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INSTITUTIONAL ANALYSIS OF HOUSING PRODUCTION: A PRELIMINARY EXPLORATION

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HOUSING PRODUCTION

BUILDING CONCEPT

BUILDING DESIGN

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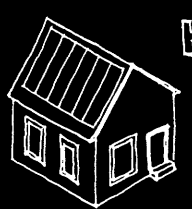
DISTRIBUTION

CONTINUING TEAM SELECTION



HOME SWEET "PHOTOVOLTAIC" HOME

ABSTRACT

This paper is one of a series resulting from institutional analysis of photovoltaic acceptance. It presents an initial inquiry into the housing production process, assuming a private sector perspective. Combined with other papers in this series, it forms a basis for institutional analysis of the DOE-HUD Solar Heating and Cooling demonstration program. In this paper the housing production process is characterized by six stages:

* Building Concept -- the generation of an idea
* Building Design -- establishing uses, designs, specifications
* Building Finance -- price estimation and obtaining funds
* Construction -- actual physical production
* Service and Occupancy -- maintenance, management, repair, improvement, additions
* Distribution -- sale, resale, refinance.

The final element, team selection, involves choosing persons and/or organizations appropriate to complete each aspect of housing production; it occurs throughout the process. Each of the stages is discussed, noting activities, actors, and constraints.

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INTRODUCTION

This paper is one of a series resulting from institutional analysis of photovoltaic (PV) acceptance, undertaken with sponsorship of the US Department of Energy as part of its Photovoltaic Program. It is an initial exploration into the production of housing, taking a private sector perspective. With this particular focus on housing, this paper is a companion to several others also completed as part of PV institutional analysis activities. These other papers deal with government involvement in housing (McDaniel and Nutt-Powell, 1978) research and socialization aspects of housing (Furlong and Nutt-Powell, 1978), standard setting (Parker and Nutt-Powell, 1978), and residential energy provision (Reamer and Nutt-Powell, 1978). Each of these five papers is an element of the first steps in the methodology of institutional analysis. A brief summary of applicable theory and method is found in the following paragraphs. A more complete discussion is found in another paper prepared for this study (Nutt-Powell *et al.*, 1978).

An institution can be defined as a discernible entity that carries or is the repository for social meaning. Institutions are characterized by function (finance, regulation, research, etc.); activity (marketing, analyzing, legislating, etc.); and role (vendor, linking pin, translator, etc.). There are six types of institutional entities: formal and informal organizations (the Department of Commerce, a pick-up softball team); members (a GE executive); persons (John Doe); collectivities, whether known or unknown to members (the Taxpayers' Revolt); and social orders (the importance of good design). Institutional entities combine and interact to form an institutional arena.

Within this arena, exchanges occur between and among institutional entities. These exchanges create a pool of information, resources, and social meaning. Institutional analysis tries to define how and in what forms these pools are created, advanced, maintained, and/or changed.

Innovation is a deliberate and substantive alteration of the institutional arena. Information is vital, for it is the currency of innovation acceptance; and it is of two types: (1) technical: What do you trust?; and (2) personal: Whom do you trust? Exchanges within the institutional arena exhibit one or both types of information. Because institutions are stability-seeking and routine-establishing, they are considered to be "risk averse". Innovation creates the condition for risk by disrupting social meaning. Rather than attempting to maximize benefits (which would support rapid acceptance of innovation), the institutional arena tends to minimize risks (which leads to resistance to the quick adoption of innovation).

Institutions are more likely to accept an innovation (i.e., institutionalize it) if their information about the innovation is personal rather than technical, since such exchanges are more likely to link to routine, stable meaning, thus creating some condifence that risk has been minimized.

There are seven steps in conducting an institutional analysis:

(1) identify the sector (i.e., economic, geographic) to be studied; determine study objectives;

(2) prepare a preliminary sector exploration -- an overview that could be applied to any such sector as well as material that is location specific;

(3) construct an hypothesized arena;

(4) identify the "perturbation prompter";

(5) devise the specific research design;

(6) monitor perturbations;

(7) analyze the institutional arena.

This paper is an initial exploration of the housing production process, taking the private market perspective. Subsequent papers will complete the institutional analysis effort with specific focus on the DOE-HUD Solar Heating and Cooling (SHAC) demonstration program. This paper presents the housing production process as consisting of six stages: building concept; building design; building finance; building construction; service and occupancy; and distribution. An activity characteristic of each stage is team selection. The paper discusses each stage in turn, presenting the characteristic activities, actors, and constraints of each stage.

HOUSING PRODUCTION

Over $50 billion per year are spent in the US on purchase, rental, and maintenance of housing, and another fifty billion dollars goes to utilities, furniture, and other housing expenses. Residential land and structures account for one third of our national wealth. New private-sector residential construction amounts to $25 billion per year.

Even though construction is one of our largest industries, it is not a centralized one (such as the automobile industry, in which a handful of major companies control production); most firms involved in building are relatively small local concerns. Therefore, to determine institutional entities in housing production, we will have to look at many small-scale participants who combine to create the whole.

In most industries, a product is manufactured and then shipped to the consumer. For the construction industry the product is primarily fixed, and the means of production (equipment, materials, and labor) are mobile. While most manufacturers produce identical copies of the same product or products, the result of construction is unique in each situation. Furthermore, when a construction project is complete, the production team is broken up. Indeed, its composition changes throughout the production process. The short-term nature of the industry leads to problems for its participants, who need to have a steady source of income, and to its suppliers of equipment, materials, and services, who need to predict the demand for their product.

The volume of construction undertaken at any time of the year is both

cyclical and seasonal: cyclical in that it depends on investors' whims, the general state of the economy, political decisions, and geographical distribution; and seasonal in that weather constrains the type and amount of work that can be done. This cyclical/seasonal quality of construction work affects all aspects of construction, from the architect to the common laborer, and breeds a certain amount of inefficiency and insecurity.

In most cases, the initiator of a construction venture has skills and capabilities adequate to complete only a portion of the tasks in housing production. He relies on those people he has engaged ("the production team") for their specialized knowledge and training in the industry. He takes a chance on their integrity and abilities. For this reason -- and because of the aforementioned uncertainties in the industry -- much of the process of engagement of a specialist's services is related to reputation. Because of the fragmented nature of the building industry, reputation is founded on personal contact and travels, and on word-of-mouth within a relatively small area; accreditation is important in only a limited set of instances. (Trade and professional associations offer lists of their members, sometimes accompanied by lists of their accomplishments and recommendations or qualifications. Each association has a code of ethics to which their members are bound to adhere or be expelled). Thus, not only is the building industry precarious economically, but its organization is highly decentralized and disaggregated, and its operations are primitive in comparison with the efficient technologies of contemporary industrial production. Housing production is risky and individualistic: the last bastion of the classic entreprenuer.

