expenditure Control

The "equilibrium" quantity of housing supplied at the controlled price $P_1$ is the minimum of housing demanded and offered after imposition of the control. The outcome depends largely on the supply elasticity: if zero ($S_0$) no effect on quantity; in very long run ($S_1$) no housing produced; in the intermediate run, min \((Q_1, Q_2) = Q_2\).

Rents, not prices, are controlled. Here attempt by controlling authority to reduce rent to $P_1$ results in reduced quantity $Q_1$ at price $P_2$, rent $P_1 Q_2$. 
The existence of an alternative owner occupied market further complicates the analysis. In one polar case, if the supply of housing services from this sector is perfectly elastic (and transactions costs broadly defined are ignored), the existence of this sector will limit prices to \( P_0 \), since if prices rise farther household will switch sectors. In the other polar case, assume that there is no available owner housing or that transactions costs, lack of finance, etc. constrain households to remain in the rental market. Then the analysis presented earlier stands.

The extension of the price control model by Olsen and others to expenditure control is therefore shown to lead quickly to further complications. Data requirements for predicting consequences of rent control using this model are quite high: in particular the existence of alternative submarkets complicates the analysis. Further, little insight is given into dynamics.

Dynamic Models of the Effect of Rent Controls on Maintenance

We have just seen that comparative static models which allow for some price elasticity of supply of housing services imply that rational landlords will permit their dwellings to deteriorate over time. If the rent control regime fixes rent, it can be modeled as a tax or a tariff in the immediate market period, but a reduction in the quantity of housing services supplied over a longer period results in a fixed expenditure, i.e., lower quantity, with a return to market price.

Dynamic models of profit maximizing landlords have provided some insight into this process, and a little empirical support. One of the first studies in this vein was by Moorehouse (1972), who examined the optimal choice of maintenance inputs by a value maximizing landlord. Using a three input production function (capital, current inputs which must be employed at some exogenous fixed rate, and variable maintenance inputs), and assuming geometric physical depreciation of the unit, Moorehouse investigates a rent control regime which freezes nominal rents during an inflationary period. In other words, the time path of real rents falls by the rate of general price inflation, and rises by the rate of depreciation not offset by maintenance. His model predicts that in a competitive market with general inflation, dynamic equilibrium requires concomitant increases in rents; but in a rent controlled market, the burden of adjustment falls on maintenance.

Related studies by Dildine and Massey (1974), Arnault (1975), and Kiefer (1980) reach the same conclusion: rent control reduces maintenance of housing units ceteris paribus. Kiefer additionally studies the optimal economic life of a structure, and finds that rent control leads to premature abandonment, compared to the uncontrolled case. In a

\[4/\] Note that under such extreme assumptions the rental demand curve would not have slope above \( P_0 \).
related empirical study of an uncontrolled market, Bender (1979) finds that declining housing prices in general are associated with higher rates of demolition. This unsurprising finding indirectly supports Kiefer's conclusions that rent control reduces the optimal life of a dwelling. It can do this because (i) the present value of rents is lowered relative to alternative uses; and (ii) lower maintenance can directly shorten the life of a structure.

Rydell and Neels (1982) estimate directly the elasticity of housing services with respect to maintenance using data from the Housing Assistance supply experiment. In any period, housing services are the sum of housing services last period, plus some (nonlinear) function of the last period's maintenance and repair inputs, minus gross depreciation:

\[ H_{t+1} = H_t + aM_t^\lambda - bH_t \]

Using iterative techniques, they find that the best fit is obtained when a gross depreciation rate of eight percent is assumed (the elasticity, \( \lambda \), is estimated to be .17). In other words, without maintenance dwellings will depreciate by eight percent per year. This places a bound on how fast landlords can decrease the quantity of housing services as a response to the imposition of controls.

Estimates of Costs and Benefits, and their Incidence

Perhaps the first careful study of the costs and benefits of rent control is Olsen's (1973) paper. Using data from New York City in 1958, he used estimates from a hedonic index of uncontrolled units to predict the uncontrolled rentals of controlled units. In an analogous fashion, he used the data from the uncontrolled portion of the market to estimate the free market Engel curve for housing services. The average controlled rent for an apartment was $999 per annum; the average uncontrolled rent predicted by the hedonic results for those same units was $1,405, implying a subsidy of $406. The average free market expenditure for the controlled households was $1,470, indicating that they consumed slightly less housing than they would have in the free market. The average household in the controlled market consumed about four and a half percent less housing than they would have in the free market.

Olsen computed the economic benefit of rent control to each tenant under the assumption of a unitary price elasticity:

\[ R - R_c + \hat{R} [\log \hat{R} - \log \hat{R}] \]

where \( \hat{R} \) is the (fixed) market demand at market prices (conditional on income and other demand determinants), and \( \hat{R} \) is the market rent of the controlled unit. Olsen's estimate of the average net benefit is $213, little more than half the gross subsidy implied by rent control.

5/ Other such studies include Malpezzi (1984 a) and Linneman (forthcoming).

6/ The average income, for comparison, was $6,229.
The benefits are found to be slightly negatively related to income, larger for larger households, and larger for households headed by older people. The annual benefit is estimated to decrease by about one cent for every dollar of additional income, $9 per year of head's age, and $69 per additional household member. Benefits do not vary significantly by race or sex of head of household. Rent control in New York City in 1968 appears to redistribute income, but very weakly, and in no way proportional to its cost. Olsen showed that there is a slight tendency for lower income households in New York City in 1968 to receive slightly larger benefits.

A recent paper by Peter Linneman (Linneman, forthcoming) updated Olsen's study. In 1969, 1971, and 1974 New York made important changes in its system of controls, with two key effects: (1) most post-1947 units were brought into the rent control system, and (2) a distinction was drawn between "controlled" and "stabilized" units. Controlled units (roughly, pre-1947 units with tenants who moved in prior to 1947) have rents set by the Rent Control Division while stabilized units (newer units, or pre 1947 units with new tenants) have rents set by negotiations between landlord and tenant, subject to approval of a board comprising landlord, tenant, and government representatives (see Linneman for details). In 1981, about 19 percent of privately rented units were in the controlled sector; 62 percent were stabilized; and 19 percent were uncontrolled. Private rental housing was about 72 percent of stock.

Linneman examines (1) the length of tenure in each sector (controlled, stabilized, and uncontrolled), and (2) rents paid in each sector compared to predicted rents from hedonic regressions from the stabilized sector. He finds that, after controlling for age and other household characteristics, (1) tenancy duration in the stabilized sector, and (2) the controlled sector has a much longer tenancy duration (12 years) than the other two sectors. The hedonic confirms large differences between the controlled and stabilized sector rents, after controlling for quality: controlled units rented for $951 per year less (on average) than the hedonic predicted they would rent for if stabilized. And in fact, rents are actually lower in the uncontrolled sector than predicted if in the stabilized sector ($200 per year less, on average). A detailed analysis of the distribution of the benefits of rent control demonstrates that the New York system does, on balance, redistribute income from high to low income households, but the effect is weak and very poorly targeted.

Daniel Pena and Javier Ruiz-Castillo (1984) carried out a similar household level cost-benefit analysis for Madrid. Madrid also has, in effect, a two tiered system. Roughly, units occupied before 1964 have their rents controlled by the government. Only small increases in their rents have been permitted. Units occupied after 1964 are under a

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7/ Olsen notes that these regression results may understate the regressivity of benefits because lower income people are more likely to rent in the controlled market and, hence, appear in the regression sample.
slightly more liberal system: leases must be renewed, but at a rent agreed upon by the landlord and tenant, subject to a government ceiling which is more generous than the increases permitted in the strictly controlled sector.

The authors treat the post 1964 sample as approximately uncontrolled, a limitation imposed by the data. They find an average monthly rent of 945 pesetas in the strictly controlled sector, while the average predicted rent for these units (using moderately controlled hedonic prices) is 4694 pesetas. The average income in the strictly controlled sector is about 75 percent of the average income in the moderately controlled sector, suggesting some redistributive effect. However, extensive multivariate tests suggest that the subsidy is poorly targeted: personal characteristics, including income, explain only 30 percent of the variances in benefits. The size of the benefit is positively correlated with income. Further, households with lower socioeconomic or educational status, unemployed household heads, and female household heads receive systematically lower benefits.

