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Appendix VI

Estimates of the Market Value of the  
Outstanding Corporate Stock of All  
Domestic Corporations

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I. INTRODUCTION

This appendix discusses the procedure for estimating the market value of all outstanding stock (both common and preferred) of domestic corporations; that is, companies incorporated in the United States. Two sets of data are derived. One represents the value of all outstanding stock, including shares held by other corporations. Included in this total, unavoidably, are the shares of some companies which are 100 percent owned by other companies, even though these wholly owned subsidiaries should really be excluded from the compilations. The other set of data represents the value of all outstanding stock exclusive of intercorporate holdings, including 100 percent owned subsidiaries.

Shares of nonprofit corporations are excluded from the totals, as are shares issued by investment companies (defined as all companies registered under the Investment Company Act of 1940). The market value of the outstanding shares of investment companies listed on exchanges is included in the totals for the exchanges, however; and the market value of the outstanding shares of unlisted investment companies is included in the value of privately held stock, though the value of all of these shares is excluded from the overall totals.

2. THE MARKET VALUE OF ALL OUTSTANDING STOCK

Table VI-1 shows the estimated market-value totals and their components. Briefly, the procedure used to derive the estimates involves the summation of the following values, which are obtained separately; the

TABLE VI-1

## The Market Value of the Outstanding Stock of Domestic Corporations

*(all values year-end, \$billion)*

	Companies Listed on the New York Stock Exchange (1)	Companies Listed on the American Exchange (2)	Companies Listed on Other Exchanges (3)	Large Companies Traded Over-the- Counter (4)
1952	118.2	12.5	3.1	28.0
1953	115.3	11.3	2.8	27.3
1954	166.1	16.4	3.6	38.0
1955	203.6	20.1	4.0	45.0
1956	214.5	23.0	3.8	46.0
1957	192.1	19.3	3.1	44.0
1958	271.8	24.1	4.3	59.0
1959	302.6	19.1	4.2	66.0
1960	302.1	18.0	4.1	69.1
1961	381.7	25.4	5.3	105.8
1962	339.9	17.7	4.0	90.1
1963	404.2	18.9	4.3	98.8
1964	465.7	19.9	4.3	120.8
1965	528.5	21.3	4.7	137.3
1966	474.2	19.4	4.0	131.4
1967	595.4	32.5	4.0	172.0
1968	680.1	49.6	5.1	220.7

SOURCE: See text.

resulting totals are then adjusted to eliminate the shares of investment companies:

1. The value of the shares of all domestic corporations listed on United States stock exchanges.

2. The value of the shares of large domestic corporations traded over the counter (OTC), derived basically from SEC data.

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Open-End Investment Companies (5)	Investment Companies Registered with SEC (6)	Privately Held Companies and Small Companies Traded Over- the-Counter (7)	All Domestic Corporations (1+2+3+4+ 5-6+7) (8)	All Domestic Corporations Excl. Intercorporate Holdings (9)
3.9	6.5	66.2	225.4	180.8
4.1	6.8	65.5	219.7	177.3
6.1	10.2	78.0	298.0	246.4
7.8	12.9	84.7	352.3	290.3
9.0	14.4	69.5	351.4	291.0
8.7	12.8	59.1	313.5	262.4
13.2	18.8	95.1	448.7	372.4
15.8	22.5	113.9	499.1	417.7
17.0	24.8	109.3	494.8	416.6
22.8	32.0	149.8	658.8	553.4
21.3	32.1	123.3	564.2	470.5
25.2	38.1	185.0	698.3	595.0
29.1	43.4	195.8	792.2	673.4
35.2	49.8	216.3	893.5	757.7
34.8	48.8	196.2	811.2	689.5
44.7	64.1	250.3	1,034.8	879.6
52.7	75.9	297.1	1,229.4	1,045.0

3. The value of the shares of privately held domestic corporations and of small corporations traded OTC. The data are obtained by subtracting estimated dividend payments of listed companies, large OTC companies, and investment companies from total dividend payments of all domestic corporations; the residuals are then blown up on the basis of yield data derived on a sample basis.

A detailed description of the estimating procedure and the sources from which the estimates were derived is presented below.

*a. Listed Companies*

1. The value of the shares of domestic companies listed on the New York Stock Exchange—Data obtained from the exchange.

2. The value of the shares of domestic companies listed on the American Stock Exchange—Data obtained from the exchange, except for the years 1952 through 1955, when the market value of domestic listed companies was not broken out separately. It was assumed that in these four years, domestic companies accounted for 74 percent of the market value of all listed stock on the ASE (the average percentage throughout the later 1950's and most of the 1960's).

3. The value of the shares of domestic companies listed on other United States stock exchanges—Data obtained from the annual reports of the SEC; they refer only to companies not also listed on another exchange. The SEC broke out the market value of foreign companies listed on other exchanges only after 1959. It was assumed that in previous years the market value of foreign companies accounted for 0.3 percent of the value of all stock listed on other exchanges (the average percentage in the years 1960 through 1963).

*b. Large Companies Traded Over the Counter*

For the years 1952 through 1963, except for 1953, the SEC in its annual reports published a year-end market value figure for large over-the-counter (OTC) companies. That is, it estimated the market value of all issues (common and preferred) of those companies traded OTC which had more than 300 shareholders of record. Included in the total were industrial companies, banks, insurance companies, public utilities, and real estate and other financial companies. Excluded from the total were stocks admitted to listed or unlisted trading privileges on stock exchanges, Canadian and other foreign companies, and investment companies. About 3,500 companies were included in the SEC total in 1952, and the number increased to over 4,100 by 1963. The OTC market value data derived here represent the SEC totals in the years between 1952 and 1963, except for 1953. The 1953 figure was obtained by interpolating between the 1952 and 1954 SEC data on the basis of the changes in the National Quotation Bureau's index of 35 industrial stocks during the two years.

No SEC data are available after 1963, since the tabulations were then discontinued. A 1964 figure was obtained from the New York Stock

Exchange Census of Shareowners,<sup>1</sup> which provides an estimate of the market value of the outstanding stock of 4,150 large OTC companies at the end of 1964. The NYSE total was adjusted upward on the basis of the relationship between the 1961 SEC figure and the 1962 NYSE Census figure<sup>2</sup> (giving an estimate of the market value of the outstanding stock of about 3,675 large OTC companies at the end of 1961). That is, the 1961 SEC total was 4 percent larger than the 1961 NYSE total; therefore, the 1964 NYSE market-value estimate was increased by 4 percent.