Building construction can be thought of as advancing through several stages (See Table 1). Throughout these stages, certain actors have more important roles than others. At each stage, there occur constraints on production activities. Some actors are involved in several stages, while others play only minor roles in one. For purposes of this paper, we will define six sequential stages:

(1) Building concept -- the generation of an idea for a building to be produced

(2) Building design -- the establishing of uses, designs, and specifications

(3) Building finance -- price estimation and obtaining funds

(4) Construction -- the actual physical production

(5) Service and occupancy -- preparation and actual use, with continuing modifications of the building

(6) Distribution -- sale and subsequent resale and refinance.

The final recurring element is team selection, an ongoing (and to a certain extent repetitive) process of deciding upon the best persons for each element of the job. The stages, actors, and constraints are represented in Table 1. The remainder of this paper is devoted to a discussion of each of these stages.

STAGES, ACTORS, CONSTRAINTS

IN THE HOUSING PRODUCTION PROCESS

	ACTORS	CONSTRAINTS
BUILDING CONCEPT *the generation of an idea*	DEVELOPER ARCHITECT ENGINEER PLANNER CONSULTANT	ZONING LAW USER NEEDS MARKET CONDITIONS
BUILDING DESIGN *establishing uses, design, specifications*	DEVELOPER LAWYER REAL ESTATE BROKER TITLE COMPANY ARCHITECT ENGINEER SURVEYOR PLANNER CONSULTANT ZONING & PLANNING OFFICIALS	REAL ESTATE LAW RECORDING REGULATIONS & FEES BANKING LAW ZONING LAW SUBDIVISION REGULATION PRIVATE DEED RESTRICTION PUBLIC MASTER PLANS
BUILDING FINANCE *price estimation and obtaining of funds*	LENDING INSTITUTIONS FHA/VA MORTGAGE COMPANIES INSURANCE COMPANIES INDIVIDUALS PENSION FUNDS REIT'S/MIT'S	BANKING LAW FHA/VA STATE LAW GNMA/FNMA
CONSTRUCTION *physical production*	DEVELOPER CONTRACTOR SUBCONTRACTOR TRADE UNIONS MATERIALS MANUFACTURERS & DISTRIBUTERS BUILDING CODE OFFICIALS INSURANCE COMPANIES ARCHITECTS ENGINEERS	RULES OF TRADE AND PROFESSIONAL ASSOCIATIONS BUILDING & MECHANICAL CODES SUBDIVISION REGULATIONS UTILITY REGULATIONS UNION RULES INSURANCE LAW MATERIALS TRANSPORT LAW
SERVICE AND OCCUPANCY *maintenance, management repair, improvements, additions*	DEVELOPER LENDERS MORTGAGE COMPANY MAINTENANCE FIRMS PROPERTY MANAGEMENT FIRMS INSURANCE COMPANIES UTILITY COMPANIES TAX ASSESSORS REPAIRMEN UNIONS ARCHITECTS ENGINEERS CONTRACTORS SUBCONTRACTORS ZONING & BUILDING OFFICIALS MATERIALS SUPPLIERS REAL ESTATE BROKER	PROPERTY TAXES INCOME TAXES HOUSING & HEALTH CODES INSURANCE LAWS UTILITY REGULATIONS UNION RULES ZONING LAW BUILDING AND MECHANICAL CODES MATERIALS TRANSPORT LAWS BANKING LAW RULES OF TRADE & PROFESSIONAL ORGANIZATIONS
DISTRIBUTION *sale and subsequent resale and refinance*	DEVELOPER REAL ESTATE BROKER LAWYERS LENDERS TITLE COMPANIES FHA/VA/PRIVATE MORTGAGE/INSURANCE COMPANIES BUYER	RECORDING REGULATIONS & FEES REAL ESTATE LAW TRANSFER TAXES BANKING LAW TAX LAW
TEAM SELECTION *a continuous choosing of actors*	DEVELOPER ARCHITECT ENGINEERS CONTRACTORS FINANCERS	DEVELOPMENT REGULATIONS RULES OF TRADE AND PROFESSIONAL ORGANIZATIONS

TABLE 1

BUILDING CONCEPT

The generation of an idea for a building can come from a variety of sources -- from a developer, and architect, an engineer, a planner, a consultant, and so on. While the need for housing can be identified by any or all of these sources. (For example, a planner may cite the need for a particular type of location of housing in the course of a regional housing market analysis.) The crystallization of a building concept and its identification as an active project are typically undertaken by the actor defined as the *developer*.

Because housing in the US is essentially a private sector activity, the critical factor in making an idea an active building concept is the readiness of an actor to take a financial risk. It is this characteristic that we use to distinguish the "developer". (It is possible for many of the other actors to be the "developer"; what is important here is to understand the essential financial commitment necessary for the housing porduction process to begin.)

Developers range from private individuals to large public or private organizations. A developer can select an architect or contractor to do his planning and implementation for him, or he can do most or all of the design and construction himself. Within market limitations, the private developer can more or less build to his own needs, with the only legal restrictions being building codes and zoning laws. The public developer (at federal, regional, state, county, or municipal levels, including semi-autonomous authorities) is regulated by public law, whether general or

specifically relating to the particular agency, and has less latitude in the selection of a contractor and a financing agency, the type and size of the project, and so on. The developer is responsible for the acquisition of land, the selection of the architect and/or general contractor, the inspection of ongoing work, and the payment of bills. He can make changes at will and can exercise control over the character of the project and the details of construction. In most cases, the developer has veto power during all phases of the housing production process. Although the developer usually is advised or counseled by the architect, contractor, builder, and so on, his influence over the final product can be absolute. The critical factor is direct financial risk.

The developer does not work in a vacuum. The single most influential constraint is market conditions. Given financial risk, a proposal that does not survive initial scrutiny for marketability will proceed no further in the housing production process. In addition to this assessment of general market conditions each proposal is subject to an increasingly detailed analysis to determine which particular portion of the potential market is most attractive and viable, what housing attributes that housing market seeks (referred to as "user needs"), and the extent to which those needs can be met given public regulations, notably zoning regulations. If the initial indications are favorable (that is, if they produce a willingness on the part of the developer to take financial risk), the housing production process will proceed to the next stage.

BUILDING DESIGN

The building design stage focuses on establishing definite uses, design, and production specifications. The range of actors increases, as do the number and nature of constraints. (At this point the issues associated with "Team Selection" assume central importance. These will be discussed in some detail later.) In the building design stage the concept is made specific. The uses are clearly identified in the "building program". The physical design is reduced first to schematic, and then to working drawings. These latter identify the specifications to which the building will be constructed. Issues such as comfort, economy, use of space, and adaptability for subsequent users (who may have different needs and/or tastes) are resolved. An important element limiting such a design solution are the various constraints (many of them public laws or regulations) which the design must accommodate.

