

This PDF is a selection from an out-of-print volume from the National Bureau of Economic Research

Volume Title: Tax Changes and Modernization in the Textile Industry

Volume Author/Editor: Thomas M. Stanback, Jr.

Volume Publisher: UMI

Volume ISBN: 0-870-14483-9

Volume URL: <http://www.nber.org/books/stan69-1>

Publication Date: 1969

Chapter Title: DEPRECIATION EXPERIENCE SINCE 1954

Chapter Author: Thomas M. Stanback, Jr.

Chapter URL: <http://www.nber.org/chapters/c1190>

Chapter pages in book: (p. 30 - 45)

## *Chapter 3*

### DEPRECIATION EXPERIENCE SINCE 1954

TO EVALUATE the effect of depreciation changes on modernization expenditures, we need to know how promptly firms adopted the provisions for liberalized depreciation which were made available to them, and how much difference these changes made in their depreciation practices and in the internal cash flow generated. Such information does not provide us with a measure of the effectiveness of liberalized depreciation in stimulating modernization outlays via the demand or cash flow route or by influencing management attitudes toward replacement, but it does serve to establish whether there were serious limitations to the effectiveness of the liberalizing provisions arising either from tardy adoption or the insignificance of adoption with respect to depreciation practices.

#### ADOPTION OF THE 1954 INTERNAL REVENUE CODE PROVISIONS

Most of the firms included in this study were quite prompt in adopting the rapid depreciation methods for new depreciable facilities authorized under the provisions of the Revenue Act of 1954. Only one of the twenty-five companies had continued, as of the time of the interviews, to rely solely on the straight-line method. In contrast, fifteen of the firms apparently adopted an accelerated method in the taxable year 1954, the first year in which the new depreciation methods might be used. Distribution

of the firms by year of adoption of accelerated depreciation is shown in the following table.

<i>Year of Adoption</i>	<i>Number of Firms</i>
1954	15
1955	3
1956	1
1957	2
1959	1
Partial use since 1954	1
Continued straight-line	1
Information not certain	1

These findings are somewhat at odds with those noted by Norman Ture in his investigation of use of alternative depreciation methods under the Internal Revenue Code of 1954.<sup>34</sup> Ture found that as late as 1960, depreciation was calculated exclusively under the straight-line method by a large proportion (“probably between 70 and 75 per cent”) of all corporation income tax returns. Moreover, he also observed a pronounced tendency for larger corporations to adopt accelerated methods more promptly than smaller ones. Tax return data upon which Ture’s findings are based indicated that for the entire textile mill products group, 44 per cent of assets acquired from 1954 to 1959 were depreciated on a straight-line basis. For firms with assets totaling less than \$1 million it was 57 per cent; firms with assets totaling \$1–25 million, 53 per cent; firms with assets in excess of \$25 million, 42 per cent.

Our findings, on the other hand, are based on interview responses and on a comparison of the actual annual depreciation charges of each of the twenty-five companies with the charges that would have been generated each year had the firms been using the double declining balance method and a twenty-year average service life. Interview responses alone are not adequate for this purpose, since in many cases the executives could not re-

<sup>34</sup> Norman B. Ture, *Accelerated Depreciation in the United States, 1954–60*, p. 33.

call the dates at which the new depreciation methods had been adopted. Company reports to stockholders were also consulted, but in many instances the matter was not dealt with directly or was treated ambiguously.

In an effort to secure additional information, we used company data to simulate annual depreciation charges on the assumption that, beginning with the year 1954, capital additions (i.e., capital expenditures) were depreciated on a twenty-year basis using a double declining balance formula.<sup>35</sup> We then compared these estimates with recorded depreciation in an effort to determine whether actual experience indicated that accelerated depreciation had been used and, if so, to indicate the year in which accelerated depreciation practices were adopted. It was possible to check the simulation estimates with known company experience in enough cases to indicate that they were sufficiently dependable to serve as a basis for identifying the year in which accelerated depreciation was adopted. The method of identification was simply one of noting increases in actual depreciation series which could only be explained in terms of a shift to accelerated depreciation.

How, then, are the differences between our findings and Ture's to be explained? One possible explanation is that the sample used in this study does not adequately represent the cotton and synthetic spinning and weaving segment of the industry, particularly as the sample does not include a fair representation of firms with poor profit performances.

But available information relating to profitability provides only weak support for this explanation. Among the twenty-five firms within our sample, data on rates of return (after taxes) on stockholders' equity was available for fifteen. Among these firms there were ten with rates of return above the industry average<sup>36</sup> during the period 1954-62 (5.1 per cent), five with below average rates.