Data for 1965 through 1968 were obtained on the basis of changes in the NQB industrial index, Moody's bank stock index, and Moody's two insurance stock indexes (life, and fire and casualty) during these years. For the period 1957 through 1963, in which the SEC reported not only a total OTC value, but also broke it down into three components (banks, insurance companies, and industrials and all other), each year's values were projected to the end of the following year in two ways:

1. The total market-value estimate was projected on the basis of the percentage change in the NQB index.
2. The three components of the total were projected on the basis of the change in the relevant index, and the projections were then summed. The average percentage change in the insurance sector was obtained by weighting the two insurance indexes on the basis of market values in the two sectors. These values were obtained by blowing up Internal Revenue Service data on the amount of dividends paid by life insurance stock companies and by other insurance companies on the basis of Moody's data on yields of life insurance companies and fire and casualty companies.<sup>3</sup> This procedure assumes that OTC issues with more than 300 shareholders of record accounted for the same proportion of the total outstanding stock of both types of insurance company.

The projected totals came close to the actual SEC (or adjusted NYSE) value in most cases: 9 of the 14 projections were within 5 percent of the actual value; and 13 of the 14 were within 8 percent of the reported total. The results were slightly better using three indexes instead of one, though

<sup>1</sup> *Shareownership USA: The 1965 Census of Shareowners*, New York, New York Stock Exchange, 1965.

<sup>2</sup> *The 17 Million: The 1962 Census of Shareowners*, New York, New York Stock Exchange, 1962.

<sup>3</sup> Between 1966 and 1968, when no IRS data were available, it was assumed that the market value of life insurance companies was 50 percent greater than that of fire and casualty companies (on the basis of the relationship in previous years).

the differences were small. In 8 of the 14 cases, the projected values were smaller than the actual values, and errors of understatement were larger than errors of overstatement. The slight downward bias resulting from use of the indexes presumably reflects the fact that the number of companies covered by the SEC increased by about 600 during the period.

Since the component projection method is more logical—and also performed slightly better—it was employed to project market values for 1965 through 1968. (While an overall 1964 OTC value was available from the NYSE, no industry data were reported. Therefore, the 1963 SEC industry totals were projected by the index method, and the resulting values were adjusted upward so that their sum equaled the overall OTC value derived from the NYSE.)

The projected value of large OTC companies at the end of 1968 was \$220.7 billion (based on about 4,100 companies). The NYSE reported that the actual market value of about 7,450 large OTC companies was \$366 billion at the end of 1969.<sup>4</sup> The projections, therefore, proved to be reasonably accurate, since the actual value was based on about 80 percent more companies than the projected one, and there was a moderate decline in the various OTC indexes between the end of 1968 and the end of 1969.

### *c. Investment Companies*

To eliminate the market value of investment companies from the total estimated value of all outstanding stock, the value of open-end companies which are members of the Investment Company Institute (ICI) is added to the value of all other stock (listed, OTC, and privately held), and the value of all investment companies registered with the SEC is then subtracted from the resulting total. Investment companies which are registered with the SEC, but which are not ICI members, are either listed on exchanges, and therefore included in the exchange market-value totals (these are primarily closed-ends), or they are included in the estimates of the value of privately held stock. ICI members, on the other hand, while registered with the SEC, are neither listed nor in the privately held total.

Year-end data on the market value of ICI members are obtained from the ICI. Data on the market values of investment companies registered with the SEC, as of June 30, are obtained from the SEC Annual Reports. These data are adjusted to year-end totals by interpolating between June 30 values for ICI members. For example, the value of ICI open-ends

<sup>4</sup> *Shareownership—1970: The 1970 Census of Shareowners*, New York, New York Stock Exchange, 1970.

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increased by 15.8 percent between June 30, 1962 and December 31, 1962, and by 28.8 percent between June 30, 1962 and June 30, 1963; the value of investment companies registered with the SEC increased by 31.9 percent between June 30, 1962 and June 30, 1963. Therefore, the value of investment companies registered with the SEC is assumed to have increased by  $(15.8/28.8) \times 31.9$  percent between June 30, 1962 and December 31, 1962.

For the years 1952 through 1954, in which June 30 data were not available from the ICI, year-end market values of investment companies registered with the SEC were obtained by extrapolating the 1955 year-end SEC total (obtained by the method discussed in the previous paragraph) backward on the basis of the year-end to year-end changes in the value of ICI open-ends.

### *d. Privately Held and Small Over-the-Counter Companies*

The market value of privately held companies (all domestic corporations which are not listed, not traded OTC, and not members of the ICI)<sup>5</sup> and of small OTC companies is derived by blowing up their estimated total dividend payments on the basis of yield data obtained primarily from a sample of ASE stocks. Dividend payments are obtained by subtracting dividends paid by listed companies, large OTC companies, and investment companies from total dividends paid by all U.S. corporations. The errors contained in the resulting market-value totals are discussed following the explanation of the procedure.

#### *Method of Calculation*

(1) *Total dividends paid by all U.S. corporations.* Data obtained from the *IRS Statistics of Income, Corporation Tax Returns*. Dividends paid include distributions in cash and other assets—but not in their own stock—by all U.S. corporations. Liquidating dividends and capital gains distributions are included in the data.

Minus (2) *Dividends paid by domestic corporations listed on the NYSE.* Data obtained from the exchange. They represent total cash distributions, including liquidating dividends and capital gains distributions. Before 1966, the exchange reported the amount of dividends paid by all listed companies, as well as dividend payments by listed foreign companies; the amount of dividends paid by domestic companies could therefore be

<sup>5</sup> As previously indicated, the total value of privately held companies unavoidably includes the value of some wholly owned subsidiaries, though these companies are eliminated when a total market-value figure, net of intercorporate holdings, is derived.

obtained directly. Dividend payments by foreign listed companies have not been reported since 1965, though the market value of these companies is reported. Since there was relatively little difference, in most years before 1965, between the yield on all listed stock and the yield on foreign listed stock, dividend payments by foreign companies after 1965 were estimated by applying the yield on all listed stock to the average yearly market value of listed foreign stock.

*Minus (3) Dividends paid by domestic corporations listed on the ASE and on other exchanges.* Since dividend data are not reported by these exchanges, dividend payments were estimated on a sample basis. For each year between 1952 and 1968, the percentage of ASE stocks which were dividend-paying, as well as the average yield on dividend-paying stocks, was estimated on the basis of a sample of about one hundred stocks. The high and low prices for the year, as well as the amount of dividends paid (if any), were determined for each of these stocks every year. Foreign issues and issues of investment companies were excluded from the sample.

