Price Spreads, Performance and the Seasoning of New Bond Issues

John S. Bildersee*

Working Paper No. 11-74

In equilibrium, each new capital asset must be priced properly relative to other assets. Moreover, if an investor can buy and sell assets in his portfolio costlessly and quickly, then the new asset will be accepted immediately and fully into the market and it will immediately behave as though it is a seasoned or previously available asset. However, it is often argued that recently issued bonds and seasoned or fully distributed bonds behave differently due to the frictions associated with distributing a new security in the market. Moreover, recently issued bonds undergo a behavioral transformation as they become seasoned bonds. According to this argument there are some significant empirical differences between recently issued bonds and seasoned bonds. Additionally, these differences disappear as the market gradually absorbs the new bond issue and that issue becomes a 'seasoned' bond.

After outlining some of the characteristics that may differentiate recently issued and seasoned bonds and after describing the sample of recently issued U.S. government and Agency bonds, the bid-ask price spreads and the performance of these securities will be examined to observe statistical differences between the markets for recently issued and fully distributed bonds. As it turns out, there are differences between these markets and there is a definite adjustment process but the structure and speed of the process differs with differences in market structure.

*Assistant Professor, University of Pennsylvania. This study was supported by the Rodney L. White Center for Financial Research at the University of Pennsylvania.

II. Some Aspects of the Differential Behavior of Recently Issued and Fully Distributed Bonds

When a bond issuer, either directly or indirectly, distributes a new bond in the market that bond is thought to face temporary market conditions different from those faced by seasoned securities. In particular, there is a sudden, large supply of a new, unique security in the market. Also, for a fully successful distribution of the new bond issue the market must support a rapid, 100% turnover of the new bond from the issuer to investor portfolios rather than merely support the turnover typically generated in the secondary market. Insofar as the market does not adjust instantaneously and completely to these temporary market conditions, the performance of recently issued securities may differ from the performance of seasoned securities. In order to facilitate the acceptance of a new issue, dealers and investment bankers often accept large temporary positions in these issues so as to guarantee the issuer his desired capital and/or to encourage the development of an orderly market for the security.

Support for the new security is often necessary as portfolio adjustments, although rapid, are not instantaneous in practice. In particular, purchase of a new issue means the commitment of cash and the loss of liquidity or the sale of another asset and, possibly, secondary portfolio adjustments with some transactions cost. Additionally, there is normally a steady stream of new investment opportunities that are competing with each other for the investor's funds and which are at a common disadvantage to fully distributed securities. Resultingly, there is

likely to be repeated portfolio rebalancing as a given new security competes with older assets and with other new assets.

In this environment the market for a new security may be different from that for seasoned securities. To encourage investment in the new issue, the issuer may offer a yield on the security that is marginally above the yield for comparable, but fully distributed securities. Moreover, since market makers often are prepared to support market prices for a new issue temporarily in order to encourage and enable the portfolio rebalancings necessary to absorb that security into the market, it is possible that recently issued securities outperform fully distributed securities with comparable risks and terms to maturity temporarily after the issue of the security.[1] There may also be a relatively large amount of trading in the recently issued security compared to trading in fully distributed securities. Because of this relatively rapid turnover, it is likely that the market for the recently issued security exists continuously and can be serviced efficiently resulting in a relatively low cost per transaction. This results in small bid-ask price spreads for recently issued securities relative to those for fully distributed securities. Finally, the necessity of supporting a market in a new security varies with the initial desireability of the new security, with current market conditions and with the relative uniqueness of a given new issue so it is possible that some issues effectively enter the market at no disadvantage to seasoned bonds while others take a relatively long period to be accepted fully as seasoned bonds.

As special support is withdrawn from recently issued securities and these securities become more fully distributed, it is likely that yields will coincide more closely with those for fully distributed securities; that abnormally good performances will not continue to accumulate and that price spreads will increase toward those typical of fully distributed securities.

III. The Sample

The differences in bid-ask price spreads and the performances discussed above will be examined via samples of marketable U.S. Government notes and bonds and Federal Agency and related notes and bonds. U.S. Government bonds are included in the sample if they were issued between March, 1953 and May, 1971 and if they had original terms to maturity of at least 3 years. However, the 1½% notes issued every April and October are excluded.[2] Agency and related securities include Federal Land Bank, Federal Intermediate Credit Bank, Bank for Cooperatives, Federal Home Loan Bank, Import-Export Bank, Interamerican Bank and World Bank Bonds issued between January, 1965 and May, 1971 with original terms to maturity of at least 3 years. However, participation certificates are excluded.