When the developer has decided to go ahead with a project, he selects an architect to interpret and modify his ideas. The architect produces one or more sets of alternative designs, along with budgets and time schedules for construction and occupancy. He reviews building codes and zoning laws, and studies any enviornmental issues. The architect monitors bids from contractors, and is also responsible for the contract documents (drawings, specifications, general conditions, supplementary conditions, and owner-contractor agreements). During construction, he acts as the owner's agent

to administer contracts, to provide checks on quality and conformance, to authorize payments to contractors, and to verify completion. The architect, as an artist, is concerned with aesthetically pleasing design; as a craftsman, with durability; and as a businessman, with economy. Thus the architect must respond to several actors and constituencies.

Neither the developer nor the architect have in-depth knowledge of all of the aspects of building design. In more technical matters (for example: structural stability; acoustical, mechanical, or electrical systems; or landscaping), the architect relies on the services of other specialists, notably consulting engineers. Such specialists conceive and design the building components (such as HVAC systems) and guarantee that they are properly and economically constructed. For example, when post and beam was the principal mode of construction, convention and years of experience told the architect how to design a structurally sound building. Now, when dealing with something like prestressed concrete beams, every member of the structure has to be specially designed. Similar problems arise in many aspects of design: where to put the expensive and space-consuming equipment for air conditioning; how to design with earth or solar-related temperature control; how to relate interior and exterior environments; how to design communications and transportation (e.g., elevators, escalators) systems; and how most effectively to design and install lighting systems; and so on. Among the engineering services which are frequently employed are civil (including surveying), structural, mechanical, electrical, acoustical, and sanitary. Other specialists

who are often engaged include landscape architects and interior designers.

These specialists can be employed in any of four aspects of design: preliminary investigations, building programming, schematic design, and design development. Services provided may include: individual consultations (to assist in legal proceedings for instance), preliminary and feasibility investigations, cost studies, economic comparisons, planning and environmental studies, appraisals, valuations, rate studies, financial guidance, management and production engineering, inspection and testing of apparatus and equipment, operational services, surveying, mapping, soil mechanics studies, and foundation engineering. The results of these services are conveyed by conferences, graphic representations, written reports, plans, specifications, and models.

In addition to the actors directly involved in physical design preparation, a series of other actors supply infomation and advice pertaining to design constraints. Foremost among these are attorneys, public officials, and brokers. The first two groups are typically concerned with the various legal constraints on building development. Attorneys advise a developer on alternative approaches permitted within laws and regulations, while public officials tend more toward identifying what is excludable by law or administrative regulation. One of the more complex aspects of the housing production process is the range of discretion permitted public officials in enforcing statutory mandate, and critical to housing production is the design of a strategy for attaining public approvals, an activity to which

attorneys and other consultants make significant contributions. Brokers focus on providing current information about market conditions, a crucial variable in determining the financial feasibility of the project. Both brokers and attorneys also provide advice on financing arrangements, a factor to be anticipated during the design phase. (It should be noted that attorneys, like engineers, tend to develop specialities, such as tax or real-estate law.)

TEAM SELECTION

Housing production is never a one-person job. It involves a number of actors, few of whom participate throughout the entire process, but each of whom has some formal connection to the project at one or more stages. The issues of team selection are first apparent and important at the building design stage. The activities associated with the building concept stage can be completed entirely by the developer; indeed, it is possible for an individual to negotiate this stage successfully. However, all subsequent phases include a broad range of activities, involving several actors who must be combined in "teams" related to the specific project for each stage. (This is true even if the project is to be completed entirely "in-house", as the particular blend of skills changes with the problems attendant on each project.) Typically, the developer plays the primary role in team selection, especially where the particular team member has significant responsibility. The typical and most basic team is Developer-Architect-Contractor. As a project becomes more complex, additional primary team members --(such as consulting engineers)-- are added. The architect may assume responsibility for the selection of engineers. (Many firms are combined architectural and engineering ventures, dubbed "A&E" firms.) The contractor usually has responsibility for selecting sub-contractors, the labor force, and materials, although various constraints (notably union hiring practices, rules of trade, and public regulations) limit his discretion in selection.

Depending on the scale and nature of the project, the financing source

may be an active team member. The developer usually makes the initial overtures on financing though the nature of team membership on the part of the financing source is often determined by the source, rather than the developer, a consequence of finance being a dominant variable in housing production.

Except in cases where the owner and/or user is also the developer, neither usually has a role on the team. The increasingly frequent exception to this norm is when the housing is produced in the context of public policy realization (e.g., urban renewal) where regulation or practice dictates a user (direct or proxy) team membership.

BUILDING FINANCE

Few developers have the personal resources to fund their projects fully. Thus, it is almost always necessary to obtain project financing. In many respects, finance is at the heart of the housing production process, since, as has been noted earlier, a primary motivation for all such projects is profit. (This is true even in public sector housing programs, which utilize various financial incentives (subsidies, grants, tax treatments, and so on) to prompt initiatives by the private sector. (See McDaniel and Nutt-Powell, 1978.) Consequently, the section on building finance which follows will examine activities at this stage in some detail.

Activities at the building finance stage routinely follow the following pattern:

(1) Money is accumulated by a financing source, through investments or deposits;

(2) This money is made available to finance building projects;

(3) As a building project design reaches a reasonable degree of completion, money is sought by developers;

(4) A specific financing application is submitted;

(5) The application is reviewed (credit review, appraisals, marketability, and so on);

(6) The application is acted on (approval/revisions/disapproval);

(7) Financial commitments are made (temporary, as in construction financing; or permanent, as in mortgage financing);

(8) The money is expended in construction;

(9) Repayments are made.

This pattern is relatively constant, whether the individual seeking financing is the potential owner-occupant of a single-family home, or the developer of a several hundred unit apartment complex. The differences are in the detail of information required for the application, and the nature of the financial commitment. The most significant differences occur not in the steps of the financing process, but among the lenders involved in the process.[1]

Some basic characteristics define real estate lenders. The different types of lenders would answer the following questions in different ways:

What is the reason for charter?

Is mortgage investment the main means of finance?

Is liquidity of significant importance?

What is the radius of influence?

Are loans self-initiated or placed through a broker?

What kind of mortgages are financed?

What are terms, interest rates, and percent of value financed?

What is the size of activity?

Each type of organization has different reasons for being in the mortgage market, and demonstrates a different method of transacting business. Because of this variety of motive and method, most companies cooperate, rather than compete, in the search for appropriate investments.

In understanding the significance of the questions listed above, one must consider all the implications of the answers. Mortgage investments for example, may not take up the greatest percentage of investment funds in some organizations. But if the total volume of investment dollars is significantly large, such organizations still have a large influence on the industry. For instance, a large commercial bank with assets of 10 billion dollars, and which invests only 30 percent in mortgage finance, still contributes three billion dollars to the mortgage industry; while an average savings and loan association with five million dollars in assets, though investing 80 percent in mortgages, contributes only four million dollars. Liquidity (or the ability to convert assets into ready cash) can be looked at in much the same way. A commercial bank can be required to maintain 70 percent liquidity, which could again limit mortgages to only 30 percent of total assets. But one can see that this bank may still contribute more than a smaller savings and loan association, even though the latter has a much smaller requirement for liquidity. A commercial bank is not chartered primarily to help the mortgage market, as is a savings and loan association, but they do deal with mortgage investments to help the community or long-time customers.

