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APPENDIX II: PART G

REPORT OF THE WORKING GROUP ON CONSTRUCTION WEALTH

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PREFACE

The Working Group on Construction Wealth met first on September 4, 1963, and again on February 12, 1964. A fairly detailed report had been prepared in the interim which formed the basis for discussion at the second meeting. As a result of discussions at the second meeting, a new draft report was prepared and circulated to the members of the working group.

Not all members of the working group attended both meetings or reviewed both drafts. In particular, a number of additional members were added to the working group after the first meeting. The list of working group members following the title page includes all persons who participated at all in this project. Dissenting comments and additions are included as footnotes. However, final responsibility for the following report rests with the chairmen.

Other persons who attended meetings of the working group and made helpful suggestions included John W. Kendrick, David J. Hyams, and Joel Popkin of the Wealth Study. Insights as to how the leasing industry operates were provided, through interview, by Bernard Schwartzman of Schwartzman Associates, Washington, D.C.

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CONSTRUCTION

I. General Objectives

THE WORKING GROUP

The Working Group on Wealth in the construction sector is charged with advising the main committee and staff on the Wealth Inventory Planning Study on the most suitable approaches to measurement of wealth assets of the construction sector, insofar as specialized knowledge of that sector is required. The working group was selected primarily from representatives of industry, trade associations, and Government, whose unique positions provide strategic insights to the pertinent issues. The group membership is presented on page ii of this report.

THE MAIN OBJECTIVES

The more specific general objectives include the following:

(*a*) Determining potential data uses and users of wealth data on the construction sector.

(*b*) Determining the practical data objectives of a wealth inventory of the construction sector.

(*c*) Reviewing and appraising available data.

(*d*) Determining the proper parameters of the construction sector with respect to data objectives, feasibility of measurement, and compatability with the goal of measuring wealth in all sectors of the economy without overlap.

(*e*) Assessing the probable characteristics of wealth assets employed in the construction sector, and relative significance for measurement.

(*f*) Determining and analyzing the special problems that will exist with respect to proper and adequate measurement of the construction sectors wealth assets.

(*g*) Making recommendations, in the light of the foregoing considerations, as to suitable approaches to the measurement of the wealth assets of the construction sectors, including suggestions of reasonable alternatives.

II. Potential Uses and Users of Construction Sector Wealth Data

EXISTING USES

Since, with a few exceptions, almost no wealth data exists on the assets of the construction sector, there obviously is very little use of such data. One notable exception appears in the highway and road building areas. Periodic surveys by both the Bureau of Public Roads and by the American Road Builders Association have been conducted for various purposes—most often to determine capacity for expansion

with respect to proposed highway programs. The information collected is primarily related to the types of equipment, age, and capacity. Some dollar valuation data also are being obtained.

Equipment manufacturers make their own estimates and projections of equipment stocks, with respect to activity and future market expectations. These must be based on fragmentary information, and are likely to be quite crude and inaccurate.

Trade publications are known to have made crude surveys from time to time to demonstrate that their subscribers buy such equipment, and, therefore, provide a suitable advertising media for manufacturers.

The Bureau of Labor Statistics, in its labor input studies, attempts to determine the costs allocable to equipment usage (rental or depreciation costs) per thousand dollars of contract for various types of construction. This is a capital consumption figure and may not quite qualify as wealth data, but wealth data might have future use in such studies. The present figures are derived from fragmentary information, combined with knowledgeable judgments.

GENERAL USES

Wealth data have very little use, in their present state, except as a subject of academic curiosity. A great deal could be said about their potential usefulness by a variety of users—but little can be said along these lines which is unique to the construction industry. Potential uses common to all sectors, and uses in general economic analysis have been well covered in appendix I, part A. There is little need to duplicate here. However, many potential uses cannot be foreseen until the need arises. Some added general uses mentioned below may help supplement the staff paper:

If one of the chief uses of wealth data is in policy formulation, as by the Federal Government, then it likewise follows that its use is equally important to those who hope to influence policy formulation. This would include, for instance, nonprofit research foundations, and universities. It would include also private business firms and trade associations, and theoretically at least, consumers. As often as not, the findings of these groups are as influential in Federal policy formulation as is the Government's own initiative.

But of equal importance is the growing demand for sound economic planning in the private sector. Wealth estimates which would become a basis of improving productivity measurement would contribute to developing a sound factual foundation in collective-bargaining issues between labor and management; to forecasting; to policy on allocation of resources and research. The productivity area is particularly neglected in the construction industry due to the lack of adequate information.

Construction equipment producers and material manufacturers are sorely in need of data which would permit better analysis of their markets—both short and long term.

Construction firms could likewise utilize data which would permit an analysis of their operating efficiency with respect to size of firm, investment and renting policy, substitutions of capital and labor, etc.

It would seem essential that wealth data collected in the construction sector meet the test of usefulness for business purposes as well as for

Government policy formulation, if any significant collection expense is to be justified.