May, 1971 is the cutoff date for the sample due to the design of the study. At least 2 years of monthly price and performance data were required for each security in the study. Additionally, the sample is restricted to those securities with original terms to maturity of at least 3 years so that at least 1 year of aging remains for any bond in the sample after using 2 years of data. If less time were left, then the approaching maturity date could have a substantial impact on the pricing and performance

pattern associated with the security in question. Each new bond is followed for 2 years as it is assumed initially that the bonds in the sample are fully seasoned within 2 years after issue. Empirically, it appears that the 2 years of data allow the impact of seasoning to be captured completely. Table 1 indicates the grouping of the securities based on their original terms to maturity and shows the sizes of the various samples used here. Due to the different issuing policies of the U.S. Government and of the agencies the various samples used here vary considerably in size.

The price spread data and the performance data presented here are based on month-end bid and ask price data and include coupon accrual.[3] However, any empirical results listed as occurring 1 month after issue can actually occur anywhere from 15 days to one month after the actual issue in the government securities case. This is due to government issuing policies. In the case of the agency securities the first bid-ask price spread is anywhere from a few days to 1 month after the actual issue of the security. This increased range of possibilities occurs due to the variety of issuing patterns employed by the agencies. Although this range of issue dates may raise questions about specific numerical results, it has no systematic impact on the pattern of the results discussed here as long as the patterns manifest themselves over time periods in excess of a month.[4]

The issue date problem could be the source of several biases. First, if price spreads increase as new bonds become fully distributed, then those secirities which are issued later in the month than other securities will have systematically smaller bid-ask price spreads because they have had less time to be distributed. Second, the differing

issue dates are likely to cause increased dispersion around any average bid-ask price spread making dispersion measures relatively unimportant, particularly for the first few months after issue. Finally, any statistics generated for the first fractional month of a security's existence are, strictly speaking, not comparable to those of other securities issued with a different number of days remaining in the month. In practice, none of these problems has significant impact on the empirical analysis.

Although 2 years is assumed to allow for the complete seasoning or distribution of a new bond, it was possible, a priori, that the complete distribution of a new bond occurred between the issue date of the bond and the end of that calendar month. If so, then the monthly data used here would not capture the impact of seasoning on recently issued bonds. To minimize this problem, the performance of the new issue, including daily interest accrual, will be examined for the first fractional month of its existence. For this analysis it will be assumed that the new bond is issued at par.

In order to examine the spreads and the performance within the context and structure of the markets in which they were seasoned, it is helpful to have bond performance and bond spread indexes. Appropriate government bond performance indexes were available from (3). Comparable agency performance indexes and government and agency spread indexes were generated for the full samples of all publically marketed, non 1-1/2% U.S. government bonds and notes and all publically marketed, non-participation certificate, Agency and related securities.

Since the data are taken from the largest and best known markets in the world where the issuers have well known commonalities, often issue their own securities directly, need relatively little support from market makers and where there is little or no chance of bankruptcy, any results obtained here indicate the minimum pure impact of the seasoning of bond issues. However, since the results stated here are based on averages across many bonds single bonds may become fully seasoned more quickly or more slowly than indicated here.

IV. The Impact of the Seasoning of Bonds

It has been suggested that the seasoning of bonds has impact on the yields, bid-ask price spreads and the performance of the securities. In this section both the bid-ask price spreads and the performance of securities will be examined relative to the spreads and the performance of indexes of seasoned securities.

A. The Impact of Seasoning on Bid-Ask Price Spreads

The average bid-ask price spreads for intermediate and long-term government securities issued between March, 1953 and December, 1964 are listed in Part A of Table 2. With the exception of the spread after 24 months for securities with a 3 - 4 year original term to maturity (OTM), the minimum typical bid-ask price spread occurs within a month after the initial issue of the security. If the bid-ask price spread on a security is an indicator of the trading activity in a security, the portfolio rebalancing associated with the issue of a security is still going at the end of the calendar month including the issue of the security.

However, the bid-ask spread for the typical security increases quickly after the first month through the fourth month after issue. Thereafter, the spread changes little throughout the first two years after the security's issue as the security has become fully distributed within the first several months after issue.