In the following section, single-family residence is considered to contain from one to four units. Multi-family housing (five or more units) is usually considered income property; its financing is typically obtained differently. The basic conditions of a loan are the term (length of finance), the interest rate, and the percentage of appraised value of the property that will be financed.

SAVINGS AND LOAN ASSOCIATIONS: Savings and loan associations (S&L's) provide the largest source of funds for mortgage investment. In 1977, the mortgages held by these associations totalled over $308.4 billion, or about 47 percent of the total of all mortgage-lending institutions. In fact, only 20 percent of an S&L's funds may be placed in non-home mortgages. Savings and loan associations are also referred to as homestead associations, building and loans, cooperative banks, savings association, and building societies.

Savings and loans associations were first organized in 1831, to enable members to pool their resources and help each other finance the purchase of homes. At first, the members would buy shares or pay dues until a substantial fund was established. Then the bidder who was willing to pay the highest discount, or who drew the right lot, or who had been on the list of loan applicants the longest, was given the loan. Originally, these were two kinds of organizations: terminating and serial. A terminating organization had a fixed group of members, and the association terminated when its purpose was fulfilled. A serial organization was a group of terminating organizations.

A landmark in the history of savings and loans was the initial involvement of the federal government. In 1932, the Federal Home Loan Bank (FHLB) was established to provide a national credit reserve for the local thrift and home financing associations. Beginning in 1933, the S&L's could be federaly chartered. In 1934, the Federal Savings and Loan Insurance

Corporation was founded to insure savings (up to $5,000 originally, and up to $40,000 presently) and to instill confidence in the savings and loans associations.

Today S&L's are one of two types -- either permanent capital stock or mutual associations. In the permanent capital stock arrangement, each shareholder owns a part of the association and receives dividends on the investment. In a mutually-owned savings and loan, all members are part owners, and the net income (after operating expenses are met and a reserve has been established) is distributed to the members on a *pro rata* basis. The FHLB sets a ceiling on dividend rates. Reserves provide funds for dividends in times of reduced earnings. Withdrawals are usually granted on request, but associations typically reserve the right to ask for 30-60 days notice before disbursing funds.

Savings and loan associations are usually limited to a 100-mile radius of influence, and are most often restricted to their state boundaries, although some have provisions allowing 20 percent of investment to occur outside of their service area. The average S&L is worth about 96.3 million dollars, but there are a number of larger organizations (including at least one giant holding firm worth one and one-half billion dollars). Half of the industry's volume is generated by 500 firms with over 35 million dollars apiece in assets. In 1977, there were 2758 state-chartered associations with $197.4 billion in assets, and 2012 federally-chartered associations with $261.9 billion in assets.

The usual sources of funds can be divided into five categories: the sale of bonds, repayments and prepayments, loans from the FHLB, the savings of shareholders, and the sale of mortgages. Income from the sale of bonds is trivial, but repayments are a large source of income. Re- and pre-payments account for a least half of the money for mortgage investment. The FHLB allows S&L's to use existing mortgages as collateral for loans from the bank to get more funds for mortgages. The FHLB stabilizes the real estate market, i.e., S&L can borrow when the market is active and repay when the bank sees profits -- to prevent excess funds.

In terms of volume, however, FHLB borrowing is of secondary importance. Shareholder's savings are the single most important source of funds. However, not all of these funds are available for use, as a certain liquidity must be maintained to permit withdrawals. The sale of mortgages to other lenders does not lead to a larger volume of loans, but does allow for diversification of the S&L investment portfolios. The ability to secure funds, and the ability to put those funds to work, are the principal factors in the growth of S&L's.

The lending decisions of saving and loan associations are usually in the hands of a loan committee in the case of small loans, and the board of directors or the executive committee generally is responsible in the case of large sums. The types of loans made are diverse, with special terms and amounts to be financed set for each type. The most frequent loan is for a single-family unit, providing terms of up to 30 years at 80 percent of value.[2]

Savings and loan associations also make multi-family, commercial, land, leasehold and unsecured (e.g., home improvement) loans. Because of the specialization in home loans and the 100-mile radius restriction on lending, S&L's gain extensive local knowledge which allows them to lend to borrowers when other lenders are not able to service effectively.

MUTUAL SAVINGS BANKS: Mutual savings banks (MSB's) were originally organized as "thrift" associations to encourage savings. For this reason, they offer high interest rates on deposits and are eager to buy mortgages. The depositors collectively own the MSB, though it is run by a board of self-perpetuating trustees. Although there are MSB's in sixteen states and Puerto Rico, thee-quarters of MSB assets are in New York and Massachusetts.

Mutual savings banks place a substantial portion of their assets into residential real estate. Distributed by type, the loans granted by MSB's are approximately 50 percent residential, 25 percent apartment houses, 15 percent conventional home loans, and 10 percent nonresidential loans. A single-family residential loan can be made for up to 90 percent of value (in Massachusetts, up to 80 percent of value with no limit, up to 90 percent of value with $75,000 limit, and up to 95 percent value with $60,000 limit). These loans are amortized with terms up to 30 years, or three-quarters of the remaining economic life of the property. They are usually limited to the home state or surrounding states. Multi-family and income property can be financed for up to 80 percent of value, and for up to 25 years. There is a limit -- ususally 65-70 percent -- on assets that can be used for mortgage finance.

Mutual savings banks will invest outside their area to take advantage of competitive yields and the safety of FHA/VA guaranteed loans. Thus, within the constraints of type and proportion of investment, MSB's have relatively portable funds. Mutual savings banks have been very active investors in FHA and VA loans: in 1970, they invested $15.9 billion in FHA and $12.2 billion in VA loans, the latter amount making MSB's the largest investors in VA loans. Out-of-state lending is usually attractive when the amount of conventional lending is often confined to state boundaries. Out-of-state loans are divided into two categories: forward commitment or immediate delivery. Both of these types of loans are usually purshased from mortgage companies, who retain servicing. At the end of 1970, out-of-state mortgage holdings exceeded $20 billion. Some MSB's have state-wide member-owned-and-organized companies to assist in acquisition and servicing of mortgages. Examples are the Institutional Securities Corporation in New York, and the Massachusetts Purchasing Group in Massachusetts. There are also organizations similar to the FHLB (in New York, the Savings Bank Trust Co., and in Massachusetts, the Mutual Savings Central Fund, Inc.).

COMMERCIAL BANKS: Commercial banks are basically stock companies. They are either nationally or state chartered. A bank with a national charter is administered and regulated by the Comptroller of Currency, and is considered to be an "instrumentality" of the federal government. State-chartered banks are, of course, regulated by the chartering state. Although state banks have always been able to initiate mortgage loans, national banks could not enter the mortgage market until the Federal Reserve Act of 1913.