Rent Control and Mobility

Two studies, by Clark and Heskin (1982) and Boersch-Supan (1983), examine the relationship among rent control, tenure discounts, and mobility. It has been well documented that even in the absence of rent control long-term tenants pay lower prices for rental housing, ceteris paribus. Landlords find it difficult to raise rents for sitting tenants relative to increases for new tenants, landlords have an incentive to keep desirable tenants in place through discounts, and tenants themselves are less likely to move when they receive a good deal. The first study to examine the length of tenure discount and mobility in the context of rent control was Clark and Heskin (1982). They examined length of tenure discounts and mobility rates, with and without controls, in southern California in the late 1970s. They disaggregated their results by geographic location, race, and income, among other things. They found: length of tenure discounts increased under rent control; tenant mobility decreased, except for the youngest group of renters; and the differences were slightly larger for lower income households.

Boersch-Supan (1983) provides a detailed micro-economic model of a housing market which implies that rent control of a particular type—a freeze in real rents which is lifted whenever a new household moves in—will result in larger length of tenure discounts and lower mobility rates. He finds empirical support from Follain and Malpezzi's (1980) estimates of the length of tenure discount for renters in 39 U.S. metropolitan areas: the average annual discount is .95 percent for uncontrolled cities, and slightly higher—1.1 percent in controlled cities. The average length of stay is half a year longer in the rent controlled markets—4.7 years versus 5.2 years.

8/ Follain and Malpezzi (1979), Malpezzi et al. (1981).
Studies which Analyze Alternative Adjustment Mechanisms and Methods of Decontrol


Arnott presents a complete analysis of an actual law and its enforcement. Ontario has had rent control since 1975. The law applies to the existing stock (pre-1975), but rents are not frozen. Landlords choose an automatic six percent annual increase, or can apply for exceptions based on one of three criteria: (1) on the basis of cost increases exceeding the guideline; (2) to attain a modest rate of return, currently two percent; (3) because of a documented increase in the quality of the unit, presumably through increased maintenance and repaid expenditures. Most landlords take the automatic increase, and the third option for exceptions had not been used at all as of the study date.

Arnott's analysis is primarily theoretical, some of it an extension of the analysis cited earlier. He reiterates several important arguments from the literature: (1) controls unambiguously hurt landlords but their true distributional implications are unknown; (2) spillover effects into the uncontrolled market are also ambiguous (see also Fallis and Smith, 1984, and Marks, 1984); (3) effects on new construction of laws that currently exempt new units depend on expectations of landlords, so new construction may still be adversely affected. An interesting new result from his analysis is that rent control could actually increase book profits in early years, which would be more than offset by later losses. Arnott also provides one of the few cogent discussions of alternative decontrol schemes.

Decontrol is an important topic not often analyzed in the literature. The familiar comparative static models provide little guidance on how best to get there from here; by their static nature they assume blanket decontrol works best in all circumstances. Arnott, on the other hand, lists seven forms of decontrol (pp. 74-75):

- **Vacancy decontrol.** Units are decontrolled as they become vacant.

- **Vacancy-rate decontrol.** Particular housing submarkets (defined on the basis of the location or type of unit) with a vacancy rate above some statutory level are decontrolled.

- **Rent-level control.** Rent-level decontrol could be more appropriately termed decontrol from the top down, since it involves decontrolling the most expensive units first and the cheapest last. The rent level above which units are decontrolled can depend on the location or the type of unit.
Floating up and out. This designation covers any gradual relaxation of controls that applies uniformly across housing submarkets. When controls are the GI/CPT type, floating up and out entails gradually raising the guideline increase. Where the control program contains a rate-of-return provision, this kind of decontrol could entail raising the rate of return.

Contracting out. This is a form of vacancy decontrol; the landlord and tenant negotiate a sum that the landlord pays the tenant if he vacates.

Local option. A higher jurisdiction that currently administers controls allows lower jurisdictions to choose whether or not to retain them. Usually, the higher jurisdiction requires the lower to administer the controls if the latter decides to retain them.

Blanket-lifting. All rent-control provisions are suddenly and completely lifted.

After a thorough discussion of these alternatives, he concludes that lack of quantitative estimates of relative effects precludes choosing a clear-cut winner for Ontario's rent control regime, much less one method best for all regimes. In particular, the method implied by comparative static analysis, blanket decontrol, can have high costs:

The advantage of blanket-lifting is obvious: it eliminates at a stroke what could become a malignant cancer in the housing market. Such precipitate action has its costs, however, and the greater the degree of excess demand in the market, the greater these costs will be. If there is even moderate excess demand in the housing market as a whole, there is probably substantial excess demand in certain submarkets. The sudden and dramatic increase in rents that tenants in these submarkets will experience with blanket-lifting may have serious social and political repercussions. Many tenants will have to find alternative, often unsuitable, accommodation in a hurry, and for some the experience will be traumatic. The press is likely to focus on instances of extreme hardship caused by decontrol, and in response to the resulting clamor of protest, the government may decide, against its better judgment, to reimpose controls. In short, blanket-lifting is an attractive option only if there is little or no excess demand in any housing submarket (p. 98).

Rydell et al. (1981) present an analysis of Los Angeles' rent control regime. Los Angeles rent control has been in force since 1978. After an initial freeze, rents for units occupied by sitting tenants could be increased to recover repaid costs, or in recent years by some fixed percentage (7 percent) which has been lower than the general rate of inflation. Units are decontrolled as they are vacated, however, and several classes of rental accommodation are uncontrolled: newly constructed units, luxury housing (defined by pre-control rents), and single family structures. Substantial rehabilitation ($10,000 - $17,000, depending on size of units) also exempts units from controls.
The authors use a combination of empirical and simulation methods to measure the effects of the laws on rents, depreciation, and conversion. In addition to analysis of the effects from recent years, they forecast the effects of six proposals for decontrol or tighter control (see Figure 3):

- End rent control immediately (labeled no law)
- Phase out current law over two years, meaning two years of rent increases up to 75 percent of the general price level, followed by complete decontrol (labeled phaseout law)
- Extend the current law (7.6 percent increase for sitting tenants, no cap for units when they turn over)
- Lower the increase for sitting tenants to 5.6 percent, with no cap on turnovers
- Keep the 7.6 percent increase for sitting tenants, but cap the increase at turnover at 10 percent.
- Lower sitting increases to 5.6 percent, cap turnover increase at 10 percent.

On recent effects, the authors find only modest real reductions in rents and in the quantity of housing services provided in the rental market. Half of the decrease is from deterioration and abandonment, and half from conversion to owner occupancy. The modest effects are almost entirely due to the small divergence between assumed market outcomes (prices rise with the CPI) and the increases permitted under the regime. Two related questions which deserve more analysis are, first, what happens in a market when controlled and market prices do diverge, and second, if they did not diverge, what is the point of controls?

Examination of Figure 3 highlights the wide range of outcomes from alternative policies. All simulations assume a 10 percent increase in the general price level, and that in the absence of controls the relative price of housing would remain fixed. Blanket decontrol results in rapid price adjustment, and a slower adjustment back to the long-run equilibrium housing stock. A two-year phase in period, unsurprisingly, has similar effects with a lag. Note that large real rent reduction of the tightest law (5.6 percent allowable increase in rents for sitting tenants, a 10 percent cap at turnover), is accompanied by a large decrease in the quantity of housing services available. Note that in this case prices are being reduced at a rate which is declining over time, while the quantity reduction is accelerating.

9/ The set of models used forecast the time path of rents, maintenance, demolition, conversions, and new construction. They are described in Rydell et al. (1981).
Figure 3
Effects of Alternative Rent Control Laws, from Rydell et al.