Some other possible uses in addition to those mentioned above could include the development of operating ratios and standards, analysis of opportunities for new product development, evaluation of IRS guideline life expectancies, estimates of capacity expansion potential, etc.

It is, of course, difficult to forecast the full range of potential uses of wealth data on the construction sector. Much depends on the ability to relate such information to other data.

Without elaborating here, it is appropriate to point out that the data gaps—both quantitative and qualitative—in basic economic intelligence on the construction industry are substantial. Thus, it would be misleading to suggest that wealth data, per se, had a very substantial priority among the needs for this sector. This is particularly so if the data cannot be collected or presented in a way that is compatible with important parts of the existing body of data.

III. Data Objectives

WEALTH DATA NEEDS

Data which would merely provide a general estimate of wealth of various general forms, but which fails to identify other important aspects, would be of marginal usefulness. Both national policy and practical business utilization require that the data be somewhat detailed. In particular, it is important to identify the industry of use as well as the industry of ownership. (A great deal of heavy equipment is leased in the construction industry.)

One aspect of the need for detail is the desirability of aggregating for comparability with other available data. While it may be necessary to aggregate by SIC industries, it should also be possible to aggregate also by national economic accounts, or, more important—according to the concepts and definitions of the construction industry itself as represented by existing statistical series.

REQUIREMENTS FOR WEALTH DATA BY THE CONSTRUCTION INDUSTRY

Requirements necessarily relate to both the potential users and the potential uses. As previously stated, it is difficult, if not impossible, to forecast what these might be in the future. The need for many types of data often doesn't become apparent until the data are actually available and analyzed. An example of this is shown by the components of change data developed in the national housing inventory in 1956. Although there was a vague understanding of the kinds of changes which occurred in the existing housing inventory, almost no one had anticipated the substantial extent of such changes. That lesson would suggest that statisticians, economists, and market analysts should tend to seek all of the useful details which can be reasonably obtained—even though not in obvious current demand—so long as new vehicles for data collection are not required, and the detail does not make the cost so high as to endanger the project.

The need for detail by sector has been mentioned in connection with the need for different data combinations for use with various other data series. Maximizing the collection would improve the quality of year-to-year revaluations, and perhaps reduce the need for frequent surveys. For instance, if equipment items are separately identified, future changes might be traced through shipments, transfers, and scrappage, so as to form a basis for a perpetual inventory wealth estimate.

The following constitute the five major types of details to be sought:

1. Details on the SIC industry type; e.g., probably at the four-digit level, to break out construction activity outside the contract construction sector, per se. Industry code 2433 (prefabricated wooden buildings and structural members) would provide a key data cell, for instance, in evaluating measurements of the use of wealth assets in construction process. The progressive transfer of construction processing to the manufacturing and other sectors is important in producing sound data, as well as evaluating the effects of this change.

2. Regional details would also be important. Labor input studies by BLS have revealed significant regional differences in the mix of labor, materials, and equipment in contract construction. There are important problems here, though, as construction equipment is mobile and many contractors are multi-State, nationwide, or worldwide operators.

3. Asset types. In addition to the separation of financial assets, land, buildings, and equipment, it would be desirable, if feasible, to identify equipment in very substantial detail. This is needed because of the problem of rapid obsolescence, as well as for other reasons.

4. Asset characteristics. For equipment it would be desirable to have data on quantities, sizes, capacity, age and life expectancy, maintenance costs, rental costs, operator requirements (or some measure of productivity per man-hour), etc.

5. Evaluation details. It would be desirable to have evaluation data of several types—including book values, market values, original cost basis, depreciation allowances—and perhaps some basis for capitalization of earnings. This will be difficult to handle.

It is particularly important in the construction industry to obtain information on wealth assets *used*—irrespective of the industry of *ownership*. Leasing and/or rental of major equipment items is apparently common. Another detail which is possibly desirable is an inventory of options. Separate options both for extension of leases and for purchase of leased equipment are quite common in connection with long-term equipment leases. This type of option generally has a value much greater than the amount required to exercise it. Another type of option is possibly of greater importance, and this is the option on land which is in common use among operative builders. Almost nothing is known about the latter, but it may represent a significant claim on wealth assets.

GOVERNMENT USE

Data on the amount of equipment and other capital used in the construction industry will be of relatively little value to the Government or anyone else if it is just one overall figure. But as a basis for judgments as to productivity, changes in productivity, capital attached to

the industry, trends in efficiency and use of capital, and the amount of capital required to expand the construction industry, such data would be valuable.

It has been assumed by many that productivity is low and is improving only slowly in the construction industry. The construction industry accounts for about 11 percent of the total GNP and the value added by the on-site construction operations themselves is possibly in the order of 45 percent of total construction activity. The trends in efficiency and in capital requirements of 11 and 5 percent of the activity of the country is important enough to affect allocation of resources. If construction is becoming more efficient, there will be a trend toward more construction activity though not necessarily toward greater expenditures for construction. Judgments as to labor and capital requirements in the construction industry are an important part of the Department of Labor's projections and should have a bearing on decisions on tax policies and Government policies affecting highways, as well as housing, urban development, and metropolitan planning as a whole.