About 25 percent of the stocks in the sample were non-dividend-payers in 1952, and the percentage increased fairly steadily to over 50 percent by 1968. Non-dividend-paying stocks were concentrated in the lower price ranges; therefore, a weighting procedure was used to determine what percentage of the total *market value* of all ASE stocks they accounted for. Each year's sample was broken up into different average-price categories: \$0-\$10, \$10-\$20, and so on; for example, a stock whose high price for the year was \$37, and whose low price was \$18, fell into the \$20-\$30 category. The number of non-dividend-paying stocks in each price category was multiplied by the average price in that category, the total was summed, and the sum was expressed as a percentage of the sum of the total number of stocks in each price category multiplied by the average price in that category. On the basis of this weighting procedure, the percentage of the total market value of all ASE stocks accounted for by non-dividend-paying stocks increased from about 10 percent in 1952 to about 44 percent in 1968.<sup>6</sup>

The increase apparently reflects the fact that a substantial number of old, established companies, which tended to be dividend-payers, were listed on the ASE in the 1940's and early 1950's. Many of these companies

<sup>6</sup> This weighting procedure is accurate only if the higher-priced stocks have as many shares outstanding as the lower-priced ones. On the basis of a small sample of stocks that was checked in one year, this seemed to be a reasonable assumption, but there was not enough time to engage in a more thorough verification.

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have since been listed on the NYSE. Their place has been taken, for the most part, by smaller and newer companies, which concentrate on growth and tend to follow a policy of retaining all earnings.

The average yield on each dividend-paying stock was obtained by dividing its yearly dividend payment by the average of its high and low price for the year. The weighting procedure previously employed was then used to determine the average yield for all dividend-paying stocks; that is, the average yield of dividend-paying stocks in the various price categories was weighted on the basis of the number of such stocks and the average price in each of the categories. The data indicate that during the period 1952-68, average yields of dividend-paying stocks on the ASE corresponded fairly closely to average yields of dividend-paying stocks listed on the NYSE, and to those contained in the NQB index (though the percentage of stocks which were non-dividend-payers was much higher than on the NYSE).

The average market value of domestic stocks listed on the ASE and on other exchanges was then derived by averaging the market values at the beginning and end of each year. For example, the market value of domestic stocks listed on the ASE and on other exchanges was \$26.8 billion at the end of 1956, and \$22.4 billion at the end of 1957; the average market value during 1957 was, therefore, assumed to be \$24.6 billion. Each year's average market-value was then multiplied by the percentage of market value estimated to be dividend-paying, and the resultant total was multiplied by the average yield on dividend-paying stocks in order to obtain the estimates of dividend payments by stocks listed on the ASE and on other exchanges.

The data, as shown in Table VI-2, indicate an increase in dividend payments through 1956, followed by a decline through 1967. This pattern is explained by the fact that the rise in market values between 1952 and 1956 overcame the effect of falling yields. Between 1956 and 1967, the continued fall in yields, combined by relative stability in market values, resulted in a decline in estimated dividend-payments. The failure of market values to rise after 1956 (until 1967) must have been the result of the same factor which apparently caused non-dividend-payers to increase in importance—the replacement of older, well-established companies by newer and smaller ones.

*Minus (4) Dividends paid by large industrial companies traded OTC.* In 1952, and between 1957 and 1963, as previously indicated, the SEC broke down its OTC total, and an estimate of the market value of industrial stocks was, therefore, available. From 1963 on, market-value estimates were

TABLE VI-2

Estimated Dividends, American Stock Exchange and Other Exchanges,  
1952-68

	Yield <sup>a</sup> (percent) (1)	Percent of Market Value Dividend-Paying (2)	Average Market Value in Year (\$million) (3)	Dividends (1) × (2) × (3) (\$million) (4)
1952	6.0	90.0	15,480	836
1953	5.9	87.7	14,830	767
1954	5.1	90.2	17,050	784
1955	4.7	89.7	22,430	945
1956	4.6	88.5	25,840	1,052
1957	4.7	86.6	24,610	1,002
1958	4.1	84.4	25,400	879
1959	3.8	74.1	25,830	727
1960	4.3	67.4	22,700	658
1961	3.4	70.0	26,350	627
1962	4.2	65.3	26,200	718
1963	3.6	73.3	22,450	592
1964	3.5	74.0	23,700	614
1965	3.3	69.8	25,100	578
1966	3.2	66.7	24,650	526
1967	2.6	63.5	29,900	495
1968	2.4	55.6	45,580	608

SOURCE: See data description.

<sup>a</sup> Dividend-paying stocks.

obtained (as discussed in the explanation of the derivation of an overall OTC figure) by using the NQB index for extrapolation. Between 1952 and 1957, market-value estimates were obtained by interpolation, using the NQB index. The average market-value of OTC industrial stocks each year was then derived, adopting the same procedure employed for ASE stocks (the average of two year-end values).

Each year's average market value was then multiplied by the percentage of market value estimated to be dividend-paying, using the percentages

obtained from the ASE sample (on the assumption that the OTC markets have been characterized by the same trend toward smaller, growth-oriented companies in recent years). The resulting dividend-paying, market-value totals were then multiplied by average-yield values, obtained from a combination of the yield on ASE stocks and the yield on stocks contained in the NQB index, to obtain estimated dividend payments of large industrial companies traded OTC,<sup>7</sup> as shown in Table VI-3.

*Minus (5) Dividends paid by banks and insurance companies traded OTC.* Data obtained from *IRS Statistics of Income, Corporation Income Tax Returns*. According to the 1959 SEC Annual Report, the 700 banks included in the SEC OTC total accounted for about 75 percent of the assets of all U.S. banks at the end of 1958. At the end of 1968, the 700 largest banks in the country also accounted for about 75 percent of the total assets of all U.S. banks. A few of these banks are now listed, while almost none were in 1958; therefore, the banks which are now traded OTC probably account for less than 75 percent of the assets of all U.S. banks. Nevertheless, as an approximation, 75 percent of the dividends paid each year by all U.S. banks are subtracted. This introduces an error into the residual (because of the listed banks), which is discussed below.

According to the 1958 SEC Annual Report, the 300 insurance companies included in the SEC OTC total had a market value of \$11.5 billion at the end of 1957; while 17 insurance companies, with a market value of about \$1.6 billion, were then listed on exchanges. There are probably very few privately held insurance companies, and their market value is likely to be very small. Data in Moody's and in the New York State Insurance Reports show that the 150 largest fire and casualty companies write over 95 percent of the insurance written by all fire and casualty companies. According to Moody's, the 150 largest life insurance companies have over 95 percent of the assets of all life insurance companies.