Percentage reduction in quantity of rent-controlled housing services caused by alternative Los Angeles rent control laws

Percentage reduction in price of rent-controlled housing services caused by alternative Los Angeles rent control laws

Source: Rydell et al., pp. 85-86.
The Relationship Between Controlled and Uncontrolled Market

Several papers have addressed the potential effects of a price control on a related, though nominally uncontrolled, market: Needleman (1965), Gould and Henry (1985), and Fallis and Smith (1984). We focus on the last paper.

Fallis and Smith actually develop two related models, one for rent control regimes which exempt new units from price controls, and one for regimes with vacancy decontrol provisions. Their short-run models predict that under most conditions excess demand spills over into the uncontrolled market, and, in the short run, drives up the uncontrolled price. In the long run, they implicitly assume an elastic supply function that implies a reduction in the quantity of housing services from the controlled sector, and an expansion in the uncontrolled sector, narrowing the wedge between prices.

They also present an empirical test of the model using data from Los Angeles (1969-1978). Following Rosen and Smith (1983), they assume that there is a straightforward relationship between rental rates, $R$, operating expenses, $E$, and the vacancy rate, $V$, estimated as:

$$ R_t = -6.25 + 0.078 E_t + 34.09 \left( \frac{1}{V_t} \right) + 26.49 \left( \frac{1}{V_{t-1}} \right) $$

where dots indicate time derivatives and standard errors are in parentheses. Rent control was introduced in Los Angeles at the end of this period, 1978. The estimates are used to forecast what rents would have been in the absence of controls, and the forecast compared with rents in the controlled and uncontrolled sector. After two years, controlled rents had risen by 10 percent less than the forecast, and uncontrolled rents by 22 percent more, confirming the hypothesis that rent control increases prices in the uncontrolled sector in the short run.

Summary of Rent Control Research Under RPO 672-46

As noted above, research on rent control in developing countries has been undertaken as part of RPO 672-46, "Housing Demand and Finance in Developing Countries". That work includes several studies of Cairo (Malpezzi 1984a and 1985; and Mayo et al. 1982, which predated the current project), and studies of Bangalore, India (Tewari and Kumar 1985, and Tewari and Malpezzi, forthcoming). A synthesis of those first studies can be found in Malpezzi (1984b). Each will be summarized briefly, in turn.

10/ Little work had been done before this on rent control in developing countries, other than a description of rent control laws in several countries (United Nations 1979).
The research carried out by Mayo and his associates before the research project noted several interesting facts about the Cairo market, including a strong rate of new construction and a vacancy rate of almost six percent despite enforced controls on monthly rents paid and strict tenant protection laws. The research by Malpezzi was designed to explore the behavioral foundations for those facts, which are not predicted by the standard price control model.

The simulation model presented in Malpezzi (1985) shows clearly that the effect rent control has on housing investment is not robust to type of rent control regime. While simple rent control (pure price reduction, or an excise tax on housing capital) unambiguously reduces investment by optimizing landlords, if the rent control regime allows price to be a function of investment, the gain from revaluation can offset this effect partially or, in extreme cases, result in more investment in housing capital than in the competitive case.

Casual observation suggests that controlled units in Cairo rent for much less than estimates of their market rent in the absence of controls. However, Malpezzi (1984a and 1985) showed that when account is taken of side payments, including key money, utilities, maintenance and repair and upgrading by tenants the discount disappears—for the typical (median) household. When these are included the median estimate of the price per unit of housing services differs by only one percent from the estimated long-run equilibrium free market price. But it must also be emphasized that there is a wide distribution around this median. Quite a few Cairo households to receive large discounts, just as some a few pay very high prices for housing services. These differences appear to be largely unrelated to tenant characteristics measuring ability to pay, raising questions of horizontal equity. Otherwise equal households receive quite different housing "deals."

Most Cairo renters are well off their demand curve—much farther off than can be explained by the stochastic nature of the estimated demand relation. Corresponding to this departure from equilibrium, many households have significant welfare losses from under and over consumption of housing services. Underconsumption dominates, but about a third of the renters consume more housing than predicted by their demand relation. This conclusion holds up even if households very far from their demand relation are analyzed separately from those within a 95 percent confidence interval of their equilibrium demand.

Indirectly, this offers evidence of a market where some landlords adjust by charging key money and reducing the quantity of housing services, and other landlords adjust by rehabilitating their units. It is not consistent with other evidence, however, which suggests that far fewer than a third of rental units have undergone large upgrades which would permit revaluation of the unit.

A strong prima facie case can be made that rent control decreases mobility because the median length of tenure for renters—13 years—far exceeds that in other markets. For comparison, the median length of tenure for renters in U.S. markets is typically one to three years. The preliminary analysis in Chapter 2 also indicated that at least
some renters spend considerable amounts of money maintaining and upgrading their units. However, estimation of a preliminary behavioral move/upgrade model does not provide much information about what causes people to change consumption.

Complementary research has been undertaken in collaboration with the Indian Institute of Management, Bangalore. Tewari and Kumar describe the quite complex set of rent control laws and practices, and their historical and institutional setting. An interesting feature of the Bangalore regime is that tenants are allocated by the rent controller to newly vacant units. Currently the costs and benefits of the rent control regime are being estimated in the Olsen framework described above. Those results will be presented in a forthcoming joint paper by the Institute and the Bank (Tewari and Malpezzi, forthcoming).

Synthesis of these results from Cairo and Bangalore, as well as some results from Ghana, can be found in Malpezzi (1984b). This paper will be revised as additional results are produced this fall, and it serves as a model for the cross-country comparisons to be undertaken in this project. In its present form, it highlights the differences in outcomes from rent control in several markets. For example, the standard model of rent control predicts a halt in new construction following the imposition of controls. In Ghana the standard model predicts quite well, in the sense that the supply of new construction has ground to a halt by the study period (1981). This was clearly not the case in Cairo, as has been noted several times already. India seems to be somewhere between these polar cases.

The Need for Additional Research

Most theoretical research to date has focused on analysis of a simple price control without much reference to common methods of adjustment of the controlled price. Two exceptions, by Arnott and by Rydell et al., suggest that the effects of different stylized laws can vary drastically. The little empirical research which has been done has been inconclusive as regards the effects of rent control on investment. Research on benefits to tenants suggests that rent control yields very small benefits when compared to its costs. There is no evidence that rent control operates as an effective redistributive device, and rent control seems to decrease household mobility.

This review of previous research demonstrates important practical gaps in our knowledge about rent control. There are at least three reasons for the proposed additional research. First, little is known about the extent of rent control generally, and even less about the prevalence of specific provisions of rent control laws, how they are enforced, what related laws exist, and what market conditions are like in controlled markets. The first task is designed to fill this gap.

Second, few econometric studies have been done anywhere of the costs and benefits of rent control laws, and only two in developing countries. Even less has been done on estimating supply side impacts, and the effects of rent control on public finance, household mobility, tenure choice, and the labor market. The second task aims to expand the available knowledge dramatically.
Third, research done to date has not integrated estimates of gains and losses from different impacts, or considered the interests of all agents in a consistent (i.e. accounting) framework. The third task is designed to integrate results from household cost-benefit studies, aggregate effects on supply, changes in mobility and taxes, etc., and clearly identify the gains and losses to different agents (landlords, tenants, governments, and deadweight losses). The synthesis of case study results will also yield the first systematic look at alternative methods of decontrol to be firmly grounded in a consistent model with behavioral foundations and based on actual empirical results.
III. RESEARCH DESIGN

Overview

The purpose of this chapter is to explain the research design in more detail. The preceding chapter has emphasized that only a few studies have attempted to study the effects of real world rent control regimes; fewer still have presented empirical estimates of the costs and benefits of these regimes. To reiterate, the purpose of the research project is to study real world regimes as enforced, under different market conditions. To this end, we propose three interrelated tasks: (1) survey rent control laws, enforcement practices, related laws, and market conditions in many urban housing markets; (2) carry out detailed case studies in several markets, including the costs and benefits to tenants, and the effects of different regimes on housing supply from new construction and the existing stock; (3) use an integrated cost-benefit model based on case study results to develop guidelines for the most important and desirable changes, by studying the effects of changes in the rent control regime under different market conditions, and studying optimal decontrol strategies.