PRIVATE USE

Private use of data of the sort we are discussing would be more specific in some respects and more difficult to describe in others.

Producers of construction equipment are woefully ignorant of the stock in the hands of contractors and others doing construction operations. As a result, orders tend to fluctuate relatively sharply. When business starts to pick up, contractors order too much. When business levels off, contractors' orders drop too much. The production of construction equipment varies far more than does the construction activity itself. So inventories in the hands of contractors tend to fluctuate and, of course, employment among the firms turning out equipment fluctuates, too. Data which would help production firms to gage stocks in the hands of builders, and the requirements for the coming year would be useful. It would help leasing and rental firms as well as help production firms.

SOME USEFUL DETAILS

Many of the potential uses depend, of course, on the nature and extent of detail. Few useful judgments could be made about the function of investment in the construction industry on the basis of value data above. Information is needed on—

(*a*) Types, age, and capacity of equipment items.

(*b*) Utilization rates by type (some highly specialized machines may be used only infrequently—as needed).

(*c*) Lease or rental versus ownership practice re various types.

(*d*) Forms of organization (legal, relationships to other firms, etc.).

(*e*) Obsolescence factors—rapid innovation in machines in obsoleting much equipment before it would otherwise be depreciated.

(*f*) Other significant business interests of construction firms.

(*g*) Allocation of assets by both usage and ownership.

(*h*) Attachments and modifications to above equipment items.

IV. Review and Appraisal of Available Data

IRS DATA

The following is a breakdown of the type of assets held by corporations in the contract construction group reporting to IRS for fiscal year 1961:

	Billions
Cash	$1.6
Receivables	5.6
Inventories	1.6
Investments	1.7
Depreciable assets	[1] 2.5
Depletable assets	.1
Land	.3
Other	1.9
Total	15.4

[1] $5.4 less depreciation allowance of $2.9 equals net book value of $2.5.

As previously mentioned, however, there are three facts which make these figures of little value even as orders of magnitude: (1) the construction industry uses a substantial but unknown amount of leased and rented quipment; (2) the IRS reports do not begin to represent the total construction industry; and (3) construction firms may own assets used for business interests other than construction.

The following list provides data on the number of firms reporting in fiscal year 1961, broken down by type of contractor and legal form of business. This list excludes approximately 48,000 corporations and an unidentified number of noncorporate firms listed as operative builders under an SIC real estate classification. The published breakdown on operative builders is not as fully detailed as that for contractors, and noncorporate operative builders are not identified separately from other real estate operatives. There is a substantial overlap of operative builders with general contractors, and with some who may report as special trade contractors, as well as other businesses. These 48,000 builders reported only $1.7 billion receipts—but houses "built for sale" during the period should have totaled around $10 billion. Some part of the difference may be in noncorporate returns, not identified separately in published data.

Firms

[Thousands]

	Total	Proprietors	Partnerships	Corporations including 1120–S
All construction firms	799	655	63	81
General contractors	163	110	18	35
Special trade contractors	595	511	41	43
Not allocable	41	34	4	3

NOTE 1.—Includes 204 consolidated returns involving 524 subsidiaries. No information on number of subsidiaries and affiliates filing separately.

NOTE 2.—Subdividers, developers, and operative builders—not included above—(corporate only) reported receipts of $1,800,000,000 for 48,000 firms.

Gross receipts

[Billions of dollars]

	Total	Proprietors	Partnerships	Corporations including 1120-S
All construction firms	55	15	7	33
General contractors	30	6	4	20
Special trade contractors	23	8	3	12
Not allocable	1	1	(1)	(1)

[1] Less than one-half billion dollars.

Assets

[Billions of dollars]

	Total	Proprietors	Partnerships	Corporations including 1120-S
All construction firms	(25)			15
General contractors	(15)			10
Special trade contractors	(9)			5
Not allocable	(1)			(1)

[1] Less than one-half billion dollars.

NOTE.—Figures in parentheses estimated from corporate assets to receipts ratios.

Source: Statistics of June 1960-61, IRS.

OASI data follows approximately the same classification system as IRS.

The problem of identifying construction firms is critical. The most thorough research would have difficulty in identifying all important construction firms no matter how it is done. Methods considered have included the use of phone books, directories, mailing lists, trade publication subscribers, trade association membership lists, IRS returns, and OASI data. A study of the construction industry done recently for Producer's Council turned up the fact that small subcontractors tend to work mostly for a single operative builder account. The rest of their work consists of minor contract work plus repair services to the public. This is particularly true in case of trades like plumbing and electrical work. The possibility that these firms would either not be listed in any directory at all, or would be listed under repair service categories, seems quite high.