<sup>35</sup> The procedure used for computing this simulated depreciation is set forth in Appendix B. The assumption of a twenty-year service life rests upon statements made by a number of textile executives that in practice an average service life for all equipment was about twenty years.

<sup>36</sup> The industry average was compiled from Federal Trade Commission-Securities Exchange Commission, *Quarterly Financial Reports*, various issues.

In general, however, those firms with rates above the industry average did not exhibit especially high rates of return. Four of the ten firms with the higher rates had average rates of less than 6 per cent, and all had average rates of less than 9 per cent (the average for all manufacturing corporations was 10.3 per cent). In short, our sample would appear to be biased only slightly toward higher-than-industry average profitability.

On the other hand, some additional scraps of information were available which indicated that companies with very poor profit performance tended to delay adoption of the 1954 provisions for accelerated depreciation. It was possible to secure dates of adoption of accelerated depreciation, or to make estimates of such dates, for six firms producing cotton, synthetic cloth or both, which were not in our sample. In general, these firms were less prompt in adopting accelerated depreciation than were the twenty-five firms in the interview sample. Only one of the six permanently adopted the provisions in 1954. Among the remaining five, one adopted accelerated depreciation in 1956, one in 1957, one in 1962. Still another appears to have gone to accelerated depreciation in 1954 and, several years later, to have returned to a less rapid method. The sixth firm continued to use straight-line depreciation.

Analysis of the profits of these six firms established the following: The firm which permanently adopted accelerated depreciation in 1954 was one of the most profitable in the entire industry. The firm which adopted the new depreciation alternative in 1956 showed an average return on investment for the 1954-62 period of 5.1 per cent, the average return for the textile mill products industry. The remaining four firms showed quite low average returns of 3.3 per cent or less.

The sample may have failed to reflect the experience of firms which disappeared as a result of merger. One large firm in the sample has been reported as adopting accelerated depreciation in 1954. This was true for the parent corporation, but it was also true that this firm subsequently took over the assets of two medium sized corporations which adopted accelerated depreciation as late as 1959 and 1961.

## REDUCTION OF SERVICE LIVES—1961

The October 1961 change in Treasury regulations authorized firms in the textile industry to use materially shorter service lives for purposes of computing depreciation on tax returns than those stipulated in the Internal Revenue Service Bulletin F. The 1961 regulation permitted service lives of twelve years for finishing equipment and fifteen years for all other basic equipment in the industry, compared with the fifteen and twenty-five years stipulated in Bulletin F.

The effective reduction in service lives, however, is not so substantial as this comparison would suggest. Judging from the firms we investigated, a significantly large number of companies in the industry were already using shorter service lives for recently purchased equipment than those in Bulletin F. Nine of the twenty-five companies were using service lives about the same as those stipulated in the 1961 regulation, five were using service lives that were somewhat greater but still materially below those of Bulletin F, while another nine were using lives in line with the Bulletin F guides.<sup>87</sup>

The wide variation in experience appears to be attributable to differences both in management's aggressiveness in proving to tax agents that shorter lives were justified and in the willingness of the agents to depart from the old Bulletin F stipulations. A number of executives explained that in more recent years they had been able to justify the use of lives as short as those on the 1961 schedule and sometimes shorter by keeping records of replacement experience, while others stated that they had been unable to secure shorter lives. Still other firms seemed unaware that lives shorter than those of Bulletin F were possible prior to 1961.

A common complaint was that equipment used in producing synthetic textiles was depreciable on approximately the 1961 basis prior to 1961 whereas the same equipment producing cot-

<sup>87</sup> Shorter than Bulletin F service lives were applied primarily to equipment purchased in (then) recent years. Older equipment, even in the firms using shorter lives, was still being depreciated in line with Bulletin F.

ton textiles was not. Some cotton textile producing firms alleged that competitors who produced both cotton and synthetic cloth within their organizations were able to take advantage of the shorter lives on the basis of the fact that they produced synthetic textiles.

One of the major contributions of the 1961 change in tax regulations, therefore, may have been to bring into use a more uniform pattern of service lives, thereby reducing discrimination against those firms who had been unable to secure shorter lives. Insofar as the sample is representative, this change favored the medium and small firms. Among the seven large firms reporting, four appear to have had favorable service life arrangements prior to 1961, whereas only three of the nine medium sized firms reporting and two of the seven small firms indicated such arrangements.<sup>38</sup>

A possible offsetting factor which cannot be evaluated was the practice of expensing a substantial part of the cost of installation. This seems to have been more important when machinery was modified than when new machinery was installed. Firms using long service lives apparently expensed substantial amounts of capital outlays in this way. Several stated that after 1961 agents became much stricter in their attitudes toward this practice.