First, each of these three tasks will be discussed in turn. Next, the interrelationships among these tasks will be explicitly laid out. Finally, a plan will be proposed for the fourth task, the dissemination of results from the research project.

Task 1: Survey of Rent Control Laws as Written and as Enforced

Key Features of Rent Control Laws

The purpose of rent control laws is to limit the rate at which rents increase. The market consequences of any rent control law depend on how broadly and deeply they cut that rate of increase. Below, we identify the key features of rent control laws and note how choices about each affect the breadth and depth of the implied rent reductions.

Any rent control law can be well characterized by the answers to five questions.

- How long has/will the law be in effect?
- What is the coverage of the law--which dwellings are subject to it, which are exempt?
- What rent increases are permitted for continuing tenants—that is, if a dwelling does not turn over, how much can the landlord raise the current tenant’s rent?
- How much can landlords raise rents when their dwellings do turn over?
- Under what circumstances does a dwelling become permanently decontrolled?
The range of answers to those questions can be arrayed so that the potential effects of the law for the housing stock range from trivial to severe. Laws of longer duration have more severe effects on the housing stock—longer durations imply greater rent reductions, which reduce a landlord's cash flow and increase incentive to undermaintain his property. Table 3 illustrates the variation in four important details of rent control laws in six markets.

Three key local economic factors condition how rent control would affect a locality's housing market:

- How tight is the local housing market—that is, what is the demand for rental housing relative to the supply?
- Do current housing market conditions reflect long-term trends, or are they aberrant?
- How much background price inflation is there—when inflation is driving up all prices, there will be pressure for rents to follow.

As with the terms of rent control laws, the economic conditions can be arrayed so that the potential effects of rent control on the housing stock range from trivial to severe. Very tight market conditions, signaled by correspondingly low vacancy rates, may arise from recent surges in demand or from recent increases in producers real costs of providing housing services. In either case, rent controls imposed in tight markets will have more severe effects on the housing market than if the market were loose. In the absence of rent controls, tight markets are characterized by rising real rents and loose markets by stable or falling real rents. Consequently, in tight markets rent controls will have considerable bite, while in loose markets they may not.

If current low vacancy rates reflect only a temporary surge in demand (as, say, in an isolated area during a major construction project, or hosting a large temporary event like the Olympic games) or a sudden unanticipated loss of supply (as, say, after a natural disaster), rent controls may hold down rents without much affecting housing production or maintenance. But if current low vacancy rates reflect economic conditions which are likely to persist over time, especially recent population increases which are expected to continue, then rent controls may indeed short circuit housing production or maintenance.

When the prices of all goods and services are rising, rents will tend to follow, even in relatively loose housing markets. The stronger this pressure from background price inflation, the more severely rent controls press downward on real rents—and consequently the greater impact the laws have on the workings of the housing market.
<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Approximate Duration of Current Regime</th>
<th>Coverage</th>
<th>Rent Adjustments Over Time</th>
<th>Rent Adjustments for New Tenants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangalore, India</td>
<td>24 years</td>
<td>All rental housing except very low income (&lt;15 rs/mo) and new construction (&lt;5 years)</td>
<td>Frozen</td>
<td>&quot;Fair rent&quot; remains fixed; rent can decline because existing controlled units cannot come under law when tenant changes.</td>
</tr>
<tr>
<td>Cairo, Egypt</td>
<td>23 years</td>
<td>All rental housing except furnished luxury market</td>
<td>Frozen</td>
<td>No legal adjustment; key money changed.</td>
</tr>
<tr>
<td>Goteborg, Sweden</td>
<td>17 years</td>
<td>All rental units negotiated between landlord and tenant</td>
<td>Rent changes</td>
<td>None</td>
</tr>
<tr>
<td>Kumasi, Ghana</td>
<td>22 years</td>
<td>Single-family (high cost) units exempted</td>
<td>Frozen</td>
<td>None</td>
</tr>
<tr>
<td>Los Angeles, California</td>
<td>7 years</td>
<td>Rental units pre-1978; new construction, luxury and single family exempt</td>
<td>Annual increase</td>
<td>Unit decontrolled permitted; tied to general price index.</td>
</tr>
<tr>
<td>Ontario, Canada</td>
<td>9 years</td>
<td>Luxury units and new construction exempt</td>
<td>Fixed percentage</td>
<td>Each year; some exemptions for cost.</td>
</tr>
</tbody>
</table>

Source: Pre-Test of Rent Control Checklist, Annex I.
The second objective of the broad survey will be to survey the rent controlled cities, as well as a representative sample of cities without rent controls, to explore how much variation there is in these key market conditions.

Rent Control and Property Taxes

The relationship between current controls and property taxes is described in the case study section, below. Here, merely note that the survey will garner information on several key details of the property tax laws and administrative practices, including methods and frequency of assessments.

Survey Execution

Task 1 of the research project is to survey laws as written and enforced, and to survey market conditions, as widely as possible within given resources. In addition to yielding important general information about the scope of rent control laws and practices, the survey will also feed into Tasks 2 and 3. The survey will ensure that the case studies chosen represent a broad spectrum of actual rent control regimes and market conditions (Task 2). In addition, they will be used to develop a taxonomy, or several stylized rent control regimes, which will be studied in the modeling effort which integrates the case study results (Task 3).

The survey will revolve around a questionnaire, or checklist, designed to elicit essential information on each market surveyed. The unit of observation for the Task 1 survey is the market or, roughly the city. A draft checklist is included in the proposal as Annex I. The draft is already being pretested in several markets. The checklist will be completed by experts on individual markets, and checked against published statistics and other sources to the extent possible. The desired coverage is broad: we would like to gather information about at least one important market in every country. Such broad coverage is ambitious but not unrealistic. Even partially completed questionnaires will yield useful information on the scope of rent controls. Of course, in many countries several markets will be surveyed, and in some countries several experts will be asked to prepare responses for the same market, in order to examine the consistence of responses. This implies two to three hundred surveys will be sent out. Data from the checklists will be verified and entered into a microcomputer database for analysis, but the questionnaire is also designed to elicit comments and sources of additional information, which will be studied carefully.

The key to the success of the survey is follow-up. The follow-up on the questionnaire will emphasize (1) complete coverage of the world’s major cities, and (2) learning at a minimum which countries have widespread controls and which do not. Preliminary analysis of survey results can be undertaken as they come in, providing essential background information for the case study analysis plans, and for designing the simulation model. Approximately six months into the survey effort, a preliminary working draft will summarize key findings from the survey, and
identify problem areas which need more follow up. For example, it is quite likely that the property tax questions will have a high initial nonresponse rate, requiring more follow up (see Part III of the draft checklist in Annex II). Approximately one year into the project a revised summary of the survey results will be produced.

Task 2: Case Studies of Selected Markets

This section of the proposal will briefly describe three aspects of the proposed case studies: the design of the case studies, the outputs from case studies, and the choice of markets to be studied.

Case Study Design

Each case study will be tailored to the particular market under study; after all, a maintained hypothesis of the project is that local conditions matter, and are in fact the focus of the study. Still, each case study will contain a set of core elements:

1. An institutional analysis of the rent control acts and enforcement mechanisms

2. A literature review of previous housing market research in that market, with emphasis on rent control

3. Describe important features of the market, including recent price behavior, population change, income changes, vacancy rates, new construction, and the role of the informal sector. This will include an explicit evaluation of the quality and usefulness of the data

4. Where time series data permit, relate variation in the above measures to the introduction and major changes in rent control laws and enforcement practices

5. Estimate the effects of rent control on housing expenditures, using household survey data

6. Estimate the costs and benefits of rent control based on consumer's surplus and cash equivalent value models, similar to that of Olsen (1973)

7. Estimate the distributive impacts of rent control, using these cost/benefit estimates

8. Based on interviews with local experts, provide recommendations on the most feasible methods of decontrol or modification of the current law

9. Estimate the effects of the current regime on property tax revenue
The actual design of the case studies will be set out in an analysis plan which will be developed by each case study team. A companion discussion paper has been drafted which provides much more detailed guidelines for the case studies. This will ensure that all core areas are adequately treated, that results will be as comparable as possible across case studies, and that the case studies generate the information needed for Task 3.