DATA ON INVENTORIES OF UNSOLD NEW CONSTRUCTION

A new survey initiated a couple of years ago by the Bureau of the Census does provide quarterly figures on the inventory of unsold houses, both completed and under construction, and in the hand of operative builders. These data are in terms of numbers of units but can be readily converted to market value (except for difficulties in separating land value from new construction value).

CONSTRUCTION PUT IN PLACE

Deficiencies in the construction put-in-place data are well known. While this is activity data rather than wealth data for the construction industry, the product represents additions to wealth in other sectors. Maintenance and repair data are not included, and the Census Bureau states that their coverage, particularly of force account work, may be substantially incomplete.

LABOR INPUT DATA

One other item which deserves mention are the BLS Labor Input Studies which, as a byproduct, develop information on equipment usage. These have covered various types of contract construction, and much of the data on the actual types of equipment used has not been published. Such data are presumably available at BLS. (BLS charged depreciation costs into projects on a per thousands of dollars of contract value basis.)

WEALTH INVENTORY CHANGES

There is a substantial variety of data on new construction, the production and shipment of durable goods and producer's equipment, etc., all of which represent gross additions to wealth. But we have almost no data which would indicate scrappage, abandonments, or other conversions, which would permit a compilation of net figures.

MAINTENANCE AND REPAIR DATA

The conceptual issue of the treatment of maintenance and repair service as part of the construction industry was discussed earlier in this draft. Estimates of the total volume of maintenance and repair are compiled annually with no breakout. A new series which attempts to differentiate between maintenance and repair, replacements, and additions and alterations—for residential construction only, has been under development by the Bureau of the Census (series C–50).

CONSTRUCTION CONTRACT DATA

This is actually similar to the construction put-in-place data except for timing differences, and forms a large part of the basis for put-in-place data together with building permit data and public construction data collected from various sources. It probably suffers from substantial omissions of small contracts and force account work.

EMPLOYMENT DATA

BLS data follows SIC breakdowns and is unsatisfactory for reasons similar to those which make IRS data unusable. Employment data from the CPS sample surveys of census are at higher levels, but still suffer from industry classification problems. CPS data classified by occupation are also not usable, since many of the same trades appear in shipbuilding, mining, cabinetmaking, electronics, etc. Common labor cuts across all industry definitions.

V. Definitions of the Construction Sector

WHAT IS CONSTRUCTION?

Construction could be liberally defined as any manmade alteration of real property—other than mining, timbering, quarrying, well drilling, or agriculture. (Some of these activities also include force account new construction, as well as operations that are closely related. A clear division may not be possible.) Generally speaking, construction could be broken down into the following categories:

(*a*) New buildings.
(*b*) Nonbuilding structures (bridges, dams, etc.).
(*c*) Nonbuilding, nonstructural construction—such as highways, dikes, and other earthworks.
(*d*) Site preparation including grading and excavation.
(*e*) Additions and alterations to existing construction.
(*f*) Maintenance and repair of existing construction (other than custodial services, etc.).
(*g*) Demolition and removal of existing construction.

Inclusion of maintenance and repair is a controversial subject, partly because it is generally an expense item rather than a capital investment item. Even though construction as an industry performs repairs, this activity is not normally treated as construction in other economic accounts or other commonly used statistical series. Data collection and estimates on the activity are limited. A large proportion of the activity is by force account, and by households. However, there are many argument for its inclusion. It consumes similar materials and utilizes much of the same work force and equipment as does construction. It also renews capital and offsets real depreciation, irrespective of accounting practices. On balance, it should probably be included in any comprehensve definition of "construction."

An item not ordinarily included as part of construction activities is architectural and engineering services. It should probably be included. Similar services are automatically included in manufacturing, wholesaling, and retailing trades. It is a direct cost in the construction process and not merely an overhead item, though it is traditionally treated separately. It is rather easily isolated, although some architects and designers are in the employ of the construction industry and the value of their work is then included in reports. The fees and receipts of independent architectural and engineering firms run to about $1.5 billion per year. In addition, there is an unknown expenditure of this type by many firms employing contractors, and by governmental agencies. Such firms are sometimes directly engaged in construction and would thus own or use equipment assets.

As a generalization, construction activity is most often regarded as that activity carried on at the construction site. The use of more sophisticated materials and methods has gradually reduced the amount of actual work performed at the site. A builder or contractor may fabricate large parts of the construction either at a central location on site or in an off-site shop. By some definitions this would constitute manufacturing rather than construction. But it would be most commonly regarded as construction. The so-called manufactured housing industry (and prefabricated component manufacturing) con-

stitutes a gray area, since it primarily duplicates construction, using the same materials and approximately the same methods. It gains its efficiency through supervised shop conditions, and the use of jigs and larger machinery. House manufacturing and prefabrication can take place also in the shops of lumber dealers, etc. These activities obviously must be taken into account in any measures of construction productivity, etc.

WHO DOES CONSTRUCTION?