All of the firms in the sample promptly altered their depreciation practices to conform to the 1961 change in regulations. In only one case, did an executive indicate a reluctance on the part of management to take advantage of the liberalizing depreciation provisions. Since the 1961 provisions regarding service lives were applicable to all equipment, old or new, these provisions offered significant advantages not only to firms that had previously been restricted to relatively long service lives on all equipment in use, but also to a number of firms that had in recent years been able to secure relatively short lives for newly acquired equipment but had been restricted to longer lives on older equipment.

<sup>38</sup> In his study based on Treasury data, Ture found that smaller corporations made greater use of shortened service lives than did larger corporations. Ture, *Accelerated Depreciation*, p. 183.

Several factors help to explain the more prompt and enthusiastic reception of the 1961 provisions than had been accorded the provisions for accelerated depreciation under the Revenue Act of 1954. In the first place, the experience gained through adopting accelerated depreciation undoubtedly contributed to avoiding a misunderstanding of the advantages in the 1961 provisions. Secondly, the 1961 provisions were unique to the textile industry. They had come about as a result of aggressive activity on the part of the industry's own leadership, especially the American Textile Manufacturer's Institute, and in the process had become a *cause célèbre*. Interview testimony and industry literature indicate that firms had come to regard the long service lives under Bulletin F as a special penalty imposed upon the industry and, accordingly, accepted the 1961 provisions as a privilege long overdue.

Of course, the 1961 administrative action was also more dramatic and its provisions more readily appreciated. Whereas the 1954 regulation permitted use of a more liberal depreciation arrangement only on new assets newly acquired, the 1961 changes provided for shorter depreciation lives on previously acquired assets as well. This is not to suggest that the 1954 regulation changes were trivial in their consequences for the firm; the principal difference in the adoption experience appears to be the result of a changed attitude on the part of management.

It is also probable that in 1961 there was a greater realization of the need for modernization. Between 1954 and 1961 the American textile industry experienced tremendous increases in foreign competition along with a radical shift from cotton to synthetic fibers. By 1961 there was an increased emphasis on modernization for survival, and firms were much more aware of the need to increase the supply of funds available to them to finance such investment.

#### EXPERIENCE WITH 1961-62 DEPRECIATION PROVISIONS

Only eight of the twenty-five firms had changed over to the "guideline" provisions of Revenue Procedure 62-21 at the time

of interview, spring and summer of 1963. The remainder made use of the 1961 provisions.

Preference for the 1961 provisions does not necessarily indicate that firms were unwilling to avail themselves of the opportunity to use shorter service lives. Most firms continuing the 1961 arrangements explained that the longer, fifteen year, service lives on certain basic textile equipment were offset by shorter service lives on other equipment, providing an over-all average service life approximating the fourteen-year service life suggested as the basic textile "guideline" under the 1962 Revenue Procedure. Some firms stated that their existing arrangements worked out to provide shorter than guideline lives, others found them "almost as short" and making "very little difference."<sup>39</sup>

An additional reason, however, appears to have been the desire to retain internal evidence to justify existing depreciation practices in future dealings with tax agents. Having in the past been required to justify favorable service lives by producing records of the firm's actual experience based on replacement of specific pieces of equipment, many executives regarded it as unwise to desert this system for exclusive reliance upon the reserve ratio test set forth in Revenue Procedure 62-21.

A wide difference in attitude toward the reserve ratio test emerged during the interviews.<sup>40</sup> Several firms had never made any computations to determine where they stood under the test or had made only tentative estimates for a part of the organization. Some stated that existing records did not permit ready computation of the reserve ratio test, and that it would take additional time before the firm would be able to know where it stood.

<sup>39</sup> The 1961 provisions had established separate service lives for all major types of equipment whereas Revenue Procedure 62-21 provided for a limited number of asset classes. Most textile equipment fell in a single class with a guideline life of fourteen years.