Each case study will go beyond the core questions, to take advantage of particular features of available data. For example, in Cairo, the project will produce econometric estimates of the effects of rent control on household location, mobility and tenure choice. However, a set of simple models will also be estimated, so that they may be compared (1) to more complete models from the same market, in order to judge their reliability, and (2) across markets and hence across type of rent control regime and market conditions. Table 4 summarizes the proposed case studies.

**Choice of Case Study Markets**

Two principles guide the choice of markets for study: obtaining needed variation in rent control regimes and market conditions (a benefit), and data availability and timing (a cost). Fortunately a number of high quality data sets are available for analysis, and they represent a good cross-section of rent control laws and market conditions (see Table 2, above). Phase One will include five case study markets. Table 5 presents some information on the four markets which have already been chosen on Cairo, Egypt; Kumasi, Ghana; Bangalore, India; and Harare, Zimbabwe. Note that we have been fortunate to acquire data from markets with reasonable variation in the types of rent control regimes in place, and in market conditions. Primary responsibility for the Egyptian case study will rest with Stephen Malpezzi and other project staff at the Bank; the Ghana case study will be undertaken by Graham Tipple and Ken Willis of the University of Newcastle upon Tyne; Vinod Tewari of the Indian Institute of Management (Bangalore) is in charge of the Bangalore study; and Marja Hoek Smit, Peter Linneman, and Joseph Gyourko will carry out the Phase One research on Zimbabwe.

An additional case study will be developed. A high priority is being given to locating a market which has undergone decontrol or a significant relaxation of controls. Several possibilities are being explored, including several Latin American cities. The broad survey of housing markets (Task 1) will be used to develop a taxonomy of rent control regimes, and this taxonomy will be used to decide whether any additional case studies will be required in Phase Two of the project.

Three areas for potential collaboration between the Bank and other research organizations have been identified. First, the Indian Institute of Management, Bangalore will collaborate in additional research on the interaction between rent controls and property taxes in India. Second, the National Planning Office of Hungary is interested in doing a study of the costs and benefits of their administered housing system which will follow our case study format. This collaboration could yield
### Table 4: List of Phase One Case Study Markets

<table>
<thead>
<tr>
<th>Country</th>
<th>Current Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egypt (Cairo)</td>
<td>Data in hand. Descriptive statistics and cost/benefit model complete. Additional work to be undertaken on location/mobility and tenure choice.</td>
</tr>
<tr>
<td>Ghana (Kumasi)</td>
<td>Data in hand. Additional household survey and supply data to be collected.</td>
</tr>
<tr>
<td>India (Bangalore)</td>
<td>Institutional analysis completed. Descriptive statistics and cost/benefit model forthcoming. Additional work to be done on property taxes.</td>
</tr>
<tr>
<td>Zimbabwe (Harare)</td>
<td>Data in hand.</td>
</tr>
<tr>
<td>Additional Case Study Market</td>
<td>To be chosen; prefer a market with a history of decontrol, perhaps in Latin America.</td>
</tr>
<tr>
<td>Hungary</td>
<td>Data has been collected by Hungary's National Planning Office. They will undertake the case study using their own resources.</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Specific case study opportunities are now being identified. Case studies will be carried out and financed by the Centre for Housing Research.</td>
</tr>
</tbody>
</table>
Table 5: Interaction Between Market Conditions and Rent Control, (Phase One) Case Study Market

<table>
<thead>
<tr>
<th>Inflation</th>
<th>Rent Adjustment</th>
<th>Treatment of New Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Indexed</td>
<td>Frozen</td>
</tr>
<tr>
<td>Moderate</td>
<td>Zimbabwe</td>
<td>India</td>
</tr>
</tbody>
</table>

Additional Comments on Case Study Markets

- **Cairo, Egypt**: Excellent data on location, mobility, key money. High rate of new construction observed.
- **Kumasi, Ghana**: Very high inflation, strict rent control regime. Have some data over time.
- **Bangalore, India**: Good data from one market already (Bangalore). Rent controls vary markedly from one city to another, so other markets may be included. Keen interest in property tax issue.
- **Harare, Zimbabwe**: Strict law but relatively low inflation. Some adjustment in rents has been permitted.
interesting insights on the effects of administered housing prices in a mixed economy where the housing sector is largely centrally planned. Third, the Centre for Housing Research of the University of Glasgow is interested in carrying out case studies of the U.K. and possibly other European markets. Note that the research at Hungary's Central Planning office and the University of Glasgow requires no Bank resources.

**Data Collection**

The guiding principle of data collection in this project is to rely on existing data as much as possible. Much of the data to be used was gathered or generated during the earlier states of RPO 672-46, Housing Demand and Finance in Developing Countries. For that study we assembled high quality household level data sets from eight countries. Additional data from Kenya are about to come "on line." The philosophy during that project and during this project is to exploit available opportunities to develop new data sets when they exist at a modest cost, developing a "data pipeline." For example, during RPO 672-46 the project designed data collection efforts for two governments (Korea and Kenya), and funded a survey in Manila, the Philippines. The Bank (and the countries) received three high quality data sets at a total cost to the project of three trips and $10,000.

There are several compelling reasons to continue modest data collection activities during this research project. First, only three of the eight countries from the earlier project have enforced rent controls, making generalization difficult. Second, in one of the countries (Ghana) an opportunity exists to collect improved data and data from two time periods, enabling estimates of dynamic effects of controls. Third, data collection in new countries allow us to tailor the questions asked, e.g., obtaining information on landlord and tenant maintenance, key money, etc., which are not available in many housing surveys. Fourth, in any cross-country study of this general scale the gains from increasing the "degrees of freedom" can be great. Fifth, the new household data will be collected from Ghana, and other existing data is being assembled from Zimbabwe, enabling the project to analyze African housing markets in more detail than has ever been possible. There is a felt need for such analysis. For example, in his comment on this proposed project the Division Chief of West Africa Urban Projects stated:

I hope in formulating any proposal for research, you will focus attention on African case studies... there is need for research at all levels... [and] ...there is some evidence that work in Africa has a greater chance of influencing decision makers.

11/ Data will be collected from other countries to improve calibration of the cross country demand model, results from which will be used as inputs to this study.
With data from Ghana and Zimbabwe this project can respond to this concern. Most of the household survey data required for the cost-benefit analysis is already in hand and ready for computer analysis. Ghana is the exception. A household survey from Kumasi is in hand, which was collected by Graham Tipple in 1981. Anecdotal evidence suggests that given the freeze in controlled rents since that time, despite rapid general price inflation, a re-survey of those households would yield valuable information on the dynamics of the market, including changing key money practices. The re-survey has just been carried out by the University of Science and Technology (Kumasi), under the direction of Dr. Tipple.

In all of the case study markets additional collateral data will be collected, especially time series data such as starts, vacancy rates, and other aggregate supply measures, where available. These are especially important in studying lags in supply side responses to changes in rent regulation where possible.

In addition, a key piece of information for each case study is what quantity of housing each sample household would consume in the absence of rent controls. The cross-country model of Malpezzi and Mayo (1985, Ch. 3) will be extended, using more countries and an improved specification, including a better price term. This improved cross-country model will be estimated by project staff using inputs from each case study market, the 15 cities studied in Malpezzi and Mayo, and data from additional cities as available. Doubling or tripling the degrees of freedom, and improving the specification, will permit improved imputation of long-run competitive rents for case study households. In some markets these will serve as a check for other methods of imputation; in a few markets they may be the primary method of imputation. In addition, the improved precision of the cross-country estimates will have an important spillover effect, as these estimates are currently being used to evaluate past Bank shelter projects and improve the design of current projects (see The Urban Edge, 1985).

Outputs

A separate report will be produced for each market studied, integrating findings on the nine topics just enumerated. In addition, the project will produce a final summary report which will compare results across case study markets, with special emphasis on relating the outcomes (elements 5, 6, 7 and 9, above) to market conditions and variation in the laws (elements 1 and 2).