The construction industry as defined by SIC may account for about 75 percent of the reported construction volume put in place. The series generally omits engineering and architertural fees, since these are not included in construction contracts. It excludes also the profits of operative builders, but does include the profits of general contractors (and subcontractors as well).

Three other types of "construction operatives" deserve mention: (*a*) Investment builders, who do part or all of their own construction for investment on their own account, Webb & Knapp is an example; (*b*) land developers who prepare sites for sale to others may do their own grading, streets, utilities, etc.; (*c*) owner-builders who build (all or in part) their own living quarters, vacation houses, etc.

In addition to contract construction accounted for by the SIC construction classification, perhaps as much as $10 billion annually is received by operative builders, who are classified as "real estate" rather than "construction" firms. Business and government firms in all economic sections may have handled 20 percent of construction activity on force account. Transportation firms, chemical and petrochemical firms, and utilities particularly do substantial force account construction. Contract construction is also carried on in substantial qualities by a number of other industries not classified as "construction" in SIC. American Bridge Division of United States Steel for instance, is a construction organization of substantial size. Large department store chains—in particular, Montgomery Ward and Sears, Roebuck—have been getting increasingly involved in contract construction. They are primarily active in the home remodeling field, but also erect small prefabricated buildings, such as garages. A number of home manufacturers are also directly involved in construction activity—both as contractors and operative builders. Building materials' dealers are also frequently active as both contractors and operative builders. The main point which all this illustrates is that the SIC classifications are almost wholly inadequate to identify the industry.

The nature of construction, as it affects our problem, is an operation that is carried on by all types of industries. It is not an operation handled only by a "construction industry" as such. It does not therefore lend itself to standard classification or tabulation procedures. It resembles the transportation industry in some respects. A company may ship goods by common carriers—by rail, road, or air—or it may use its own trucks, or on occasion its own planes. And individuals may travel by commercial air, bus, or rail carrier, or use their own cars or planes. A standard industrial classification system which secured perfect reports from all transportation companies on the capital they used, would still miss major parts of transportation operations. But many, though not all of the transportation omissions could be caught

through the use of entirely separate statistical series, such as auto and truck registrations, and related data and totals could be developed by inferences. No comparable cross-check device exists for construction.

In short, there seems no basis for simple estimates of the sector's wealth assets, no matter how the sector is defined. All that can be done is to develop specific wealth data from specific contractors who report both their wealth and their activity. By getting an adequate sample, it would be possible to develop factors which could be used to develop estimates consistent with specific definitions and universes.

VI. Characteristics of Wealth Assets Employed in the Construction Sector

TYPE OF WEALTH ASSETS EXPECTED

The construction industry assets structure can be fairly well anticipated. As far as contract construction is concerned, the principal tangible wealth asset should apparently be equipment. There also could be a fair amount of materials and undelivered work in process. Financial assets, of course, will be found, as in any other line of commerce. Since office operations are minimal in contract construction, buildings and land *may* comprise only a minor part of assets. Aside from small offices, the major buildings used would be sheds for storage of equipment. The equipment assets of contractors consist primarily of such items as earthmoving equipment, cranes, grading equipment, paving equipment, portable scaffolding, generators, pumps, and a variety of other large ticket items.

The operative homebuilder on the other hand usually possesses very little in the way of equipment items, but could be a very large holder of wealth assets. He may be holding a large inventory of undeveloped land held for future development. If he has an active subdivision, he may have several model homes, usually furnished. These houses together with their furnishing might be regarded as "display fixtures," and may aggregate as much as $0.5 to $1.5 billion. The operative builder plays a dual role of producer and retail merchant. Some operate exclusively by taking orders from their model homes, while others operate basically as inventory merchants ("speculative builders"). The majority probably do a combination of both operative and speculative building, and their principal wealth asset is an inventory of unsold homes—both in process and completed. New survey data from the Census Bureau indicates that this inventory of unsold homes, as distinguished from display houses, may run anywhere from 200,000 to 400,000 units—with a value of from $2 to $5 billion.

Small homebuilders and trade contractors will usually own such items as autos, jeeps, station wagons, power generator, pumps, small trucks, and a variety of handtools and portable power tools. For any one operator the value may be small—say $5,000 to $10,000 as the range of a likely average. But with nearly 800,000 firms reporting to IRS under contract construction alone, the total volume could well run several billion dollars.

ORDER OF MAGNITUDE OF CONSTRUCTION SECTOR ASSETS

The reported volume of construction put in place per year is running in the neighborhood of $65 billion. An all-inclusive definition and perfect reporting might add $30 billion to this figure. But the value added by construction operations themselves is much less. If, as a very rough estimate, it is assumed that on-site employment represents 30 percent and that overhead and profits of the site operations represent 15 percent of the value put in place, the value added by reported construction operations may be less than $30 billion per year. If each dollar of capital used in construction turns out $1 in value added, the total value of capital involved in reported construction operations may be somewhere in the neighborhood of $30 billion. If the total value of all reproducible tangible assets in the country is now in the neighborhood of $1.5 trillion and the total national wealth in the neighborhood of $2 trillion, this figure of $30 billion represents under 2 percent of the assets of the country, and 10 percent of the total stock of durable equipment. This is a large enough proportion of the total to be worth examining with some care, but it may not be large enough to be worth expensive and painstaking efforts, for instance, to hold errors to within 5 percent.