<sup>7</sup> The NQB computes a quarterly yield on the stocks in its index, and these were averaged each year to obtain yearly data. Throughout the whole period, the yields conform closely to the yields of stocks contained in the Dow-Jones industrial index. The market value of the 35 stocks in the NQB index represented about 7 percent of the total estimated market value of all OTC industrial stocks (including public utilities) in 1967. In 1950, according to G. Leffler (*The Stock Market*, New York, Ronald Press, 1951), the 35 stocks accounted for about one-sixth of the market value of all OTC industrial stocks (excluding utilities). On the strength of these two bits of information, the ASE and NQB yields each year were weighted on a 90-10 basis, on the assumption that there tends to be some correspondence in quality between ASE stocks and those OTC stocks not included in the NQB index. Since, in most years, there was relatively little difference between the ASE and NQB yields (the ASE yields were generally slightly higher), the particular weights selected would in most cases make very little difference.

TABLE VI-3

Estimated Dividends, Large Over-the-Counter Industrial Stocks, 1952-68

	Yield on 35 Stocks in NQB Index <sup>a</sup> (percent) (1)	Weighted Yield ASE and NQB Stocks <sup>b</sup> (percent) (2)	Percent of Market Value Dividend Paying (3)	Average Market Value in Year (\$billion) (4)	Dividends: (2) × (3) × (4) (\$million) (5)
1952	5.80	6.00	90.0	16.0 <sup>c</sup>	864
1953	5.75	5.90	87.7	15.5	802
1954	5.00	5.10	90.2	18.4	845
1955	4.35	4.60	89.7	24.0	995
1956	4.60	4.60	88.5	26.9	1,095
1957	5.25	4.75	86.6	25.7	1,057
1958	5.00	4.20	84.4	28.2	1,001
1959	3.50	3.75	74.1	34.6	960
1960	3.55	4.20	67.4	37.8	1,070
1961	3.00	3.35	70.0	48.2	1,130
1962	3.25	4.10	65.3	51.6	1,380
1963	3.20	3.55	73.3	46.2	1,202
1964	2.85	3.45	74.0	54.9	1,402
1965	2.80	3.25	69.8	72.5	1,644
1966	3.15	3.20	66.7	81.5	1,740
1967	2.50	2.60	63.5	102.6	1,694
1968	1.90	2.35	55.6	138.2	1,804

SOURCE: See data description.

<sup>a</sup> Average of five quarterly figures, periods ending January 1 through following January 1. Quarterly data are derived from price data at the end of each quarter and from dividends paid during that quarter.

<sup>b</sup> Yield on dividend-paying stocks.

<sup>c</sup> End-of-year value.

(Many of these are not stock companies, but there is no reason to assume that the largest stock companies do not also account for the great bulk of all stock company assets.) As an approximation, 85 percent of the dividends paid by all U.S. insurance companies are subtracted each year; it is implicitly assumed that the remainder represents dividends paid by listed insurance companies and has already been subtracted, and that the privately held total includes no insurance companies.

*Minus (6) Capital gains distributions.* Total dividends paid by U.S. corporations, as reported by the IRS, include capital gains distributions; these must be subtracted to arrive at a true dividend residual. The totals

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subtracted here are those reported by the ICI for its member funds. Total capital gains distributions reported in the National Income Supplement in its reconciliation of IRS dividends with National Income dividends are not subtracted; the data include capital gains distributions of listed closed-end funds, and for the most part, these payments had already been removed when NYSE dividends were subtracted.

*Minus (7) Dividend payments, open-end mutual funds.* Total reported by the ICI. Dividend payments by closed-end funds are not subtracted, since the NYSE dividend total includes payments by listed closed-ends.

*Equals (8) Residual.* Dividends paid by privately held and small OTC companies. This residual was blown up on the basis of the yield data employed for large OTC industrial stocks; that is, the weighted average of ASE and NQB yields. The use of these yield data represents an attempt to treat privately held and small OTC companies in the same fashion as publicly traded ones. IRS data on the value of privately held stock appearing in estates are not used in the calculations.<sup>8</sup> The IRS tends to value this stock either in terms of book value or, when it tries to determine market value, it apparently uses very conservative price-earnings ratios.

The market-value totals thus derived were increased by 25 percent to take account of non-dividend-paying companies; that is, it was assumed that non-dividend-payers accounted for 20 percent of total market value in the privately held and small OTC sector. The use of this percentage is based on two assumptions. First, that privately held and small publicly traded companies are more likely to be non-dividend-payers than are larger publicly traded companies. Second, that privately held companies (though perhaps not small OTC companies) have not been characterized by the same trend toward a sharp increase in the percentage of non-dividend-payers which has characterized companies listed on the ASE since the late 1950's. The market value of privately held companies is tied, by and large, to book value for estate and for some other purposes though it is treated differently in this analysis; therefore, these companies would not have quite the same incentive as publicly traded ones to retain all of their earnings and to generate a rapid growth of profits, thereby raising the price of their stock and creating capital gains. Consequently, it is arbitrarily assumed that, in the early 1950's, privately held and small OTC companies were more likely to be non-dividend-payers than were listed and large OTC companies, but that the percentage of non-dividend-payers has not changed since.

<sup>8</sup> Internal Revenue Service, *Statistics of Income—1965, Fiduciary, Gift, and Estate Tax Returns*, Washington, D.C., 1967.

The resulting market-value data are yearly averages. They are converted to year-end totals on the basis of the relationship each year between the year-end and the average value of the NYSE composite index. In the years 1966 through 1968, it was assumed that the market value of stock in privately held and small OTC companies accounted for the same percentage of the total market value of all outstanding stock that it accounted for in 1965.

Following are the major problems connected with the estimates of the market value of stock in privately held and small OTC companies (aside from the assumption that 20 percent of the companies are non-dividend-payers).

#### *Evaluation*

##### 1. Errors in the size of the residual:

(a) In arriving at a residual, 75 percent of the dividends paid by all U.S. banks have been subtracted since banks traded OTC accounted for 75 percent of the assets of all banks in 1958. Several large banks became listed in the 1960's; therefore, it seems likely that the percentage of total dividends accounted for by OTC banks gradually declined during the decade. Consequently, the amounts subtracted in recent years as dividend payments by OTC banks are too large, and the residuals, therefore, are too small.

(b) In arriving at a residual, 85 percent of the dividends paid by all U.S. insurance companies have been subtracted. The remaining dividends were assumed to represent payments by listed insurance companies, which had already been subtracted. If listed insurance companies increased in importance during the 1960's, the amounts subtracted as dividend payments by OTC insurance companies are too large, and the residuals are too small.