Task 3: Integrating Case Study Results in A Consistent Housing Market Model

Introduction

The proposed model will estimate the benefits and costs of relaxing or ending rent control of a given type in a given situation. All parts of this statement of purpose are important. Any change in rent control confers both benefits and costs on a variety of interest groups--a
change is never unambiguously good or unambiguously bad. Alternative ways to relax rent control should be considered along with alternative ways to end rent control because relaxation might reap much of the benefits of decontrol but incur only a fraction of the cost. Finally, the result of any change in rent control depends upon the nature of the law being revised and the socioeconomic circumstances in which the law exists—for example, removing controls that have frozen rents in a city with a growing population will have very different effects than removing controls that have allowed rents to increase with inflation in a city with a shrinking population.

Before building such a model, it is useful to speculate on what answers it will yield. In this instance, many qualitative results are easy to predict. Relaxing or ending rent control will (a) increase the amount of housing services in a housing market, (b) increase landlord profits, (c) increase government revenue from property taxes, and (d) hurt some tenants in the short run and help many if not all tenants in the long run.

Housing services from the existing housing stock will increase because the restoration of market incentives will induce landlords to increase housing maintenance and to decrease the removal rate of old housing. Housing services from new housing stock will increase because housing development will be more profitable. Equally important, the proportion of new housing that is non-luxury will increase.

Landlord profits will increase for the obvious reason that rents go up. However, they will also increase for the less obvious reason that in the absence of rent controls, landlords can operate their properties in the most economically efficient way. For example, a $1000 improvement might have a market value of $1100 (in discounted rent increases), but it would be made only if the necessary rent increases are allowed.

Government revenue from property taxes will increase, assuming—as is usually the case—that property taxes are related to real estate profitability. However, the amount and timing of the increased revenue will depend on the specifics of the tax law as well as on the specifics of the rent control law.

Tenants enjoying rent bargains under rent control will obviously be hurt in the short run when those bargains are reduced or eliminated. However, if rent control has existed for a long time, deterioration due to undermaintenance may have reduced housing quality to the point where market rent is not much greater than controlled rent. In other words, there might not be much of a bargain left for tenants to regret losing. In the longer run, absent rent controls, tenants will be free to adjust

1/ Examples of ways to relax rent control are (a) indexing rents to price inflation and (b) temporary vacancy decontrol.

2/ Examples of ways to end rent control are (a) immediate repeal and (b) permanent vacancy decontrol.
their housing consumption and their residential location as their household composition and job location change. No longer will they have to suffer the disutility of a wrong size apartment or a lengthy commute in order to hang on to their rent control bargain.

The proposed model will make quantitative estimates of these qualitative effects. It will show which are larger and which are smaller under alternative modifications of rent control in a given situation.

Modeling Strategy

Model construction will be guided by three principles. First, we will develop a "complete" perspective. All interests—housing, landlords, tenants, and government—will be included and analyzed consistently, and we will use double entry accounting to enforce consistency. For example, the rent increase paid by tenants will be explicitly related to the revenue increase enjoyed by landlords, taking into account the effect of vacancy rate adjustments. Second, we will build "portable" submodels. For example, although the effect of rent control on rent is dependent upon the specific rent control law and market situation, the effect of rent reduction on housing maintenance is presumably similar in all cases. Finally, we will look for "robust" conclusions. Uncertain estimates will be bounded by high-low estimates that can be made with confidence, and attention will be directed to those conclusions that are valid no matter where in the high-low range the true result lies.

Equally important, the model will be constructed with an appropriate degree of modesty. We are attempting a generally applicable model of rent control's impacts not because we think that the state-of-the-art of housing market analysis makes an excellent model possible, but rather because we believe that even a moderately successful model will be of great value when making rent control decisions. Even if the model does no more than credibly distinguish between places where rent control has major effects and where it has only minor effects, the model will justify the resources devoted to its construction.

Overview of the Model

The broadest perspective on the model emphasizes the necessity of starting with a precise definition of the proposed change in rent control, and the necessity of ending with interpretation, evaluation and (possibly) judgmental modification of model output. Any model is only a tool that in knowledgeable hands can be useful. Without careful, critical use, the model will be worse than useless.

An overview of the model is provided by Figure 4. Rent control laws will be defined by the rent increase allowed for dwellings having no change in tenant, and the annual change in rent allowed for dwellings that do have a change in tenant. The demand for and supply of housing in a market will be assessed inter alia by population growth rates and new construction rates. The property tax law will be analyzed to find the relationship between taxes and rent, and the timing of how taxes adjust to
changes in rents. Finally, household characteristics, such as the frequency of moves by demographically defined household types, and the rate of household formation and dissolution by household type will be necessary to completely assess the effect of rent control on tenants.

The housing services output category includes assessment of dwelling quality (as affected by landlord maintenance decision) as well as the number of dwellings (as affected by rates of new construction and demolition). Landlord profits are the present value of rental revenue less expenses such as maintenance and property taxes. Government objectives affected by rent control include property tax revenue, the cost of administering the controls, gross domestic product (as influenced by the construction industry), and foreign exchange (again as influenced by the construction industry). Finally, tenant benefits include rent reductions as partially offset by declines in housing quality, and the disutility of dwellings that have inappropriate characteristics or inappropriate locations for the current household composition or job.

We will measure the disutility of consumption distortions by the amount of extra income that would just compensate the tenants for the nonoptimal dwelling characteristics and/or location.

Figures 5 through 8 outline the core of the model by tracing how inputs flow into submodels and how the submodels lead to outputs. Figure 5 shows the effect on housing services. The rent control law determines controlled rents, and demand for and supply of housing determines what rents would be if there were no control. Together, those inputs determine the change in rents caused by rent control. That rent change, in turn, determines landlord decisions on maintenance and developer decisions on new construction and demolition. Figure 6 shows the effect on landlord profits by adding the influence of the property tax law to the components in Figure 4. Figure 7 shows that the effect on government objectives flows from changes in taxes and changes in the quantity of housing (from which the effects on the construction industry and hence gross domestic product and foreign exchange will estimated).

Finally, Figure 8 shows the effect on tenants. This is the most complex chain of logic in the model. There are three fundamentally different sources of tenant benefits (or costs). First, rent control increases tenant well being by guaranteeing secure tenure to a greater degree than any lease agreement, and by greatly reducing uncertainty about future rents. Second, rent control reduces the price paid per unit of housing services (by reducing rents less than housing quality is reduced by undermaintenance). Third, rent control causes distortions in housing consumption as tenants move less frequently in order to hang onto their rent control bargain.

This model will be an extension of the model constructed by Rydell et al. (1981) for the city of Los Angeles. The model will be parameterized using data generated by the case studies. Table 6 summarizes some of key inputs. The model will ensure that costs and benefits to all agents (landlords, tenants, homeowners, governments) will be consistently analyzed. The modeling effort will produce a set of simulations of the market effects of different methods of decontrol under
Fig. 4 -- Overall structure of the model

- Rent Control Law
- Demand and Supply
- Property Tax Law
- Household Characteristics

Core of Model:
- Housing Services
- Landlord Profits
- Government Objectives
- Tenant Benefits
Fig. 5—Effect on housing services

- Rent Control Law
- Change in Rents
- Housing Services
- Demand and Supply
- Changes in Quantity and Price
Fig. 6—Effect on landlord profits

- Rent Control Law
- Demand and Supply
- Property Tax Law
- Change in Rents
- Changes in Quantity and Price
- Change in Profits
- Landlord Profits
Fig. 7—Effect on government objectives

- Rent Control Law
- Demand and Supply
- Property Tax Law
- Change in Rents
- Change in Quantity and Price
- Change in Profits
- Change in Taxes
- Government Objectives
Fig. 8—Effect on tenant benefits

- Rent Control Law
- Demand and Supply
- Household Characteristics
- Security of Tenure
- Change in Rents
- Change in Quantity and Price
- Change in Mobility
- Consumption Distortion
- Tenant Benefits
alternative market conditions and alternative laws. The report on this task will document and explain the model but, most importantly, it will present outcomes from different situations in a format which will assist in the evaluation of different rent control systems and proposals for changes in those systems. These results will also be important inputs to the synthesis paper described below.