Commercial banks receive deposits of savings from their investors. These savings can be either demand (checking) or time (savings) deposits. Only time deposits are usable for finance activities. (National banks were authorized to receive time deposits around the turn of the century.) Certificates of deposit are fixed, typically large deposits which, because the depositor commits the deposit for a specified duration, yield higher interest on a longer term, higher interest basis. There are about 14,000 commercial banks, several with assets over $10 billion. In 1971, commercial banks' assets were close to $550 billion.

Commercial banks currently are the second largest source of mortgage loans. Because of the high pressure for liquidity caused by withdrawals from both time and demand deposits, only about one eighth of the banks' assets are used for mortgage loans. These banks cannot lend the greater of 70 percent of time deposits of 100 percent of invested capital. Commercial banks are the most conservative of the residential lenders; they loan mainly as a service to their regular customers. They are also conservative with regard to percentage of value financed (65 1/2 percent on the average) and maturity (22-year terms on the average). The amount of money loaned per bank varies (below the legal limits) in keeping with bank policies. Mortgage loans are mostly short-term, but they are appealing, as they offer high yields for time-deposits. In the average commercial bank, 30 percent of savings deposits are used to finance mortgages. Most lending is done locally, but the establishment of branch offices expands the loan area to entire states.

Just as important as the financing of mortgages are the other supplemental functions of commercial banks. (The numbers of mortgage loans fluctuate as much as several hundred percent per year. Given the volume, shifts in the numbers of loans made by commercial banks affects yield, terms, and demand for other lenders.) Commercial banks act as originators and servicers of resold loans, make construction loans, and "warehouse" loans for real estate companies. They will lend funds for mortgages if the resources are not available elsewhere, but if funding can be otherwise arranged, they tend to loan their money in other ways. Commercial banks offer more liberal terms, finance larger projects and have a larger volume of construction loans than do S&L's. In fact, these banks are the major source of construction funds for development in the United States. Warehousing of loans provides funds for mortgage associations to initiate mortgages because of the time lapse between the purchase of a mortgage and sale to the final investor. Because FHA/VA loans do not count in the legally restricted mortgage total, regular long-term FHA/VA loans are popular with commercial banks.

LIFE INSURANCE COMPANIES: Life insurance companies were at one time the second largest lenders in the mortgage industry, although competition from S&L's has significantly lessened their role today. There are about 1500 insurance companies in the US, and approximately 80 companies have over $1 billion apiece in insurance assets. It is these large companies that do most of the mortgage investing.

The companies with the largest assets are in the Northeast, but the greatest number are in Texas, Louisiana and Arizona. Significantly, the insurance companies' investment are not limited to local areas. FHA/VA loans can be made for distant purchases because of federally-mandated regulation and inspection of the parcel or building. The life insurance companies purchase mortgages for the benefits of their policyholders, and not the borrowers; most do not initiate their own loans. These companies offer low interest rates to their borrowers, but have a limited scope of investment. The mortgage investment breakdown of insurance companies is approximately 25 percent on commercial/income property, 35 percent on high-priced, new or fairly recently built homes, and 40 percent on government-insured or guaranteed loans. Insurance companies prefer to invest in income property rather than single-family mortgages, and are in fact the largest holder of multi-family mortgage debt. Liquidity is not a major concern, so the investment pattern can be thought of as depending on *need* and *return*. "Need" refers to a means of disposing of large amounts of cash. (Premium income is steady, and therefore insurance companies always make investments.) "Return" means simply that if mortgages offer a bigger percentage of profit than stocks and bonds, then the investment money will go into mortgages.

Life insurance companies are either corporate or mutually owned. All are state-chartered, and are regulated by the state of charter as well as by any other states in which they operate. State regulations limit life insurance companies' investments in real estate, mortgage loans, purchases of common

or preferred stock, purchases of corporate bonds, unsecured loans made to unincorporated small business, foreign securities, and out-of-state life insurance companies.

Most funds for investments come from the sale of policies, that is, money from premiums or from reinvested dividends. The outflow of money mainly goes to benefit claims and policy loans. This inflow and outflow of capital is fairly steady and minimizes the need for significant amounts of cash-on-hand. Since money needs can be predicted, life insurance companies usually make forward commitments to mortgage companies or similar firms.

The life insurance companies acquire customers for loans using three principal avenues: correspondents, branch offices, or home office acquisitions. In the correspondent system, a company or broker originates loans for the insurance company portfolio. The broker usually services the loan, and receives a fee at the outset as well as a closing and servicing fee. Some companies maintain branch offices in several areas to set up and initiate loans. A small company may initiate loans from their home office. Many companies, however, do not have the means or expertise to initiate and arrange their own loans, so the correspondent method is very widely used.

Insurance companies can lend to practically anyone. However, state laws regulate loan activities with regard to the value of the loan, the number and type of loans, and asset investment limits. Life insurance companies usually loan around 66 to 75 percent of value in amortized single-family loans. Joint venture investments concerning several companies are popular.

(One example is the John Hancock Building in Chicago.) A group of insurance companies participate in the Urban Investment Program, to which billions of dollars are jointly pledged for programs for urban housing, jobs, and community service investments.

MORTGAGE COMPANIES/MORTGAGE BANKS: There are approximately 1000 mortgage companies in the US, ranging in size from small local concerns to companies initiating from $200 million to over $1 billion in mortgages. These companies initiate 15 to 20 percent of all new loans. The mortgage companies act as loan or investment finders. Once a loan is arranged and the contract drawn up, the loan is sold to another permanent lender. The mortgage broker is essentially a go-between who receives a fee from the borrower and the lender.

Mortgage companies were originally established to help insurance companies find mortgages in which to invest. Today, pension funds, college endowment funds, and other investing institutions who do not have the staff or real estate knowledge to initiate their own loans, deal with mortgage brokers. These companies are important for their geographical diversity. Mortgage companies are organized under the coporation laws of the state, and are usually privately owned (although some are affiliated with or at some time merge with a bank). Since the firms are largely unregulated, some states have instituted mortgage company licensing laws in order to keep up a minimum standard. Because of the safety of FHA/VA loans, these are the most popular type of loans originated for sale to the institutional lender, especially those out-of-state. The mortgage company usually services any loan that it has originated, regardless of the client to whom it has been sold.

The mortgage companies serve as a bridge between the primary and secondary mortgage markets. (For a discussion of mortgage markets, see McDaniel and Nutt-Powell, 1978.) They also help to redistribute money from high-capital areas to low-capital areas, largely through the sale of FHA/VA loans. Their principal mode of operation is to receive some sort of commitment for and amount of loans to be purchased. These commitments can be either allocation or direct commitments. In the case of the allocation commitment, the investor specifies a certain amount of money for the mortgage company to spend (although not all the money has to be spent). In the direct commitment, the mortgage company is obliged to deliver loans to the exact amount and of the type specified by the investor. Since an investor begins to lose money when his investments have not been made as agreed, the terms of the direct commitment are much more stringent than the allocation commitment. As mortgages accumulate, they are warehoused with a local bank. The mortgage company earns a profit in various ways. It receives a one percent origination fee, a three-eighths to one half of a one percent servicing fee on those loans sold with servicing retained, a profit if the mortgage is sold at a price higher than the origination price, and indirect compensation from large escrow deposits maintained by the mortgage company with regard to loans serviced.