The average spreads listed here are generally not significantly different from each other due, at least in part, to the small samples. However, the patterns described here persist despite a change in the typical absolute spread during the January 1965-May 1971 period. In Part B of Table 2, the pattern is weakest. However, note that there are relatively few issues included in these samples. Also, no long-term securities were issued by the government and the range of the OTM is small. From Part C of the table the bid-ask price spreads for agency securities have the same patterns as those described for the government securities. Moreover, in this relatively large sample difference of the means tests suggest that the average bid-ask price spreads 1 month after issue are significantly lower than those several months later.

To examine the size of the spreads listed in Table 2 relative to the spreads for typical seasoned bonds in the market, each spread was compared to an index of price spreads for securities with the appropriate term to maturity at the appropriate point in time. A comparison of Parts A and B of Table 3 shows that spreads for recently issued government securities are small relative to those for fully seasoned securities. However, the spreads for recently issued securities increase relative to those for seasoned securities and, from each part of Table 3, the ratio approaches 1 from below as bonds become fully distributed during their first 6 months after issue.

Although the discussion has thus far emphasized the impact of seasoning on price spreads, some characteristics of spreads which are observable here exist in both the market for recently issued bond and in the market for seasoned bonds. From Table 2, spreads for recently issued bonds decrease with decreases in their OTMs (and in their remaining terms to maturity). However, from Table 3, the average ratio of a security's spread to the spread index is not a function of the remaining term to maturity associated with the index. As a result, the level of the index itself must decrease with decreases in the remaining term to maturity. Then the decrease in abosolute price spreads in any single part of Table 2 is a function of a security's remaining term to maturity and not its OTM, and the decrease in the absolute spreads for the securities with OTMs of 3-4 years mentioned above represents the impact of the remaining terms to maturity for these securities.

The aforementioned different bid-ask price spreads between the 1953 - 1964 and 1965 - 1971 shown in Table 2 are due to a change in the structure of the government bond market. The Joint Treasury-Federal Reserve Study of the U.S. Government Securities Market of 1970 says that, according to the dealers, "the market's belief in some officially approved range of market fluctuations (was) abruptly shattered during the late summer and autumn of 1965 when interest rates rose sharply." Moreover, various government trust accounts began to operate less often in the intermediate and long-term bond markets and with no apparent interest rate objectives.[5] With the resulting increase in market making risk, bid-ask price spreads increased for the entire set

of government securities. Moreover, insofar as there has been a continuous increase in bid-ask price spreads over time, the lower average bid-ask price spreads for U.S. government securities with OTMs of 4-5 years than for those with OTMs of 3-4 years is an anomaly of the data as, in each sample, the longer term securities were, on average, issued before the shorter term securities and might therefore have had lower bid-ask price spreads. Additionally, the spreads for the agency securities are everywhere larger than those for the corresponding government securities because the agency markets are less highly developed than the government markets.[6]

The ratios in Table 3 are slightly understated because of a general upward trend in interest rates during the sample period and because price spreads are a function of the bond's price level. In particular, consider an n period bond with a price spread $= P_A - P_B$ where P_A and P_B are the ask and bid prices respectively. The bond has a ask yield (r_A) and a bid yield (r_B). Then

$$P_A = \sum_{t=1}^{n} C(1 + r_A)^{-t} + F(1 + r_A)^{-n} \text{ and } P_B = \sum_{t=1}^{n} C(1 + r_B)^{-t} + F(1 + r_B)^{-n}$$

where $r_B > r_A$, C is the coupon and F is the face value of the bond. If the bid and ask prices fall, but the same price spread obtains, then the yields increase and the difference between the bid and ask yields increases. Algebraically,

$$dP_A = \left[\sum_{t=1}^{n} - tC(1 + r_A)^{-(t+1)} - nF(1 + r_A)^{-(n+1)}\right] dr_A;$$

$$dP_B = \left[\sum_{t=1}^{n} - tC(1 + r_B)^{-(t+1)} - nF(1 + r_B)^{-(n+1)}\right] dr_B \text{ and}$$

$dP_A = dP_B$.

Since r_B is greater than r_A, this set of relationships implies that dr_B is greater than dr_A and, coincident with the decreased price level, there is an increased bid-ask yield spread. In turn, this means that bonds with 'low' prices but with the same bid-ask price spread as bonds with the same maturity and 'high' prices will have larger bid-ask yield spreads than will the 'high' priced bonds. The increased yield spread on low priced bonds effectively increases the friction in the markets and may restrict trading. Due to this trading restriction, it is more expensive for dealers to make markets in the low priced securities and bid-ask price spreads should actually be larger for bonds with low prices than for similar bonds with higher prices (and higher coupons). Due to the general increase in interest rates throughout the sample period, bonds issued relatively early in the sample period or before the sample period typically had low coupons and 'low' prices relative to those bonds issued later in the period and, resultingly, had larger bid-ask price spreads. Moreover, since each index was typically made up of bonds issued before the bond under examination, it is likely that each index represents those bonds with discount prices and the relatively large price spreads biases the index up slightly and the ratio down slightly on average.