<sup>40</sup> According to IRS Revenue Procedure (p. 4): "the fundamental concept underlying the new Procedure is that the depreciation claimed will not be disturbed if the taxpayer's retirement and replacement practices are consistent with the life used. The reserve ratio test provides a technique for establishing the consistency between the tax life used and the subsequent retirement and replacement policy of the taxpayer." Cf. Norman Ture, "Tax Reform: Depreciation Problems," *American Economic Review*, Vol. LIII, No. 2 (May 1963), pp. 339 ff.

An executive of a very large publicly held firm asserted that there was no point in making such a test before the three-year period had been completed, since there was nothing the firm could do about it anyway and it was inconceivable that the results would alter their investment practices.

Opinion differed as to the applicability of the test. Some firms maintained that as long as the 1961 depreciation provisions were followed the reserve ratio test was not applicable; others were convinced that it was applicable in any event.

There were also differences in the degree of concern as to the impact of the test on depreciation practice. Whereas the large firm mentioned above did not feel the test was worth computing, others feared that ultimately they could not pass the test and that current, favorable service lives would be lengthened. In one small firm the president stated that he had been advised to postpone investment expenditures for several years in order to make the necessary showing of improvement at the end of the grace period.

#### *"Redepreciation" of Old Assets*

Under the composite asset depreciation arrangements set forth in Revenue Procedure 62-21 in 1962, a firm takes depreciation on the full value of assets carried on its books whether or not such assets have been fully depreciated. Under 62-21, when a firm switches from unit depreciation to composite asset depreciation all assets in use within an asset class are used in computing the basis for depreciation. Thus, if a considerable quantity of fully depreciated assets are still in use, adoption of the 1962 provisions may result in a very sizeable increase in the value of assets upon which tax depreciation is taken.

One firm (not among the twenty-five) was interviewed which had been in financial difficulty and was recently reorganized. The new management was relying upon funds generated by redepresiasi ng old assets as a basis for avoiding taxes and thereby providing the funds necessary to modernize his organization. In another case, a controller of a leading publicly held firm expressed

amazement that any "competent" financial officer could ignore the opportunities for tax savings that would result from redepresiasiating old equipment. When asked if he was not concerned over the problem of meeting the reserve ratio test in view of the very large depreciation charges taken in 1962 and 1963, he replied that he would worry about the test when the day arrived, and that the tax savings he was getting were "money in the bank."

Firms continuing under the 1961 provisions were not availing themselves of the opportunity for additional depreciation by bringing old, fully depreciated assets back on their books. It is impossible to determine within the scope of this study the extent to which their action was prompted by a lack of such assets, by fear of future difficulties under the reserve ratio test due to the increased current levels of depreciation charges, or simply by a desire to observe "realistic" depreciation practices. There is some indication that each of these reasons was important. As will be shown below, our interviews strongly suggest that "realism" in depreciation practice is an important objective for many firms.

#### *Increases in Depreciation Resulting from 1961 and 1962 Depreciation Changes*

It is impossible to separate the impact of the 1961 and 1962 regulation changes but we can observe in a general way the effect of change in depreciation practice since 1960 among the firms for which depreciation and capital expenditure data are available. Table 2 sets forth percentage increases in depreciation charges between the two years, 1960 and 1963. It is immediately apparent that depreciation charges rose very sharply during this period (the median increase was 47 per cent).

Since the volume of depreciation is determined by the amount of depreciable assets as well as the formula used to compute depreciation, increases in actual depreciation require adjustment to reflect the substantial increases in capital expenditures which occurred between 1960 and 1963. This adjustment is supplied by relating the actual depreciation increases to increases which would have occurred in simulated series. The latter assume the

TABLE 2. Increases in Depreciation Charges 1960-63, Actual and Simulated Series Compared

Firm <sup>a</sup>	1963 Depreciation as a Percentage of 1960 Depreciation		Estimated Percentage Increase Due to Shorter Service Lives
	Actual (1)	Simulated (2)	(col. 1 - col. 2) ÷ col. 1
<i>Large</i>			
1	b	b	
2	127	116	+9
3	135	141	-4
4	142	120	+19
5	184	132	+39
6	147	128	+14
7	b	b	b
8	b	b	b
<i>Medium</i>			
9	118	111	+6
10	134	109	+23
11	169	136	+24
12	194	112	+74
13	147	96	+54
14	178	148	+20
15	129	106	+22
16	190	177	+7
17	193	143	+35
18	136	116	+17
<i>Small</i>			
19	145	125	+17
20	b	b	b
21	167	145	+15
22	b	b	b
23	170	145	+17
24	146	105	+39
25	156	123	+22
<i>Median</i>	147	124	+21

SOURCE: Based on data supplied by firms. For a description of simulation technique see Appendix B.