(c) Total dividends paid by all U.S. corporations include liquidating dividends. Liquidating dividends paid by NYSE companies have been deducted but not those paid by other listed, or large OTC, companies. Therefore, too little is being deducted, and the residuals are too large. (This is probably a very small item.)

(d) Total dividends paid by all U.S. corporations include capital gains distributions. Capital gains distributions by investment companies listed on the NYSE, and by open-end companies which are members of the ICI, have been deducted but not those paid by other investment companies. Therefore, too little is being deducted, and the residuals are too large.

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(e) It was assumed that non-dividend-payers accounted for the same percentage of both large OTC industrial stocks and ASE stocks. If this assumption is invalid, the amount of dividends paid by large OTC industrial companies is incorrectly estimated and, depending on the direction of the error, the residuals are either too large or too small.

Items (a) and (b) probably outweigh in importance items (c) and (d); in the absence of knowledge of the direction of error in item (e), it seems likely that the dividend residual is too small, and that there is a systematic bias toward underestimating the market value of the stock of privately held and small OTC companies. However, the resulting error is likely to be small. Therefore, mistakes in calculating the size of the dividend residual are unlikely to lead to serious errors in the estimates of the market value of all outstanding stock, unless there is a significant difference between large OTC industrial companies and ASE companies in the importance of non-dividend-payers.

2. Estimates of the market value of privately held and small OTC companies in a particular year may be subject to a fairly sizable error. The total for any year depends crucially not only on the size of the dividend residual, but also on the yield value employed to blow up the residual. Use of a 3.5 percent figure, when the actual yield was 4 percent, would result in an overstatement of market-value totals by one-seventh. Consequently, if the yield data derived from the sample of ASE stocks were unrepresentative, market-value changes in the short run may be considerably distorted. For example, the decline from 1955 to 1956, and the very rapid increases from both 1957 to 1958, and 1962 to 1963, seem unreasonable. For the period 1952–68 as a whole, the yield data seem reasonable. Therefore, if it is appropriate to use these data for the stock of privately held and small OTC companies, the market-value totals over the whole period should tend to be satisfactory, despite shortcomings in the value for any particular year.

3. The estimates of the market value of private held and small OTC companies include the value of open-end investment companies which are not members of the ICI, nonlisted closed-ends, and other types of investment companies, since these companies' dividend payments are in the dividend residual. The value of these companies is not included in the total market value of all stocks, since they are registered with the SEC, and the value of all registered companies has been subtracted in arriving at an overall total. In the same way, listed closed-ends are in the NYSE and in the ASE totals, though they are not in the overall market-value total.

4. The value of wholly owned subsidiaries filing separate tax returns is included in the estimated market value of privately held and small OTC companies. Wholly owned subsidiaries include companies which could file consolidated returns since they are owned 80 percent or more by another company (95 percent before 1954), but which choose to file separate returns. It also includes companies which are completely, or largely, owned by other companies—for example, in the oil industry—but whose ownership is so divided that no one company owns as much as 80 percent of the subsidiary; in this situation, the subsidiary must file a separate return. Dividends paid by subsidiaries filing separate returns are included in total dividends paid by all U.S. corporations and are, therefore, included in the dividend residual, unless the subsidiaries have sufficient public ownership to be listed or traded OTC.

Subsidiaries which have little or no public ownership should really be excluded from the compilations, since they are, for all intents and purposes, part of their parent companies. In the absence of data on the importance of these subsidiaries, there seems to be no way of eliminating them. As discussed below, consolidated filing has increased in importance, so subsidiaries should now account for a smaller percentage of the estimated market value of all outstanding stock than they did in earlier years. In any case, though, these subsidiaries are not included in the estimated market value of all outstanding stock net of intercorporate holdings.

*e. Intercorporate Holdings*

The total market value of all outstanding stock was reduced each year by the ratio of dividends received by domestic companies from domestic companies to total dividend payments by domestic companies in that year. In computing these ratios, total dividends and capital gains distributions of mutual funds were subtracted from total domestic corporate dividend payments, and dividend income of mutual funds was subtracted from dividend receipts of domestic companies. (The dividend receipts data do not include capital gains income of mutual funds.) This adjustment permits the exclusion of stock held by mutual funds from intercorporate holdings. Data on the dividend income of mutual funds were unavailable; their dividend payouts were used as a proxy (since the funds are required to distribute almost all of their dividend income). In 1966 through 1968, intercorporate holdings were assumed to account for the same percentage of total outstanding stock that they accounted for in the years 1963–65.

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The data, as shown in Table VI-4, indicate that the ratio of dividends received to dividends paid declined from a level of about 20 percent in 1952 to a level of about 15 percent in 1963-65. This decline is surprising, considering the extent to which companies have acquired stock in other companies over the last 15 to 20 years. The decline is probably explained, in large part, by an increase in consolidated filings. In 1952, corporations filing consolidated returns accounted for 10 percent of all corporate assets and 17 percent of all dividend payments.<sup>9</sup> In 1965, they accounted for 25 percent of all assets, and 41 percent of all dividend payments.<sup>10</sup> While some of the increase may simply reflect mergers which have occurred during the period (if two previously independent companies merge, they may then file consolidated returns), a large part of the increase probably reflects the fact that subsidiaries which previously filed separate returns are now filing consolidated ones. There were significant changes in the tax laws affecting consolidated returns in both 1954 and 1964; in these two cases, especially in 1964, there was a sharp increase in the number of consolidated returns filed immediately after the law was changed. What has apparently happened, therefore, is that some subsidiaries which used to be in the intercorporate total are no longer recorded as such.

### *f. Treasury Stock*

The market value of stock listed on the NYSE and the ASE includes Treasury stock (shares held in corporate treasuries for stock options, acquisitions, conversions of convertible debentures, and so forth). While the SEC Annual Reports made no specific statements on the subject, it seems likely that the OTC market-value data also included the value of Treasury stock. If stockholdings of the household sector are to be derived as a residual after subtracting all other ownership groups' holdings from the total value of outstanding stock (including Treasury stock), the residual will then be too large. A quick check of a few companies in one year indicated that Treasury stock was insignificant for large companies, but accounted for as much as 10 percent to 20 percent of the total number of outstanding shares of smaller companies.

### 3. SOURCES OF ERROR IN THE ESTIMATES

Most sources of error in the estimates of the market value of all outstanding stock have already been discussed in the description of the

<sup>9</sup> Internal Revenue Service, *Statistics of Income—1952, Corporation Income Tax Returns*, p. 74.

<sup>10</sup> Internal Revenue Service, *Statistics of Income—1965, Corporation Income Tax Returns*, p. 201.