Task 4: Dissemination of Research Results

Much of the dissemination of research results between now and April 1987 will consist of written reports. Table 7 presents a proposed list of project outputs. Each of the three analytical tasks (survey, case studies, and integrated model) will produce written outputs which will stand on their own. An interim report will be written at the end of Phase One which will synthesize the results from Phase One case studies and the broad descriptive survey. The report will serve as the basis for a detailed proposal for Phase Two of the project.

In addition to these papers, the following specific dissemination activities are planned. A final synthesis paper will be written which describes the results of the research in nontechnical terms, and which will present the key results in a manner accessible to project officers in the Bank and our client governments. This paper will be submitted to the World Bank Economic Review. The project final report will be an edited compilation of results from all three tasks plus the synthesis. This volume will be submitted to the Publication Committee of the Bank. The synthesis paper will also be used as the main background reading for a workshop on the results to be given to Bank staff at the completion of the project. The workshop will mark the beginning of an additional effort, funded by the Water Supply and Urban Development Department, to widely solicit the views of Bank staff and management, in light of the research findings, on what the Bank's strategy on rent control should be. This strategy paper—and indeed the process of writing that paper—are an additional key dissemination activity for project staff which will be undertaken upon the completion of the project. Its costs will be borne by the Water Supply and Urban Development Department.
Table 6
Key Model Inputs From Case Studies

I. Rent Control and Related Laws
- coverage
- enforcement
- rent indexation
- treatment of new construction
- treatment of new tenants
- tenant protection
- property tax provisions
- other related taxes

II. Market Conditions
- rental market share
- demographic changes
- level of development
- background inflation
- real growth
- rate of new construction/demolition

III. Households
- observed rents
- estimated equilibrium rents
- mobility rates
- incomes

IV. Structures
- observed rents
- estimated equilibrium rents
- age of structures
- structure type

V. Supply Side
- market responsiveness
- depreciation (net and gross)
- rate of new construction
- maintenance
Table 7

Project Outputs

<table>
<thead>
<tr>
<th>Output</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey of Rent Control Laws and Enforcement Practices</td>
<td>Discussion Paper</td>
</tr>
<tr>
<td>Extension of Cross-Country Housing Demand Model</td>
<td>Discussion Paper</td>
</tr>
<tr>
<td>Case Studies of Individual Markets (Egypt, Ghana, India, Zimbabwe, additional Case Study)</td>
<td>Discussion Paper Study for Each Case</td>
</tr>
<tr>
<td>Integrated Cost-Benefit Accounting Model</td>
<td>Computer Software; Report Documenting Model and Selected Results</td>
</tr>
<tr>
<td>Synthesis Paper</td>
<td>Submit to World Bank Economic Review</td>
</tr>
<tr>
<td>Project Final Report Case Studies, Simulation Results, submit to Publication Committee</td>
<td>Edited Volume of Survey.</td>
</tr>
<tr>
<td>Project Workshop</td>
<td>Bank-wide Seminar</td>
</tr>
<tr>
<td>Presented Key Findings to Project Staff</td>
<td></td>
</tr>
</tbody>
</table>
IV. ORGANIZATION

General Principles

This project's major goal is to produce research results on the effects of rent control which will provide a sound guide for Bank and client policies. To do this requires clear communication between researchers and Bank operational staff, and other sources of information such as local experts on particular markets. In fact such collaboration has already begun; the views of operational staff, and of experts on several rent control regimes, have been solicited during the proposal writing process. Action has already been taken on several valuable suggestions, e.g. highlighting the possible effects of rent control on property tax revenues, aggregating cost and benefit estimates into macro numbers more easily worked into sector work and other analysis, and numerous suggestions on emphasis and presentation. From dissemination activities of previous research on housing demand and finance, we have identified several operational staff members who have a strong interest in this research, and have formed an advisory group. The survey (Task 1) offers an excellent opportunity to identify additional Bank staff and other interested parties who can continue to advise the research project as intermediate results are written up and presented at informal seminars.

The research project will be the responsibility of the Water Supply and Urban Development Department. Stephen Malpezzi will direct the project, in collaboration with Stephen Mayo. They, along with a consultant economist and a researcher, will form the core team who will work on the project at Bank headquarters. The headquarters team will have primary responsibility for (1) the survey of rent control laws and market conditions, (2) the management of the case studies, (3) the execution of some of the case studies, (4) the integrated modeling effort, and (5) synthesizing results in a final Bank report, and (6) disseminating those results.

The case studies will be performed by teams of researchers familiar with the markets under study, and with the data to be used. Table 4 in Chapter 3, above, listed the proposed case studies and the corresponding consultants. Each team will prepare an analysis plan, as described above under Task 2, consistent with this framework and with Malpezzi and Mayo (1986). The case studies will cover the core areas described above, and will provide inputs to the model used to study alternative methods of decontrol.

The integrated model (Task 3) will be developed in Phase Two of the project. It will be written in a portable microcomputer language which will allow research project staff to run additional simulations as necessary to study actual policy situations.
Links to Other Bank-Funded Research

As mentioned above, this proposed research project builds upon earlier research on housing markets conducted under RPO 672-46, Housing Demand and Finance in Developing Countries. The Department staff responsible for that project are also responsible for the proposed project. Summaries of that project can be found in Mayo et al. (1986) and in The Urban Edge (1985).

It is worth noting that the proposed research project will have significant spillover effects. For example, one of the major products of the earlier housing demand research project is a model which predicts housing consumption at different income levels within cities at different levels of development (Malpezzi and Mayo 1985). The model has been parameterized using data from 15 cities in 8 developing countries, and is used to estimate improved "affordability ratios" for urban shelter projects. Data being collected for this research project will permit doubling the number of countries used to fit the model at almost zero marginal cost. If improved forecasts from this model make a single urban project, say, 10 percent more efficient because of better pricing policies, this proposed project will have paid for itself several times over from a spillover effect. Results from the rent control research project will also provide insights on the value placed on different tenure types, housing finance, the spatial character of urban labor market, and other related issues.

The Work Program, and Proposed Timing

The activities proposed for Phase One of this project will take place over a period of 12 months, beginning in July 1986. The approximate timing of principal activities is indicated in Table 6. Work will be initiated in July with the launch of the Task 1 survey effort, data collection from Kumasi, and the preparation of analysis plans for the case studies. The extension of the cross-country demand model will begin shortly thereafter.

After the Task 1 survey and the case study results are described in individual papers, a project interim report will be written which will describe these results, and serve as the basis for Phase Two (additional case studies if required; integrated model and study of decontrol options; and final report). Table 8 also contains a tentative schedule for Phase Two research.
Table 8: WORK SCHEDULE

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>1986</th>
<th>1987</th>
<th>1988</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiscal Year</td>
<td>FY87</td>
<td>FY87</td>
<td>FY88</td>
</tr>
</tbody>
</table>

**PHASE ONE**

Survey Rent Control Laws

Complete pretest and begin survey

Tabulate results and write preliminary report

Follow up and write report

**Case Studies**

Prepare analysis plans

Revise cross-country demand model

Household Survey (Kumasi)

Execute case studies

**Dissemination**

Prepare Interim Report

Submit Phase II Proposal

**PHASE TWO**

Case Studies (if Required)

Integrate Case Studies and Simulate Decontrol

Preliminary sketch Completed

Design and calibrate Model

Draft report

**Dissemination**

Non Technical Synthesis Paper (Final Report)

Edited Book of Case Studies and Other Results
The "market" will usually correspond to a city or metropolitan area. If not, please explain. If market is currently controlled, answer all questions. If not controlled, answer questions 1 to 9, 28 to 33, and 35 to 38. If necessary, use best guesses so that as many questions as possible are answered, but put an asterisk (*) beside answers that may well be wrong. Place comments in margin where appropriate. Elaborate on a separate sheet if necessary. If a question requests an interval answer, but you happen to know a more precise figure, check off the interval and write the figure in the margin.