OTHER ASSETS

Just as construction-type assets will be found in other sectors, so will assets allocable to other types of activity be found in the construction sector—depending principally on the firms "primary" activity. There is no doubt a *major* overlap in the operative builder type of activity (classed by SIC under "real estate").

OPTIONS

Options on leased equipment may represent substantial value not on books, and are discussed in section headed "The Leasing and Rental Questions" found below. But land options are another item—this being a common method of holding land inventory for operative building. No tangible data exists on the extent and nature of the practice, but some builders are known to option land as far as 5 years ahead of projected development. The option price may often represent a substantial portion of the total price to be paid, for various reasons peculiar to the business.

VII. Special Problems

GENERAL COMMENT

Special problems are in evidence throughout this report, and this section does not undertake a complete itemization that would require repetitive comment. Some items mentioned elsewhere are nonetheless further commented upon here, when appropriate.

THE LEASING AND RENTAL QUESTIONS

The questions of leased and rented equipment would seem to pose special problems for the wealth inventory. One important aspect of the question is the distinction between renting and leasing. There may not be an important dictionary distinction, but so far as the "leasing" is concerned, there is a very important distinction. Renting generally refers to a short-term contract for a piece of equipment by the day, week, or year, and is strictly an expense item. There are no options on renewal contracts, and the payment is entirely for the use of the equipment. In some instances, it is virtually impossible to distinguish renting from subcontracting because the rental requirements may sometimes provide that the "rental" organization also furnish the operator (as well as other maintenance personnel, etc.).

Though it would seem reasonable to expect that the rent-with-operator type of operation would generally identify itself as a subcontractor rather than a rental establishment, we have no real assurance that this is so—and such firms in practice, identify themselves as in the rental business.

Leasing on the other hand, almost always refers to a special type of contract, which normally amortizes the full purchase price of the equipment over the period of a relatively long-term lease. The unique feature of the lease is that it generally involves an option to purchase the equipment item at the end of the lease period. Options are generally included in an entirely separate document, since the Internal Revenue Service (IRS) has recently ruled that a lease with option to purchase is a conditional sales agreement and thus monthly lease payments would not be deductible as rent. The dual document arrangement, however, is apparently acceptable to IRS, or at least they have as yet found no way to block its use. Nonetheless, the purpose of amortizing investment over a relatively short period of time for tax purposes is still being achieved.

A typical lease arrangement would provide for perhaps a 3- or 4-year term on a piece of equipment with a life expectancy of 10 years. A $100,000 item, for instance, might have monthly rental payments of $3,500. At the end of the 3-year lease, the lessee could exercise the option—normally 10 percent of the original purchase price—and take title to the equipment. The mathematics are complicated but there is an immediate savings in taxes which usually more than offset the cost of this approach to financing—both in the short and long run. The tax benefits can, of course, vary widely from firm to firm, and will depend in part on the terms negotiated. Leasing companies tend to regard themselves more as financial institutions than as rental companies. They carry no physical inventory and normally deal mostly with *new* equipment, most often selected and arranged for by the lessee. Manufacturers of equipment also deal through lease arrangements directly for their own account. There are, of course, many other reasons for leasing besides tax advantages. These needn't be explored here.

What may be important is to realize that the lease *is* basically a method of financing or acquiring wealth assets. The contractor firm which leases equipment is not only the user of the equipment, but also is in virtual full control and possession of the equipment, and further

holds an option which virtually assures transfer of title if the lease has any maturity at all. The option itself is a kind of redeemable claim which will probably never show in the accounts. It may not be carried on the company's books. But the option on the above example lease may have a market value between $60,000 to $70,000 when the lease expires, and could have a discounted present value as high as $50,000.

One reason for belaboring the leasing question is that for survey purposes, a contractor may regard the equipment as actually owned—since he has possession of it and intends to retain it. Since this could result in double accounting, questions on a wealth survey should probably be carefully worked out to separately count owned, leased, and rented equipment.

This is believed to have caused duplication problems in some of the highway capacity studies, since some contractors tended to list equipment they felt they had access to by rental as well as that owned. The problem is particularly affected by the common practice of contractors to rent idle equipment to other contractors.

IDENTIFICATION OF FIRMS

The SIC approach to the wealth inventory is almost a predetermined necessity—both to assume complete converage and to prevent duplication in the inventory. Reports by firms must be tabulated by detailed SIC classifications so that they can be blown up to match both the contract industry universe and the construction activity universe.