This dimension of bid-ask price spreads was examined for each OTM sample with at least 10 observations. These samples were split into 3 subsamples based on ask price levels and a comparison was made between the means of the bid-ask price spreads of the two extreme

subsamples. In particular, the top 40% of the observations were called high priced bonds and the bottom 40% of the observations were called low priced bonds. The observations with OTMs of 4-5 years, 5-10 years and over 20 years, representing 27 pairs of observations in total, met minimum qualifications for the 1953 to 1964 sample. There are 54 available pairs for the 1965 to 1971 government and agency samples. The pattern of results in Table 4 are significant at the 5% level for the large sample and at the 10% level for the small sample if the pairs with identical means are dropped or if they are attributed evenly to each of the other results. If these data are split into those observations occurring prior to 6 months after the original issue and those observations occurring 6 months or more after the original issue, the same results persist suggesting that the differential spreads relative to price levels appear to be independent of the degree of seasoning of the bond.

B. The Impact of Seasoning on Bond Performance

The additional activity in recently issued bonds may also result in abnormal returns to these bonds. In order to examine this, the wealth relatives of the recently issued bonds are deflated by the appropriate bond indexes obtaining a measure of performance of the recently issued bonds relative to fully distributed bonds with the same maturity and risk. The examination of the performance of recently issued securities begins with the first available wealth relative for these securities. However, since it occurs with the end of the second calendar month (the first full month) after the bond is issued, there are only 23 months of cumulative performance data for each bond.

Typical average cumulative deflated wealth relatives are displayed in return form in Table 5, Parts A, B and C. From Table 5 it can be seen that the first average deflated return for the recently issued bonds is greater than zero in 11 of 13 cases. Although the abnormal returns are positive they are often small. After the first observation there is no pervasive pattern of cumulative deflated returns. However, by the end of the sample period 9 of 13 series of cumulative deflated returns fall from their initial levels and part of any abnormally great return over the first full month after issue is lost over the remaining portion of the sample period. Although any abnormal returns are small the bond indexes include the recently issued securities so that any initial large abnormal performance and later erosion of this excess performance is understated in this table. However, the general pattern is not distorted. As a result, the attempt to support the new issues market leads to temporary slightly excessive returns to those securities and that any excess returns are transitory in nature and disappear in the long run.

To examine the performance of recently issued securities during their first fractional month of existence wealth relatives were generated for this partial month. The relatives were compared to the appropriate indexes adjusted for the number of days that the given new issue was outstanding. It was assumed that any returns to the index accrued linearly. The equal weighted averages for the abnormal returns are in Table 6. 10 of the 13 cases had positive abnormal returns during the first fractional month. Since there is no control over how long any single bond had been outstanding during the first fractional month, the proportion of new bonds with abnormally good performance

during their first fractional month is also listed in the table. From the table it appears that the majority of recently issued bonds outperformed the market during the first fractional month of their existence.

V. Conclusions

Recently issued bonds have narrow bid-ask price spreads and abnormally good performances relative to those for seasoned bonds in the same markets. This may result from abnormally large trading activity in the recently issued security and from any special efforts to support the market and to encourage the purchase of these securities. However, any abnormalities observed here for recently issued bonds relative to fully distributed bonds fade away within the first several months of issue and bonds in the U.S. government and Agency markets become fully seasoned rapidly after their issue.

Although some features of bond performance and bid-ask price spreads change as the bonds become seasoned other features resist change. In particular, bid-ask price spreads remained relatively large for long-term securities and for those traded in less active markets. Finally, it appears that the bid-ask price spread on a bond is a function of its price level regardless of the seasoning of the bond (except, perhaps, during the days immediately after issue). In general, it appears that the bid-ask price spread of a bond is a very flexible statistic which can summarize the type and quality of the market that exists for a given security at any point in time.

*Assistant Professor, University of Pennsylvania. This study was supported by the Rodney L. White Center for Financial Research at the University of Pennsylvania.

Footnotes

[1] (4) and (5) look at the market for new equity issues. Scholes finds that the market is efficient in its response to secondary issue of a security. Stoll finds that new equity issues for small companies outperform the market initially and then under-perform the market.