**I. Market Conditions**

1. **Population**
   
<table>
<thead>
<tr>
<th>Option</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 500,000</td>
<td></td>
</tr>
<tr>
<td>500,000 to 2,000,000</td>
<td></td>
</tr>
<tr>
<td>More than 2,000,000</td>
<td></td>
</tr>
</tbody>
</table>

2. **Annual population growth rate**
   
<table>
<thead>
<tr>
<th>Option</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 2 percent</td>
<td></td>
</tr>
<tr>
<td>2 to 5 percent</td>
<td></td>
</tr>
<tr>
<td>Over 5 percent</td>
<td></td>
</tr>
</tbody>
</table>

3. **Per capita income in 1984 U.S. dollars for (check one) city/market or country**
   
<table>
<thead>
<tr>
<th>Option</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 500</td>
<td></td>
</tr>
<tr>
<td>500 to 1,500</td>
<td></td>
</tr>
<tr>
<td>1,501 to 5,000</td>
<td></td>
</tr>
<tr>
<td>Over 5,000</td>
<td></td>
</tr>
</tbody>
</table>
4. Rate of general price inflation, average over last 5 years
   ___ Less than 10 percent per annum
   ___ 10 to 20 percent
   ___ Greater than 20 percent per annum

5. Proportion of all housing that is private rental
   ___ 1/3 or less
   ___ 2/3 or less (but more than 1/3)
   ___ Over 2/3

6. Proportion of all housing that is public sector or directly subsidized
   ___ Less than 5 percent
   ___ 5 to 15 percent
   ___ More than 15 percent

7. Relationship between new construction and population growth over last five years
   ___ Housing starts have more or less exceeded population growth over the last 5 years
   ___ Housing starts and population growth have been roughly in line
   ___ Starts have not kept up with population growth

8. Current rental vacancy rates (including formal and informal sectors)
   ___ Tight market (vacancy rate less than 3 percent)
   ___ Moderate (3 to 6 percent)
   ___ Loose market (greater than 6 percent)

9. Are rents currently controlled in any significant markets in this country?
   ___ Yes
   ___ No

Note: All questions which follow pertain to this market, i.e., the place listed at the first line of the form.

10. Has this market been under rent control anytime during the last 10 years?
    ___ Yes
        ___ No
II. Details of Rent Control Law

11. Is any part of the residential rental market currently under rent control?
   ____ Yes (go to question 12)
   ____ No (go to question 31)

12. Is there any "sunset provision" or indication that this law will be lifted or repealed at a specified date or under some specified market condition?
   ____ Yes (give details)
   ____ No

13. Proportion of rental housing that is controlled
   ____ 1/3 or less
   ____ 2/3 or less (but more than 1/3)
   ____ Over 2/3

14. Start of rent control
   ____ Before 1950
   ____ 1950 to 1959
   ____ 1960 to 1969
   ____ 1970 to 1979
   ____ 1980 or later

15. Date when major features of current law were all in place
   ____ Before 1950
   ____ 1950 to 1959
   ____ 1960 to 1969
   ____ 1970 to 1979
   ____ 1980 to later

16. Please give a brief chronology of rent control laws.

17. Are rent control laws perceived to be enforced?
   ____ Yes, vigorously (go to Q. 19)
   ____ Yes, but selectively
   ____ No
18. If rent control laws are not vigorously enforced, check off perceived reasons

- Insufficient enforcement resources, court backlog
- Fines, penalties insufficient
- Officials do not choose to enforce

19. When current law was introduced, controlled rents for existing stock were set at

- Their current market rents
- Rents ____ years previous (fill in blank)
- Initial rent at time of construction
- Percent of historical value at time of construction (give percentage)
- Percent of market (give percentage) when law introduced
- Other (describe briefly)

20. Rent for sitting tenants

- Rent frozen
- Annual increase, less than general price inflation
- Full indexing to general price inflation
- Rents determined by "rate of return" formula
- Other (describe briefly)

21. Initial rent for new tenants

- Same as for old tenant
- New rent, but allowed increase is capped by an administrative formula
- Market rent
- Other (describe briefly)

22. Do monthly rents actually paid usually correspond to legal rents for controlled units?

- Yes, for most units
- Yes, but with significant exceptions (describe briefly)
- Rarely

23. Is key money (initial lump-sum payment from new tenant to landlord) widespread?

- Yes, many tenants pay (more than 30 percent)
- Some tenants pay key money (10-30 percent)
- Not widespread (less than 10 percent)
24. Do other forms of key money exist in this market?
   ___ Landlords pay sitting tenants to leave unit
   ___ New tenants have sometimes paid original tenants to leave
   ___ Deposit of key money is sometimes (partially) returned to tenants when they vacate
   ___ No

25. Check off any legal grounds for evicting current tenants
   ___ Nonpayment of rent
   ___ To upgrade unit
   ___ Owner takes personal possession of unit
   ___ Other legal grounds (describe)
   ___ No legal grounds for eviction
   ___ Eviction is not prohibited by law

26. Treatment of new construction
   ___ Controlled, initial rent set below market rent by administrative formula
   ___ Controlled, initial rent set at market rent
   ___ Not controlled

27. Treatment of upgraded units
   ___ No change in controlled rent
   ___ New rent, but set below market rent
   ___ New rent set by market, but future increase subject to controls
   ___ Unit no longer controlled

28. Has a past promise, in a rent control law, to exempt new construction ever been broken in this place?
   ___ Yes
   ___ No (go to Q. 30)

29. If the answer to Q. 28 is yes, how many years passed between the time the promise was made and when it was broken?
   ___ Less than 5 years
   ___ 5 to 15 years
   ___ Over 15 years

30. Is the rent control currently scheduled to end at a given date, or being phased out over time by some mechanism such as permanent vacancy decontrol?
   ___ No
   ___ Yes
31. Are commercial or agricultural properties subject to rent control?

___ Yes, commercial properties
___ Yes, agricultural properties
___ Yes, both commercial and agricultural properties
___ No (go to Q. 33)

32. Are these controls enforced?

___ Yes, vigorously
___ Yes, but selectively or partly
___ No

33. Check off any of the following laws which exist

___ (1) restrictions on sale of units
___ (2) land price controls
___ (3) restrictions on land transactions
___ (4) controls on building materials
___ None (go to Q. 35)

34. Of the above laws which exist, circle the numbers of those which are:

Vigorously enforced (1) (2) (3) (4)
Selectively or partly enforced (1) (2) (3) (4)
Not enforced (1) (2) (3) (4)

III. Details of Property Tax Law

35. Proportion of local government revenue (including intergovernmental transfers) from property taxes (residential and commercial)

___ Less than 20 percent
___ 20 to 50 percent
___ Over 50 percent

36. Assessments as a percentage of market value

___ Typically less than 20 percent
___ 20 - 50 percent of market value
___ 50 - 80 percent
___ Over 80 percent
37. Local mill rates (range) (a mill is one-thousandth of assessed value).
   ___ Less than 5 mills
   ___ 5 to 10 mills
   ___ 11 to 20 mills
   ___ 21 to 30 mills
   ___ More than 30 mills
   ___ ___ to ___ mills (fill in)

38. Who (legally) pays taxes on rental units?
   ___ Landlords
   ___ Tenants

If the answer to Q. 11 was yes (part or all of the residential rental market is controlled), answer Q. 39. If the answer to Q. 11 was no (the residential market is uncontrolled), skip to Q. 40.

39. Are residential assessments based on controlled rents?
   ___ Yes, rental units only
   ___ Yes, both rental and owner-occupied units
   ___ No, market rents or values are basis of assessments for both tenure types

40. How often are residential units reassessed?
   ___ Every 5 years, or more often
   ___ Every 6 to 15 years
   ___ Rarely (more than 15 years, on average, between assessments)
   ___ When properties are sold or exchanged

41. Are commercial and/or agricultural assessments based on controlled rents?
   ___ Yes, rental units only
   ___ Yes, both rental and owner-occupied units
   ___ No, market rents or values are basis for assessments for both tenure types

Source of this information, person(s) or document(s):

Potential sources of additional information:
Additional Comments:
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