SEASONALITY

Another type of problem which must be faced is seasonality. The equipment in the hands of contractors and others doing construction work, and in the hands of lessors, may not vary greatly in total from season to season, but the amount of equipment in use, or in the hands of contractors, will change with the seasons. The amount of equipment which is rented in June in Northern States may be appreciably greater than the amount that is rented in February. But a figure for the equipment on hand, *on an average*, throughout the year, might serve our purpose.

Inventories on the site and owned by contractors will vary sharply not only seasonally but as work progresses. A job 90 percent finished may have very very little equipment that is not in use, or material which is not in place. Similarly, a job which is just 10 percent underway may have relatively little material on the site, but considerable equipment being prepared for use, and a large amount of material on order. A job half done may have a large amount of materials and equipment on site, or otherwise owned by the contractor. Careful attention would have to be paid to definitions of "materials" and "inventories," and possibly to relating returns to the status of the job being reported, or it may be advisable to ignore the value of materials or of equipment which is due to be incorporated into buildings or other projects.

MULTIPLE CORPORATIONS

Industry authorities report that the use of multiple corporations is common among the larger contracting firms. These may be formed along several different patterns of ownership, legal form, and functional purpose. One not infrequent form is for all equipment to be placed in a separate corporation and leased to the corporation actually doing the construction. Unless it is a wholly owned subsidiary, the leasing corporation would probably not ordinarily report as a contracting firm. This would further impair IRS data, or the use of IRS reporting, as a medium for collecting wealth data on any kind of useful basis.

Operative homebuilding operations likewise utilize multiple corporations—for a wide variety of legal purposes. *Collapsible* corporations offer a particular problem in identifying firms and maintaining continuity.

TURNOVER OF FIRMS

The turnover of construction firms is known to be quite high—but little is known about it other than that the industry has the highest failure rate of any major sector. But many more firms are in and out for purely discretionary reasons, or because they weren't low bidders on contracts, or because they "graduated" to something else, etc. The turnover could be as high as 20 percent, including new entrants.

VALUATION PROBLEMS

New earthmoving equipment now coming on the market has much greater capacity and horsepower per unit than a few years back. Thus we are adding fewer machines but just as much capacity—possibly at less cost per unit of capacity. Across a broad spectrum, obsolescence is affecting valuation of equipment perhaps faster than depreciation, but at much different rates for different types of equipment. Use of age tables for depreciation of original cost may not work satisfactorily on construction equipment. A side aspect of the problem—wide regional variations in wage rates may make a piece of equipment obsolete in one area but quite acceptable in another area (there may be a similar effect between union and nonunion contractors).

VIII. Recommendations

CENSUS OF CONSTRUCTION

Inclusion of wealth inventory data objectives in the proposed census of construction could easily be the most important single recommendation this group can make. Hopefully, such a census would not limit itself to the SIC contract construction definition. But for the purposes of overall wealth inventory, firms could be identified by their SIC group.

Though there is as yet no decision to mount a construction census, the combination of the dual objectives could well provide the added potential yield that would make the need for a construction census more compelling.

The addition to the collection task would probably be minor; a separate survey of wealth for this sector could be avoided; and the wealth, establishment, and activity data would be compatible. From the viewpoint of those specifically interested in the construction sector, at least, this would seem by far the best solution.

The most difficult and costly part of either a construction census, or a wealth inventory (construction sector) may be that of adequately identifying the firms and determining the universe. If it is done for either, it is essentially accomplished for the other.

CENSUS OF STRUCTURES

A census of structures would seem to be an obvious and much needed extension of the Federal census system. Such a census would go a long way toward providing wealth data, though it could conceivably present problems of reconciliation with data collected on an industry or SIC sector basis. This, however, is not the problem of this committee.

USE OF IRS RECORDS

The committee recommends against any attempt to use IRS records or an expansion of IRS reporting as a *primary* vehicle for developing wealth data.

Such data would be of little use to the construction industry, or to those interested in relating wealth data in any meaningful way to other data on the construction sector—because of the many problems which clutter the definitional area.

There is some possibility of using IRS and OASI as a secondary device for identification of firms along SIC lines to prevent overlaps and insure full coverage of all sectors—but beyond that, the complexities of developing rational usable information on construction are greater than the results would warrant by this approach.

VALUATION OF EQUIPMENT

Equipment appears to be the main valuation problem unique to the construction sector. Presumably, other valuation problems which are common to all sectors are the responsibility of the advisory committee or other.

Since obsolescence appears recently to be having as much or greater effect on true values of equipment than does actual depreciation, traditional approaches to valuing these assets may be unrealistic. Thus, as a suggestion, a panel of experts from the equipment industry, and others as appropriate, might be used to establish a schedule of market values for equipment similar to the "blue book" in common usage for determining the value of motor vehicles. This would, of course, require collection of the equipment inventory data in physical terms—make, model, age, capacity, and original cost. This would be desirable

in its own right—irrespective of method of converting to dollar value, and would provide the best basis of updating wealth estimates on an annual basis.