[2] These securities had a unique, irregular origin. Resultingly, they would not have trading characteristics similar to those issued outright to the public by the U.S. government.

[3] The U.S. government data were obtained from Salomon Bros. quote sheets. The Agency data was obtained primarily from the New York Times and Wall Street Journal. Elaborate checking procedures have filtered out most errors. See (3) for a discussion of these checking procedures.

[4] For example, if the bid-ask price spread increases regularly for more than a month after issue, then the bid-ask price spread observed for '1 month' after issue will be smaller than that observed for '2 months' after issue regardless of the exact date of issue.

[5] See (1) for a discussion of the dealers' views on the government and agency markets from 1960 to 1970.

[6] These differences are also likely to be major sources of the yield differential between agency and government securities documented in (2).

Bibliography

1. Bernard, Normand R.V., "Views of U.S. Government Securities Dealers," Joint Treasury-Federal Reserve Study of the U.S. Government Securities Market, Staff Studies - Part I, Federal Reserve System (1970).

2. Bildersee, John S., The Comparative Performance of U.S. Government and Agency Securities, Rodney L. White Center for Financial Research, University of Pennsylvania, (1973).

3. _____, "Some New Bond Indexes," Journal of Business, (forthcoming, October 1975).

4. Scholes, Myron, "The Market for Securities: Substitution Versus Price Pressure and the Effects of Information on Share Prices," Journal of Business, (April, 1972).

5. Stoll, Hans and A.J. Curley, "Small Business and the New Issue Market for Equities," Journal of Financial and Quantitative Analysis, (September 1970).

Table 1

Samples Used in the Study

Original Term to Maturity	U.S. Government Securities Issued During 3/53-12/64	1/65-5/71	Agency Securities Issued During 1/65-5/71
3-4 years	7	5	34
4-5 years	14	3	18
5-10 years	29	13	29
10-15 years	2*	0	31
15-20 years	1*	0	7
Over 20 years	11	0	17
Total	64	21	136

*These small samples are not mentioned individually in the following tables. However, they are always included in bottom line totals.

Table 2

Average Bid-Ask Price Spreads

(In Dollars)

A. Government Securities - March, 1953 - December, 1964

		Months The Security has been Outstanding								
OTM	obs.	1	2	3	4	5	6	12	18	24
3-4 Years	7	$0.076	$0.089	$0.103	$0.103	$0.107	$0.116	$0.098	$0.089	$0.071
4-5 Years	14	0.074	0.087	0.098	0.103	0.105	0.105	0.103	0.105	0.100
5-10 Years	29	0.078	0.103	0.112	0.126	0.122	0.122	0.105	0.113	0.108
Over 20 Years	11	0.153	0.188	0.205	0.219	0.222	0.216	0.210	0.222	0.227
	64									

B. Government Securities - January, 1965 to May, 1971

		Months The Security has been Outstanding								
OTM	obs.	1	2	3	4	5	6	12	18	24
3-4 years	5	$0.087	$0.200	$0.200	$0.250	$0.250	$0.250	$0.250	$0.225	$0.225
4-5 years	3	0.063	0.209	0.208	0.208	0.208	0.208	0.250	0.250	0.250
5-10 years	13	0.108	0.202	0.202	0.207	0.240	0.240	0.298	0.288	0.327
	21									

Continuation of Table 2

C. Agency Securities - January, 1965 to May, 1971

OTM	obs.	Months the Security has been Outstanding 1	2	3	4	5	6	12	18	24
3-4 years	34	$0.313	$0.471	$0.577	$0.619	$0.686	$0.770	$0.844	$0.809	$0.801
4-5 years	18	0.438	0.569	0.757	0.826	0.840	0.840	0.924	0.889	0.896
5-10 years	29	0.629	0.726	0.823	0.767	0.966	0.841	0.974	0.922	0.935
10-15 years	31	0.690	0.766	0.855	0.859	0.976	0.968	0.992	0.992	1.020
15-20 years	7	0.607	0.821	0.786	0.839	1.000	1.000	1.000	1.000	1.143
Over 20 years	17	0.649	0.868	1.074	1.059	1.103	1.250	1.176	1.456	1.500
	136									

Table 3

Bid-Ask Price Spreads of Recently Issued Securities as Ratios of the Appropriate Spread Indexes for Outstanding Securities