TABLE VI-4  
Dividends Paid and Received by U.S. Corporations, 1952-65

(*Million*)

	Dividends Paid			Dividends Received			Ratio of Dividends Received to Dividends Paid
	All U.S. Corporations <sup>a</sup>	Investment Companies <sup>a</sup>	All U.S. Corporations Except Investment Companies <sup>a</sup>	All U.S. Corporations <sup>b</sup>	Investment Companies <sup>b</sup>	All U.S. Corporations Except Investment Companies <sup>b</sup>	
1952	11,262	280	10,982	2,350	175	2,175	19.8%
1953	11,601	280	11,321	2,389	200	2,189	19.3
1954	11,913	380	11,533	2,332	225	2,107	18.3
1955	13,592	533	13,059	2,572	268	2,304	17.6
1956	14,498	665	13,833	2,688	315	2,373	17.2
1957	14,914	695	14,219	2,681	365	2,316	16.3
1958	14,951	725	14,226	2,829	412	2,417	17.0
1959	16,242	942	15,300	2,948	460	2,488	16.3
1960	17,193	980	16,213	3,084	520	2,564	15.8
1961	18,038	1,135	16,903	3,276	565	2,711	16.0
1962	19,565	1,158	18,407	3,645	595	3,050	16.6
1963	21,105	1,162	19,943	3,592	630	2,962	14.8
1964	23,305	1,355	21,950	4,022	740	3,282	15.0
1965	25,997	1,845	24,152	4,521	845	3,676	15.2

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### Notes to Table VI-4

SOURCES: Internal Revenue Service, *Statistics of Income—1965, Corporation Income Tax Returns*, Washington, D.C., 1969; Moody's Investors Service, *Moody's Bank and Finance Manual*, New York, 1966.

<sup>a</sup> Includes capital gains distributions.

<sup>b</sup> Excludes capital gains income. Investment companies' dividend payouts are used as a proxy for their dividend receipts.

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derivation of the market value of privately held and small OTC companies; errors arising from the assumption that 20 percent of these companies are non-dividend-payers, errors in the size of the dividend residual, and errors arising from the use of the yield data derived from the sample of ASE stocks. There is one additional source of error, arising from a situation the reverse of that caused by the filing of separate tax returns by wholly owned subsidiaries.

A company could be 90 percent, or even 99 percent, owned by another company and file a consolidated return with its parent, while still having enough shareholders to be listed on an exchange, or more probably, to be traded OTC. The total market value of the stock of such a company would be included in the value of listed or OTC stock, but no deduction would be made for that fraction of the company's shares held by its parent corporation, since the IRS would not record either its dividend payments or the dividends received by the parent company from its subsidiary. Western Electric is an example of such a company. Having attained 300 shareholders of record, it was first included in the OTC universe of the SEC in 1960. However, since the company filed a consolidated return with AT&T, that fraction of its shares and market value owned by AT&T (over 98 percent) would not be subtracted in arriving at an estimate of intercorporate holdings.

Under such circumstances, the value of intercorporate holdings is understated, and the market value of all outstanding stock net of intercorporate holdings is overstated. There are not likely to be very many companies which file consolidated returns, but which have a sufficient number of shareholders to be listed or traded OTC; however, there are probably several large companies in this category (including the above mentioned Western Electric and other subsidiaries of AT&T), and they might account for several billion dollars in market value.

#### 4. MARKET VALUES BY INDUSTRY

Table VI-5 shows the industrial distribution of the market value of all outstanding stock. The following procedure was used to obtain these

TABLE VI-5  
Market Values of the Outstanding Stock of Domestic Corporations, by Industry, 1952-65

(year-end values; \$billion)

Industry	1952	1953	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Aircraft	1.6	1.9	4.7	3.2	4.6	4.5	4.4	4.8 <sup>a</sup>	5.7	6.4	8.5	14.7
Amusement	1.8	1.3	1.7 <sup>a</sup>	1.5 <sup>a</sup>	2.4 <sup>a</sup>	1.8	2.4	3.0	2.3	3.1	3.8	4.8
Automotive	11.3	9.8	20.6	15.3	22.6	27.3	20.6	28.7	27.1	36.2	43.7	47.5
Building trades	1.4 <sup>a</sup>	1.3 <sup>a</sup>	3.0 <sup>a</sup>	2.9 <sup>a</sup>	4.5 <sup>a</sup>	4.7 <sup>a</sup>	4.8 <sup>a</sup>	6.0 <sup>a</sup>	4.8 <sup>a</sup>	5.2 <sup>a</sup>	5.6 <sup>a</sup>	6.8
Chemical	24.6	24.7	42.2	38.3	53.0	67.0	62.1	72.9	77.6	90.3	111.0	96.1
Electrical equipment	9.6	10.0	16.3	15.7	22.9	41.6	41.3	52.0	39.8	49.3	50.4	65.5
Financial (incl. investment companies)	34.6	32.9	46.2	54.3	72.8	89.0	92.9	140.8	111.8	135.8	148.3	190.2
Food products	9.7	11.5	11.0	11.3	16.8	17.0	22.7	30.3	25.1	28.3	32.8	38.0
Leather	0.6	0.5	0.6	0.5	0.8	0.9	0.9	0.9	0.9	1.4	1.7	2.1
Machinery and metals	9.4	9.6	16.2	13.3	17.4	27.1	26.4	30.1	22.8	24.8	29.7	42.7
Mining	4.1	3.5	9.5	5.9	9.9	10.4	8.4	9.9	7.6	8.7 <sup>a</sup>	9.6 <sup>a</sup>	12.2 <sup>a</sup>
Office equipment	2.7	2.8	8.0	9.5	13.9	6.3	8.8	17.5	12.3	23.1	23.7	46.1
Paper and publishing	8.6	9.7	16.8	15.0	20.9	20.5	19.1	22.6	17.3	20.6	28.4	31.3
Petroleum and natural gas	34.9	33.6	61.2	46.3	65.0	53.9	53.0	64.8	69.4	95.3	86.7	95.9
Railroads and railroad equipment	8.3	7.2	8.6	5.9	9.0	8.9	7.6	9.2	8.7	10.8	12.6	14.4
Real estate	4.7	4.1	5.2	3.5	7.5	10.2	7.9	10.7	8.6	17.3	16.6	19.8
Retail trade	11.4	12.1	12.5	12.4	19.8	22.4	22.6	35.3	27.4	32.2	48.9	47.8
Rubber	1.9	1.8	3.9	3.7	5.1	7.8	4.5	6.1	4.5	5.4	6.1	6.7
Shipbuilding	0.9	0.9	1.9	1.6	1.6	0.8	1.2	1.1	1.5	1.4	1.8	2.0
Steel and iron	8.0	7.3	17.4	11.5	18.8	20.9	15.8	20.5	13.8	17.8	22.7	25.9
Textile	4.5	3.8	3.7	2.5	4.5	5.1	4.1	6.4	5.8	7.3	11.9	12.9
Tobacco	2.0	2.0	2.1	2.3	3.2	3.6	4.6	7.7	4.2	4.6	4.7	5.4
Utilities	31.4	31.1	47.3	44.6	63.8	68.8	82.1	107.9	96.1	109.9	124.6	111.5
Total	228.0	223.4	360.6	321.0	460.8	520.5	518.2	689.2	595.1	735.2	833.8	940.3

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### *Notes to Table VI-5*

SOURCE: See text.