VALUATION OF LEASES AND OPTIONS

The working group wishes to point out that options to purchase are a form of financial claim not ordinarily carried on books of account or reported in any set of financial data. Since they may have a value well beyond their original cost, or cost to exercise, they can be expected to be used in most instances. These may not be of such magnitude that they are worth the trouble of getting at—but they at least should be considered. As a very rough guess, the net value outstanding—*all sectors*—may run above $1 billion.

USE OF TRADE ASSOCIATIONS

Informal inquiries suggest that most of the significant trade associations connected with the construction industry would be willing to cooperate in surveying their memberships with respect to an inventory of wealth assets. A good deal could be accomplished through mail surveys this way, and the trade associations through their good offices would probably facilitate better cooperation—either with mail surveys or interviews—than could be obtained without their help.

This approach would have both advantages and disadvantages. Trade association membership is not necessarily a representative cross section of the universe—and it would be necessary to determine what characteristics members and nonmembers had in common that would permit imputing survey results to the universe and how these two "subuniverses" were stratified. There would also be many problems involved in identifying the universe. (These problems are not discussed in this report, in detail—since they have been well covered in an unpublished report prepared by Garth Mangum for the Bureau of the Census relative to the census of construction.)

An advantage of using a trade association approach is that their memberships usually include most of the largest contractors. Since the size distribution of contract firms is highly skewed, there is an obvious requirement for high sample ratios among the largest contractors. Small sample ratios will generally suffice for the smaller, nonmember firms.

This approach might, for instance, start with preparation of a working draft listing the types of data and detail to be sought. Proposals could be worked out in detail with representatives of AGC, National Association of Home Builders, the American Road Builders Association, some of the larger public utility companies, some of the larger engineering and architectural firms, such as those turning out chemical and petrochemical plants, and with lessors and renters of construction equipment, for specific types of questionnaires. Since some of the data yield might be of specific use to these organizations, including the possibility of special questions or cross-tabs, there may be some oportunity to negotiate cost-sharing contracts with them on a limited basis.

INSTANTANEOUS VERSUS ANNUAL MEASUREMENT

If estimation of the Nation's total wealth were a sole objective, then ideally, instantaneous measurement of the ownership of wealth assets would be most desirable—that is, all assets owned as of June 30, 1965, for instance. However, because of the widespread practice of leasing and renting, both between firms within the sector, and between other firms, and because of the seasonality of construction, such a figure would have very little realistic value from the industry point of view. In addition to the leasing and renting companies, both manufacturers and the Federal Government lease equipment to other sectors, including construction. It may thus be necessary to collect information on both an instantaneous and an annual measurement basis. On the annual basis, the schedule of assets would list assets together with an estimate of the time the asset was held, such as 2 weeks, 3 months, and so forth, including both leased and renting equipment, as well as equipment purchased sometime during the year, or disposed of during the year. This kind of data might create problems of overlap, and so forth, and the instantaneous data, if also collected, could be used to reconcile the accounts.

OWNERS VERSUS USERS

When the wide variety of means by which assets are held by the construction industry is viewed, it becomes obvious that ownership is not as pertinent as usage—at least insofar as relating capital investment requirements to activity. If practical, it is recommended a schedule of assets be accompanied by a schedule which indicates percent of time used, percent of time idle, and percent of time leased to others, including an indication of the sectors to which the asset is being leased or rented.

IDENTIFICATION OF FIRMS

As pointed out previously, a very significant portion of construction activity may be conducted by firms which will not identify themselves as primarily engaged in contract construction. It is necessary, however, to avoid duplication of reports from firms which report their wealth under other classifications. So reporting must be limited to contract construction categories, and to others which can be clearly separated from other categories. The anomaly of investment builders and operative builders, heavily engaged in residential construction but nonetheless classified under the "catchall" sector of finance, insurance, and real estate, makes a straight SIC approach very unsatisfactory for the use of those interested in construction as an industry. So also the construction activity engaged by retail lumber materials dealers, materials and component manufacturers, financial institutions such as insurance companies, and major divisions of large multiple interest companies—such as the American Bridge Division of United States Steel, or the Kaiser Engineering Division of Kaiser Industries. Where possible, such firms should be put in separate cells so their data will not be included twice, and so that these important forms of activity can be included in construction, but not included twice in totals.

The best approach to developing comprehensive data on the construction industry as distinguished from construction activity, if this

could be done, would seem to be to identify the construction activity itself, as a means of identifying the firms engaged in it, at that time determining how they would be classified under SIC. Experiments should be undertaken to see to what extent this could be done.

To summarize, the approach which seems to offer the best possibilities of meeting the broadest range of requirements, still producing satisfactory data on wealth, seems to be through use of a census of construction. If this is not feasible, sample studies should be made using IRS and OASI classifications, and using time intervals or timespans which would allow for seasonal variations. Totals should be blown up by cells using all sources available for estimating the universe. Trade association technicians and executives, as well as Government officials, should be relied upon heavily in the operation.