Additional activities of mortgage companies include land purchase and development and construction loans. These commit the developer to putting the permanent loan in mortgage company hands, and a one to two percent-of-loan-amount charge is assessed if the permanenet loan goes elsewhere. These loans also help to fill the gap between the start of construction and the final insurance and guarantee of the loan.

The mortgage company also handles "stand-by commitment" -- i.e., it receives advance commitments from lenders and in turn issues commitments to builder and construction lenders for a final take-out loan. Additional responsibilities of mortgage companies are income property loans, building leasing and property management, land development, the construction of commercial properties, insurance activities, real estate brokerage, and real estate investment trust involvements (see next section).

REAL ESTATE INVESTMENT TRUST/MORTGAGE INVESTMENT TRUSTS: Real estate/ mortgage investment trusts (REIT's or MIT's) provide for property ownership vested in a trustee, and for the issuance by the trustee of transferable shares of beneficial ownership in the trust and trust property. This arrangement allows the small investor to invest in large projects, and also allows for transfer of capital throughout the country. In 1960, Public Law 86-779 gave the REIT's and MIT's special tax benefits, making them attractive investments. Under the provisions of the law, the trusts distributed 90 percent or more of their income, they are taxed only on retained earnings at corporate rates, with beneficial shareholders only being taxed on the money distributed by the trust.

Although the original intention of the REIT was to involve the small investor in large-scale investments, large institutions are still the prime investors in these projects. Equity trusts are involved in the ownership of real property with or without mortgages (commercial property, residential

or industrial real estate, vacant land, or leaseholds). Most of the trust income is rental income, which benefits from inflation and suffers from population shifts and serious recessions. Depreciation on real estate is passed on to the shareholders as a tax shelter. Assets are fairly fixed and not liquid; part of the funds are used for capital expenditures and working capital.

Mortgage trusts (MIT's) are involved in investments in mortgages or other liens against real property. They are interested primarily in construction or development short-term mortgage loans and, to a lesser degree, in certain FHA/VA first mortgage loans. Mortgage trusts also deal with warehousing of loans, standby commitments for first mortgage long-term loans, gap commitments, wrap-around mortgages, second mortgages, sale-leasebacks and sale-contract-backs, home improvement mortgage loans, vacation and second home mortgages, and FHA multifamily loans. Profits are realized through interest earned and discounts received during the terms of mortgage loans they have financed. Mixed trusts deal with equity purchases and short-term construction loans, and all depreciation can be used and offset against mortgage income. Specialty trusts are established to provide low-cost capital from one corporation to another (such as the relationship between Marriott Inn Participating Investors and Marriott Inn Franchises).

The advantages of both types of trusts are a pool of funds, diversity of investments, and a degree of liquidity through the trading of shares on the stock exchange. The trusts are administered by advisory companies (usually

designated by the trust) since the trusts by law cannot manage their own properties. To prevent control of the trust's activities by one person, restrictions are placed on one person's degree of influence. Ownership of 35 percent or more of the trust's shares precludes an individual from ownership of 35 percent or more of the stock or voting power in the advisory company.

PENSION FUNDS: The first pension plan was started by the American Express Agency in 1875, in an effort to reduce turnover of employees. During World War II, wage and price controls were established in most industries. This sparked a boom in employee benefits, such as pension funds, that would attract and keep workers. There are four types of pension funds: insured funds, administered by life insurance companies; federal pension funds, encompassing the assets of old age and survivors' insurance, civil service retirement funds, railroad retirement funds and disability insurance funds; state and local government employee's retirement systems, which in 1969 totalled about $51.6 billion; and noninsured corporate pension funds, which in 1969 totalled $100 billion, about one-half more assets than mutual savings banks. The latter two types are sources for mortgage fund investment.

The state and local pension funds hold most of their assets in corporate bonds, treasury obligations, and state and local government obligations, with about 10 percent of the funds invested in mortgages. These mortgages are mostly FHA Title VII "Capehart" mortgages, on military housing which are

FHA insured and guaranteed by the federal government, and are usually limited to their own state. Because of the inexperience of the trustees, most funds stay out of the mortgage market except for the relatively safe FHA/VA loans.

Noninsured corporate pension funds have been called the greatest untapped source of new mortgage funds in the US. These funds are administered by selected or elected employees of the individual corporation and management, and investment responsibility is placed in the hands of the trustees. The trustees are authorized by a trust indenture, which creates the trust and sets up the mechanics of fund receipts, investments, and benefit payouts. The trustees are either investment counselors, individuals, or commercial banks. Because the trustees usually possess some knowledge of the mortgage business, they do not consider investments in mortgages as great a risk as do the trustees of state and local pension funds. Some firms specialize in pension fund investments (such as Morgan Guaranty Trust and Bankers Trust Company, which account for 25 percent of commercial bank trusteeship accounts, or 40 percent of total pension fund assets).

In 1958, corporate bonds were the largest source of investment for pension fund money, but at present, common stocks are more popular. Mortgages account for less than 5 percent of total investment. (It should be noted that pension funds are exempt from income and capital gain taxation.) In the bonds-versus-mortgage question, there are advantages and disadvantages associated with each option. FHA/VA loans yield one-half to one percent over AAA rated corporate bonds, and one and one-quarter to two and one half percent over

municipal government long-term bonds; in addition, the FHA/VA loans are guaranteed investments. However, mortgage investments require knowledge of the real estate market, and mortgages require document inspection, and also show returns in small monthly payments that have to be reinvested. Along with residential investment, pension funds invest in FHA insured multifamily investments (up to 40-year terms but less yield than single-family units), sale leasebacks (yield on investment high and security is usually good), and office buildings, shopping centers and industrial property loans. In the future, should pension fund investors become interested in GHMA mortgage program loans (which require no special knowledge or documentation and provide a full guarantee), there may be more pension funds channeled to the mortgage investment market.

INDIVIDUALS: A small percentage of mortgage loans (usually less than 10 percent) is made by individuals. These are usually small loans that are paid off rapidly. Individuals often make purchase money contracts (second mortgages) and consumer and family loans. Such lending is largely unresearched and unregulated, with terms and conditions being highly variable.

One method of individual financing that is used increasingly is equity syndication. In brief, the owner/developer "sells" a limited partnership position to one or several investors (the syndicate). In return, the limited partners receive the benefits of the tax losses of the project. This is the so-called "tax shelter" associated with real estate, and especially with income-producing property.

Profits in real estate can be generated by cash flow or by tax losses. The generation of benefits through tax losses has brought about this new source of investment funds for the builder-developer. Equity syndication allows high-income taxpayers to buy the right to receive sheltered cash flow and to claim tax losses through a building project.