Part A. Government Securities - March, 1953 to December, 1964

	Months the Security has been Outstanding								
OTM	1	2	3	4	5	6	12	18	24
3-4 years	0.659	0.923	0.982	1.000	1.000	0.929	0.971	0.949	0.920
4-5 years	0.611	0.827	0.876	0.913	0.920	0.977	0.918	1.004	0.910
5-10 years	0.528	0.732	0.785	0.826	0.847	0.828	0.847	0.874	0.922
Over 20 years	0.675	0.864	0.919	0.997	0.993	0.930	0.961	1.009	1.022

B. Government Securities - January, 1965 to May, 1971

	Months the Security has been Outstanding								
OTM	1	2	3	4	5	6	12	18	24
3-4 years	0.350	0.809	0.809	1.001	0.942	1.022	1.020	1.003	1.071
4-5 years	0.346	0.792	0.882	0.882	0.789	0.882	1.062	1.043	1.132
5-10 years	0.362	0.680	0.688	0.706	0.765	0.710	0.852	0.809	0.940

C. Agency Securities - January, 1965 to May, 1971

	Months the Security has been Outstanding								
OTM	1	2	3	4	5	6	12	18	24
3-4 years	0.349	0.565	0.698	0.731	0.803	0.912	1.037	1.124	1.172
4-5 years	0.477	0.624	0.826	0.820	0.946	0.928	1.035	1.067	1.251
5-10 years	0.618	0.736	0.840	0.806	1.000	0.873	1.013	0.960	0.973
10-15 years	0.726	0.813	0.838	0.840	1.010	0.980	0.966	0.918	0.849

Continuation of Table 3

C. Agency Securities – January, 1965 to May, 1971

	Months the Security has been Outstanding								
OTM	1	2	3	4	5	6	12	18	24
15-20 years	0.654	0.841	0.790	0.872	1.044	0.982	0.822	0.800	0.744
Over 20 years	0.477	0.679	0.859	0.874	0.837	0.878	0.786	1.006	1.023

* $Ratio_i = (\Sigma\ Spread_i)/(\Sigma\ Appropriate\ Spread\ Index_i)$

Table 4

Price Spreads and Price Levels

	Government Securities 1953 - 1964	Government and Agency Sec. 1965 - 1971
Smaller Price Spread For 'High' Price Level	15	34
Smaller Price Spread For 'Low' Price Level	7	17
Ties	5	3
Total Comparisons	27	54

Table 5

Average Cumulative Deflated Returns

A. Government Securities - March, 1953-December, 1964

OTM	Months the Security has been Outstanding 2	6	12	18	24
3-4 years	0.126%	0.189%	0.023%	0.008%	0.038%
4-5 years	0.298	0.203	0.137	0.159	0.289
5-10 years	0.105	0.149	0.049	0.242	0.238
Over 20 years	0.020	0.372	0.415	0.572	0.452

B. Government Securities - January, 1965 - May, 1971

OTM	Months the Security has been Outstanding 2	6	12	18	24
3-4 years	0.047%	0.130%	0.068%	0.087%	0.051%
4-5 years	0.221	0.193	0.051	-0.025	0.013
5-10 years	0.117	0.143	0.092	0.107	0.092

C. Agency Securities - January, 1965- May, 1971

OTM	Months the Security has been Outstanding 2	6	12	18	24
3-4 years	0.028%	0.063%	0.073%	-0.061%	-0.159%
4-5 years	0.334	0.286	0.032	0.091	0.109
5-10 years	0.322	0.285	0.055	0.410	0.533
10-15 years	0.469	0.692	0.753	0.513	0.356
15-20 years	-0.448	-0.548	-0.867	-0.624	-1.122
Over 20 years	-0.455	-0.310	-0.109	-0.460	-0.806

Table 6

Abnormal Performance During the First Fractional Month of Issue

	U.S. Government March 1953-Dec.1964		U.S. Government Jan.1965-May,1973		Agency Securities Jan.1965-May,1973	
3-4 years	Prop. With Wealth Relative Greater than 1	Avg. Abnormal Performance	Prop. With Wealth Relative Greater than 1	Avg. Abnormal Performance	Prop. With Wealth Relative Greater than 1	Avg. Abnormal Performance
3-4 years	4/7	0.256%	5/5	0.518%	19/34	- 0.004%
4-5 years	11/14	0.206	3/3	0.314	9/18	- 0.100
5-10 years	17/29	0.032	8/13	0.266	16/29	- 0.135
0-15 years	2/2	0.321	0		18/31	- 0.143
5-20 years	0/1	0.852	0		4/7	0.451
Over 20 years	9/11	0.107	0		9/17	0.408
Total	43/64		16/21		75/136	