<sup>a</sup> New York Stock Exchange market value only.

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estimates. Limitations of the procedure are discussed following the explanation.

Dividend data by industry for domestic stocks listed on the New York Stock Exchange (encompassing only dividends paid on common stock) were obtained from the exchange. Dividend data for all domestic corporations (representing payments on both common and preferred stock) were obtained from IRS Statistics of Income, and were placed on a basis comparable to that of the NYSE.<sup>11</sup> That is, the IRS does not necessarily assign industrial subgroups to the same industries to which they are assigned by the NYSE. Since dividend data by industrial subgroups were available only from the IRS, the IRS industry categories were brought into conformity with those of the NYSE. Table VI-6 shows the IRS industrial subgroups contained within each NYSE industry.

NYSE dividends were then subtracted from IRS dividends in order to obtain estimates of the industrial distribution of non-NYSE dividends.<sup>12</sup> Market value-dividend ratios by industry were then derived for companies listed on the NYSE, using year-end data on industry market values for common stocks. These ratios were applied to the estimates of non-NYSE dividend payments by industry in order to obtain preliminary estimates of the industrial distribution of the market value of stocks not listed on the NYSE.

<sup>11</sup> Dividend data for industrial subgroups were not available from the IRS in 1954 or 1955; therefore, industry totals were not derived in these two years. A small percentage of IRS dividends (less than 8 percent in most years) were not classified by industry; these dividends were contained in an "all other" category, or they represented payments by industrial subgroups for which the appropriate NYSE industry could not be determined. Similarly, before 1959, a small percentage of NYSE dividends (less than 2 percent) were not classified by industry; these dividends were contained in an "all other" category or in a category labeled simply "U.S. companies abroad."

<sup>12</sup> The farm machinery industry was excluded in these calculations. Dividend data for the industry were available from the IRS and the NYSE only through 1958; after 1958, the industry's dividends were included in the machinery and metals category. Totals for the service industry (as reported by the NYSE after 1958) were also excluded, since the comparable IRS industry could not be determined.

TABLE VI-6

Internal Revenue Service Industry Subgroups Contained Within the  
New York Stock Exchange Industry Categories

NYSE Industry	IRS Industrial Subgroups Contained in This Industry
Aircraft	Aircraft and parts; air transportation
Amusement	Motion pictures; amusement, except motion pictures
Automotive	Motor vehicles and equipment; urban, suburban, and interurban transport; trucking and warehousing; other motor-vehicle transportation
Building trade	Construction
Chemical	Chemical and allied products; stone, clay, and glass products
Electrical equipment	Electrical machinery and equipment; scientific instruments, photographic equipment, watches
Financial	Finance; insurance; lessors of real property
Food products	Food and kindred products; beverages
Leather	Leather
Machinery and metals	Fabricated metal products; machinery, except transportation and electrical (excluding office equipment and, before 1959, agricultural machinery)
Mining	Mining and quarrying (excluding crude petroleum and natural-gas production)
Office equipment	Office equipment; furniture and fixtures
Paper and publishing	Paper and allied products; printing and publishing; lumber and wood products
Petroleum and natural gas	Crude petroleum and natural gas; petroleum and coal products
Railroad and railroad equipment	Railroad transportation; railroad equipment
Real estate	Real estate, except lessors of real property other than buildings
Retail trade	Retail trade
Rubber	Rubber products
Shipbuilding	Ship and boat building; water transportation
Steel and iron	Primary metal industries
Textile	Textile and mill products; apparel manufacture
Tobacco	Tobacco
Utilities	Communications; electric and gas; other public utilities

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These data were then adjusted each year by applying the following ratio (from that year's data) to each industry total:

$$\left. \begin{array}{l} \text{The total market value of all} \\ \text{outstanding stock} \\ \text{minus} \\ \text{the market value of all NYSE} \\ \text{stock} \end{array} \right\} \begin{array}{l} \text{The sum of the preliminary} \\ \text{estimates of the market values of} \\ \text{non-NYSE industries} \end{array}$$

In these calculations, the total market value of all outstanding stock includes the value of investment companies, since the dividend totals for the financial industry include dividends paid by investment companies. Similarly, the value of investment companies is included in the value of NYSE stock.

This procedure, in a very rough way, adjusts for the fact that price-dividend ratios may not be the same for both NYSE and non-NYSE stocks. It also adjusts, again in a rough way, for the exclusion of IRS dividends in the "all other" category, as discussed below.

The adjusted estimates of the market values, by industry, of the outstanding corporate stock of non-NYSE companies are added to the NYSE industry market-value totals (including both common and preferred stock) in order to obtain the final estimates of the market value of all outstanding corporate stock by industry (including investment companies).<sup>13</sup>

These are the limitations of the procedure employed here:

(a) The NYSE and the IRS may not always assign particular companies to the same industry, since the NYSE does not necessarily follow the Standard Industrial Classification. As a result, there may be a lack of comparability between the IRS industry data and the NYSE industry area. A similar problem arises when the IRS, but not the NYSE, transfers a company from one industry one year to another industry the following year.

<sup>13</sup> Because of a few minor adjustments and discrepancies, the sum of the adjusted industry totals is less than the market value of all outstanding stock (including investment companies) throughout the whole period. For example, in one or two cases every year, reported dividend payments by NYSE companies in specific industries exceeded total dividend payments by that industry as reported by the IRS. Market value data for these industries represent only reported NYSE market values. Also, NYSE market values for the "all other," farm machinery, services, and "U.S. companies abroad" industries are excluded from the overall market value totals in the procedure followed here.

(b) The IRS may, on occasion, transfer industry subgroups between industries. The year-to-year comparability of the IRS industry classifications would have to be examined in order to obtain more accurate industry totals.

(c) The IRS data include both common and preferred dividends, while the NYSE data include only common dividends. Since the industrial distribution of common and preferred dividends is likely to differ, an error of unknown magnitude is introduced into the results.