Tax shelters in residential rental properties work in two important ways. During construction, the Internal Revenue Code allows some expenses to be deducted. Since expenses are incurred during a period of little or no income, they create losses which can be used by the project's investors to offset income from other sources. After completion, losses generated by the project (whether actual losses, i.e., expenses exceeding revenues, or those resulting from taking depreciation allowances, as described below) also provide a tax shelter.

Depreciation is a calculation of the extent to which a building loses value by virtue of aging and use. Though not an out-of-pocket expense, depreciation losses can be claimed as such for tax purposes. The use of accelerated depreciation accentuates these losses in the early years of a project's life. These losses allow the investor to see tax-free cash flow, as well as tax losses, that can shelter other income for several years after completion. The marketing of these tax losses (by the developer to a high-tax bracket investor) is called equity syndication. In brief, individuals in high tax brackets prefer to pay $10 to a developer to obtain $20 in tax losses, thereby realizing $10, than pay $20 in taxes to the government.

A typical equity syndication venture proceeds as follows:

(1) A builder-developer finds a site on which to build a multifamily residential housing project

(2) He obtains zoning, sewer and other public utility approvals

(3) He has construction plans and specifications drawn up

(4) He obtains a construction loan and arranges for a permanent loan

(5) He arranges for construction to begin

(6) Either the real estate or an option to buy is transferred to a limited partnership. (Usually the builder-developer retains a one to five percent ownership interest in the project as a general partner.) In exchange for 95-99 percent ownership interest in the partnership, the investors come up with enough capital to allow the partnership to reimburse the builder-developer for any cash expended in the project but not recoverable from the mortgage, plus any money that may be needed beyond that obtained from the mortgage (except for construction cost overruns) to complete the project, including a sizeable fee for the builder-developer. The limited partners are not liable for any debts or obligations of the partnership, and only risk the money they have invested. They thereby obtain 95 to 99 percent of the tax losses of the project, thus sheltering their income from other sources.

CONSTRUCTION

The construction process relies mainly on contractors, subcontractors and their laborers, and the labor unions. Materials for construction are obtained from material distributors. Inspections are conducted by building code officials, insurance officials, architects, and engineers, who insure conformance to laws and specifications.

Once the design is complete and financing obtained, the developer enters into an agreement with a contractor. The contractor is usually the overseer and supervisor of the progress of the construction. The contractor is responsible for coordination of the construction in order to assure the delivery of a properly completed structure within a specified time and cost. He manages equipment, services, storage of material, and on-site construction.

The contractor must have a thorough knowledge of his field, which can be obtained through apprenticeship, education, and practical experience. (Many contractors also find business training helpful.) He must possess a fundamental knowledge of engineering and architecture to be able to cooperate with designers. Frequently he must design temporary structures (e.g., towers, cableways, scaffoldings, temporary bridges, or storage bins) to assist in construction. He must be familiar with construction codes, safe practices, and labor problems. He must know appropriate techniques of labor efficiency and mechanization, and must be able to make cost projections and predict future market trends. He must make recommendations concerning the suitability of a method, style, or innovation in design.

Most contractors have a partial work force which they always employ. This force may include carpenters, laborers, operating engineers, construction teamsters, iron workers, masons, and so on. Beyond this the contractor must obtain labor and services from local unions and subcontractors, who are sometimes contacted through a broker.

The subcontractor ("sub") can be thought of as a specialty contractor. He must have the same capabilities as a contractor, but on a smaller and/or more specialized scale. The subcontractor concentrates on services, as plumbing or electrical wiring, which require specialized knowledge. Like the contractor, the sub is familiar with the engineering, design, cost, and labor considerations in his field. Unlike the contractor, the sub is not bound to the owner. He is hired by the contractor and paid by him. Often, because of bidding practices, the subcontractors are hired by a succession of different contractors.

Building design has historically been dependent on materials at hand. However, because materials are more easily moved today, regional construction materials have declined. As tastes have become more catholic and materials more available, dealers whose job it is to obtain and distribute materials have become important actors in the construction stage of the housing production process.

Many types of building materials are produced by large companies (Weyerhauser, Johsn-Manville, and U.S. Gypsum, for example), but unlike other industries, these large producers do not dominate their own fields of production. Many

materials are produced by non-housing giants such as General Electric, Westinghouse, U.S. Steel. Raw materials often come from large corporations such as DuPont, Dow, and Monsanto, and are produced as finished products by smaller firms.

The local supplier has a certain amount of influence on the construction industry in his area. Since he does not usually manufacture the product that he sells, his main interest is in what products are in demand in his area. He is able to influence that demand, to some degree, by controlling the nature and price of what is made available. The supplier keeps an eye on changes in materials, equipment, and the market in general. In some cases, the dealer assists the contractor and subcontractor by extending credit during the construction. Therefore, the dealer is usually a trusted and close associate of the other principals in the building process. Some materials are installed by the dealer, plumbing being a frequent example. Since he must warehouse his products, overproduction is a concern. Though the manufacturer usually bears the expense of research, development, and promotion of a product or material, the dealer's personal contact and rapport with the other principals is essential.

The final implementation of the details of the design lies in the hands of the construction workers. A list of types of construction workers includes:

brick, stone and tile workers
carpenters
masons
electricians
glaziers

lathers
painters
plasterers
plumbers and pipefitters
roofers
sheet metal workers
structural iron workers.

Many craftsmen gain experience in their field through apprenticeship programs, but there are at least as many casually-trained craftsmen as those who go through apprenticeships. Although some types of construction (such as small residential building) can survive without unionization, most larger enterprises rely on the union labor pool.

Seasonality is an especially important concern to construction labor. On the average, out of 2080 hours possible (40 hours per week for 52 weeks) the construction worker works about 1400 to 1600 hours. Consequently, construction workers insist that hourly wages must be high in order to provide a reasonable annual income. In the northern regions of the country the effects of seasonal unemployment are greater, and the exterior trades (such as roofing) suffer more than do the interior trades (such as plastering).

The union is a powerful entity in the construction world. Since many workmen shift from job to job, and because employment is arranged through the union, the worker is loyal to the union rather than the employer. Most workers deal with state or local unions. The locals deal with the contractor and subcontractor, decide who gains admittance into the union, set dues, and carry on the apprenticeship programs. Union rules are concerned with the quality of work, the health and safety of the worker, the maintenance of high

wages, and bargaining power. Additional rules are devised to make work, restrict outside help, and spread work to combat seasonality.

The union member seldom confronts an employer with a grievance; most often, he goes to his steward and the union business agent to seek redress. The steward is actually a laborer appointed to help the union. He is the immediate representative of the union, and represents the worker in the grievance procedure. The business agent is an employee of the union who is engaged to run its affairs. He sees that disputes are settled quickly and fills orders from contractors for workers. He ensures that only union members are hired, and monitors jurisdictional disputes, wages, working conditions, and complaints. The business agent is a powerful figure, who often exercises control over both union members and contractors. He can subdue opposing workers by giving them poor positions and long layoffs. Through his efforts, a worker may have his card "pulled" for infractions (making him unable to work at his chosen vocation). The agent can control contractors, too, by sending good workers, second-rate workers, or none at all. The business agent also represents the union to the public and to the national union. Should a business agent be considered out of line, the membership can refuse (collectively) to listen to him.