(d) As previously indicated, a small percentage of IRS dividends was in an "all other" category, or was in industrial categories for which the comparable NYSE industries could not be determined. However, NYSE-listed companies which are in these various categories do end up in some industry in the NYSE classification. The procedure used here assumes that the industrial division of the companies contained in these IRS categories corresponds to the industrial division of the preliminary estimates of the market value of non-NYSE companies.

## 5. COMPARISON WITH OTHER ESTIMATES

The overall market-value totals derived here are slightly larger than the values reported by the SEC between 1952 and 1954, and are smaller between 1955 and 1958 (when the two series are put on a comparable basis by excluding from the SEC series the amount of listed and unlisted foreign stock outstanding in the United States). The values derived here become slightly larger again in 1959, and the difference between the two series becomes steadily more pronounced after 1964. By the end of 1968, the discrepancy amounts to \$312 billion, or 42 percent of the SEC total.

The basic reason for the growing discrepancy in the 1960's is the differential price behavior of stocks listed on the NYSE, the ASE, and those traded OTC. The SEC data are obtained by extrapolating a 1960 benchmark figure on the basis of changes in Standard and Poor's 500-Stock Price Index, which includes only stocks listed on the NYSE. However, OTC prices started increasing more rapidly than NYSE prices after 1960, while ASE prices started increasing more rapidly after 1966. Therefore, the use of a price index based solely on NYSE price changes creates a constantly increasing divergency (at least, throughout a good part of the 1960's) from actual market values.

The values derived here are somewhat larger than the values reported by the Federal Reserve Board between 1952 and 1954, and are smaller between 1955 and 1960 (when the two series are placed on a comparable basis). The values derived here become larger again in 1961, and remain

larger through 1968, but they are much closer to the FRB totals than to those of the SEC. The Federal Reserve Board data are apparently derived by applying a constant multiplier to the total value of listed stock (that is, it is assumed that the value of OTC and privately held stock increased in proportion to the increase in the value of listed stock). Even though OTC prices increased more rapidly than prices of listed stock during the 1960's, the discrepancy between the two series was apparently kept relatively small by new listings; that is, the increase in the number of companies listed on exchanges in the 1960's caused listed market values to rise considerably more rapidly than the rise shown by exchange price indexes.

The total derived here for 1960 is about \$25 billion, or 5 percent larger than the estimate derived by Crockett and Friend<sup>14</sup> (after the two estimates are placed on a comparable basis, since these authors included the value of investment companies as well as the value of foreign stock outstanding in the United States in their total, and used middle of the year, rather than year-end, values). The difference is completely in the OTC and privately held sector, as might be expected. It does not seem to be due to the fact that they estimated OTC market values through a dividend residual method, instead of using the SEC data. A small part of the difference is due to two minor errors made by Crockett and Friend. First, in obtaining a dividend residual to estimate the value of unlisted stock, they subtracted total dividend payments by listed companies from total dividends paid by U.S. corporations. This subtracts too much, since dividend payments by listed companies include payments by Canadian listed companies to their non-U.S. stockholders, though these amounts are not included in total dividend payments of all U.S. corporations. The subtraction of payments by Canadian listed companies to their U.S. stockholders is compensated for by Crockett and Friend when they add total dividend payments by foreign companies to their U.S. stockholders to total dividends paid by U.S. companies in arriving at their dividend residual. Their second error is the subtraction of total capital gains distributions from total U.S. dividend payments in arriving at a dividend residual. Since dividend payments reported by the NYSE include capital gains distributions, there is double counting; and, again, too much is deducted. As a result of these two errors, their dividend residual is too small by about 5 percent, and they underestimate market values by about \$5 billion.

<sup>14</sup> Jean Crockett and Irwin Friend, "Characteristics of Stock Ownership," American Statistical Association, *1963 Proceedings of the Business and Economic Statistics Division*, pp. 146-68.

By far the major part of the difference between the two estimates can be attributed to the treatment of non-dividend-paying stock, since Crockett and Friend use almost the same yield figure employed in this analysis to blow up their 1960 dividend residual. They estimated that 9 percent of the market value of OTC stock (except banks and insurance companies) was non-dividend-paying and used this percentage for both OTC industrial stock and for privately held stock. Their estimate was based on a sample of 300 OTC companies drawn from the National Stock Summary.

In this analysis, a 20 percent figure was used for privately held and small OTC companies. Use of a 9 percent figure would reduce the estimate of the market value of these companies by about \$12 billion. In addition, in estimating dividends paid by large OTC industrial companies, it was assumed here that 33 percent of the market value of these companies was non-dividend-paying (based on the ASE sample). Use of a 9 percent figure would increase estimated dividend payments by large OTC companies by \$370 million. This would reduce the size of the dividend residual by 11 percent, and reduce the estimate of the market value of the stock of privately held and small OTC companies by another \$9 billion.

Consequently, not only are the estimates of the market value of privately held and small OTC companies strongly influenced by the yield data employed in the analysis, but they are also affected by the assumed importance of non-dividend-payers. This affects the market-value total directly, and affects it indirectly by influencing the size of the dividend residual.

## 6. SUGGESTIONS FOR FURTHER RESEARCH

### *a. Estimates of the Market Value of Privately Held and Small OTC Companies*

These estimates could be improved in two ways. First, OTC industrial stocks could be sampled each year to determine the importance of non-dividend-paying companies. This would improve the estimates of the amount of dividends paid by large OTC industrial companies, and would improve the accuracy of the dividend residual. Second, unpublished IRS data could be examined, if possible, to determine whether they provide any information on the number of privately held companies paying dividends.

### *b. Estimates of the Value of Intercorporate Holdings*

These estimates could be improved if additional information about wholly owned subsidiaries were available from the IRS; that is,

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dissemination of information, for each of the years covered by the analysis, about the number and importance of subsidiaries which had filed separate returns in the previous year but were now filing consolidated returns. The data show a sharp increase in the importance of corporations filing consolidated returns. Presumably, though, only part of this increase reflects a change in corporate filing practices; a part must reflect new corporate acquisitions during the period. If the two components could be separated, the data on intercorporate holdings could be placed on a fairly consistent basis.

### *c. Estimates of the Value of Treasury Stock*

Estimates of the value of Treasury stock could be obtained by sampling listed and OTC companies in selected years during the period covered by the analysis.

### *d. Estimates of the Total Value of Outstanding Corporate Stock*

As indicated earlier, an error is introduced into the estimates because of wholly owned subsidiaries which file consolidated tax returns, but which have a sufficient number of shareholders to be listed on an exchange, or to be traded OTC. Some attempt could be made to determine the number and importance of those companies which fall into this category.