Because of the insecurity of labor in construction, the unions (and workers) are often reluctant to deal with change and innovation. Each new method or material introduced can require a redefinition of the roles of several crafts. Corrugated metal roofing, for example, is a material that

might bring on a jurisdictional dispute. As the material comes into use, the roofers can claim that its installation is under their jurisdiction, since the material is a roofing material; steel or sheet metal workers, on the other hand, can claim responsibility for installation because the material is metal. As a result of these types of problems, unions tend to resist innovations.

In addition to those workers directly involved in construction, a variety of actors are involved in monitoring and regulatory roles. Some inspect the work for the developer, determining that the building is constructed according to specifications. Foremost among these is the architect. "Change orders" are approved at the initiation or with the concurrence of the project architect. Other principals involved in the design stage also participate in construction monitoring, notably engineering consultants. Similarly, a variety of public regulatory activities occur during construction, including inspections concerned with conformaning to building codes.

SERVICE AND OCCUPANCY

Conventional wisdom tends to view the housing production process predominantly (if not solely) in terms of the creation of a physical structure, perhaps because of the high visibility of the design and construction stages. Yet because the central motivation in housing production is profit, the physical structure is in many respects only a means to an end. As the initiation of a housing project is prompted by a positive assessment of marketability, so too do the concluding stages of the housing production process depend on this basic interest. Only if the housing is occupied will it be able to return a profit. Though this issue may seem secondary during the middle stages of construction, it provides the basis for the "go-no-go" decision at each of the preceding stages, and is the central factor in the concluding stages of housing production.

As we have indicated marketability is a key parameter in building design, finance, and construction; after construction is completed, short-term and long-term marketability remain central.

At this stage, an important distinction emerges between sales and rental housing. In sales housing, the role of the developer will end with transfer of title to the owner, who assumes responsibility for all subsequent use and disposition of the unit. In rental property, the developer most often retains the controlling financial interest. (If not, controlling interest passes to a new owner, whose motivations are in most respects

interchangeable with those of the developer.) Thus, there exist several reasons for the developer to be attentive to the operation of the housing, as ongoing marketability and profitability demand as much planning and attention as the construction process.

Typically, the developer will turn to yet another specialist in the housing field: the property management firm. (As in earlier stages, it is possible that this may be an "in-house" skill.) Indeed, it is probable that consultations on housing operation will have occurred during the early stages of the housing production process. At the service and occupancy stage, detailed plans for "rent-up" and ongoing operation are developed, including contingency plans, should original market analyses prove inaccurate.

The "shake-down" of building operations occurs during the rent-up phase. Typical construction contracts have provisions specifying contractor responsibility for various aspects of structural adequacy. Even though the building may have received its certification for occupancy from public sector inspectors (typically a health or building department employee), this demands only reasonable health and safety standards. The developer's interest obviously goes beyond this threshold of housing decency. Thus, construction contracts often have warranty periods, some extending over several years; contracts may have "hold-back" provisions on a portion of the contracted amount, providing for payment only after a specified period following occupancy, or on acceptance of the structure by the developer. In addition

to these financial controls, several of the professionals involved in building design and construction (notably the architects and engineers) have legal liability for their work.

During the rent-up phase, the property management staff gains familiarity with the structure, and becomes able to assess more realistically plans for ongoing maintenance and repair. The operating budget for an income producing property typically includes calculations covering vacancies, and sets aside reserves for routine maintenance (such as interior painting) and major repairs (such as plumbing). In some cases the property management firm hires its own maintenance staff; in other instances, this responsibility is assigned to a maintenance firm. Various ongoing relationships are established with companies whose activities relate to ongoing service and occupancy, including the permanent lending source, utility companies, tax assessors, various specialized repairmen (plumbing, electrical, roofing, painting, carpentry, and so on), materials suppliers, and the like.

It is possible that major renovation and/or additions to the structure will be undertaken at some point during its life. When this occurs, a sequence of activities takes place roughly comparable to that which led to the production of the housing initially. An important difference, of course, is that the developer possesses a much more detailed knowledge about the nature of the housing and its potential market.

DISTRIBUTION

In the same way that service and occupancy tend to be ongoing processes of rental housing, the distribution stage tends to continue for sales housing. That is, for "sales" housing, as opposed to rental, sale and occupancy is the conclusion of the first complete cycle of the housing production process. Though many of the construction completion activities are comparable for these two types of housing, the nature of marketing is different. In sales housing, there is no ongoing relationship between actors in the earlier phases and the new owner (except in the case of condominiums, which have characteristics of both sales and rental housing). Rather, there is a single, conclusive sale, with the new owner assuming responsibilities for initial occupancy, maintenance, repair, improvements, and so on.

Where sales housing is being produced in sufficient volume (perhaps ten or more units on the market at approximately the same time), the nature of the production process is likely to be similar to that of rental housing, involving the cast of characters discussed earlier. The additional actor at this stage is the real estate broker (or developer's sales staff), who coordinates the direct marketing, and, together with attorneys, lenders, and title companies, supervises the "closing".

In low-volume production of sales housing, however, there will be fewer persons involved in the process, and those involved will typically be making only marginal time commitments to the production of any given unit. The single exception to this will be the builder. (This term is

typically applied to small contractors who handle personally all stages of the development process.[3] The builder devises the building concept, completes the design (often using a packaged-design, modified on site during the construction stage), obtains the financing (usually arranged through an ongoing financial relationship with a commercial bank, since the basic financing needed is for construction), directs all phases of the building's construction, prepares it for occupancy, and completes the sale. Given the low volume and the vagaries of the market, it is easy to see why the builder's business is so precarious.

After the sale of a new dwelling unit, it remains in the hands of the new owner until again placed on the market. Typically, the resale is handled by a real estate broker, though occasionally an owner will sell a home directly. In addition to resale, refinancing occurs as part of the distribution stage. Refinancing is used to obtain additional funds, using the dwelling as collateral. Such funds are often used for housing additions or improvements, though they may be used for many purposes. Refinancing is possible if equity has built up as the result of payments against principal, or if the value of the property has appreciated. In either instance, the loan conditions prevailing at the time of refinancing will obtain. Typically, refinancing will occur with the lending source holding the property mortgage, though it is possible to finance with an entirely new lending source.

NOTES:

[1] The discussion that follows in the text of this paper considers finance from a private-sector perspective. For a discussion of finance from a public-sector perspective, see McDaniel and Nutt-Powell, 1978.

[2] Loans may be at a higher proportion of value if insured, either through public (e.g., FHA, FaHA, or VA) or private (e.g., MGIC) sources.

[3] Forty percent of construction firms build 10 units or less annually.

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