<sup>a</sup> Coded to prevent identification.

<sup>b</sup> Company data not available.

same original assets and 1960-63 capital expenditures but no changes in depreciation regulations.<sup>41</sup>

Even after this adjustment the increases are impressive. Relative increases in actual depreciation were as much as 74 per cent above comparable increases in the simulated series (Table 2).<sup>42</sup> The median relative increase for the twenty firms for which data were available was 21 per cent above the comparable increase for the simulated series.

There was considerable variation among firms in the relative changes in depreciation, however. It should be remembered that increases in depreciation may have stemmed from causes other than change in the level of capital expenditures. For many firms, especially the smaller ones, depreciation increases resulted largely from the use of the shorter service lives (under either the 1961 or 1962 provisions) applied to newly acquired assets. But a second factor acting to increase depreciation was the amount of old assets which were partially depreciated, having previously been subject to longer lives, and which were now eligible for depreciation on a shorter life basis under either the 1961 or 1962 basis. Still a third factor acting to increase depreciation for those firms under the 1962 provisions was the amount of old assets which were fully depreciated but which could now be redepreciated if placed in composite group accounts.

Accordingly, increases in depreciation were influenced not only by the increases in the level of capital expenditure and shortened lives on newly acquired assets, but also the firm's experience with shorter lives for older assets, both partially and fully depreciated.

Since the depreciation history appears to have varied to a considerable extent from firm to firm it is not possible to draw conclusions as to the effectiveness of the 1962 relative to the 1961 regulations in increasing depreciation. The largest relative increase in depreciation (74 per cent) was experienced by a firm

<sup>41</sup> The computation of the simulated series is explained in Appendix B. Briefly, the simulated series assumes that all new acquisitions are depreciated on a twenty-year service life basis using double declining balance formula.

<sup>42</sup> In comparing the increases in actual and simulated depreciation series, percentage increases have been used since simulated depreciation was typically lower than actual depreciation in 1960.

which had made use of the guidelines provisions and had, according to the testimony of its controller, received enormous advantages from "redepreciating" old assets. On the other hand, the four firms which showed the next highest relative increases had not made use of the 1962 provisions.

#### BOOK DEPRECIATION VERSUS TAX DEPRECIATION

There is some reason to expect changes in tax depreciation liberalization to alter the depreciation accounting practices followed for other managerial purposes. The reason is clear. Firms do not like to use different charges for tax and financial accounting purposes. Apart from the additional expense of keeping two sets of books, different charges are difficult to explain to stockholders, bankers, employees, and even to fellow executives. They arouse suspicion and give rise to discrepancies in profit computations which are difficult to reconstruct and reconcile.

This expectation is abundantly supported by the interview results. With only one exception, the firms interviewed employed the same depreciation accounts for determining tax liabilities as for determining their costs in reporting to stockholders.

It is not surprising that textile firms altered their "book depreciation" accounting to reflect changed "tax depreciation" after the granting of shorter service lives in 1961 or, for that matter, after their adoption of the liberalizing provisions of the Internal Revenue Code of 1954. Textile firms have long held that the service lives indicated in the old Bulletin F were unrealistic and inequitable. The industry fought long and hard in Washington to secure the shorter lives of the 1961 regulation changes and which they considered to be justified by current replacement requirements. Having finally gotten what was requested, it was to be expected that they would alter their bookkeeping arrangements accordingly.

Probably more indicative of the past attitude of treating tax and book depreciation alike is that the companies did not see fit to take the shorter lives, for which they argued so vehemently, as a basis for computing depreciation in their financial account-

ing systems until they were permitted to do so for tax purposes. Clearly, the firms did not wish to use different depreciation charges for tax and financial accounting purposes.

The desire to make use of a single system to record depreciation charges for tax and regular financial accounting purposes is reflected in executives' attitudes toward taking service lives shorter than those in force at the time of interview. Executives were asked if they would adopt ten-year service lives if permitted to do so without the reserve ratio test, also if they would adopt five-year service lives.

Among the twenty firms responding to the question seven stated that they would adopt five-year service lives. Among the remaining thirteen, five stated that they would go to a ten-year basis, but not to a five-year basis, and eight stated that they would not accept service lives as short as ten years.

The interesting aspect of the answers of these thirteen firms is that in each the executive offered one of two reasons for his unwillingness to adopt still shorter lives: the firm would be unwilling to have book profits reduced by the additional depreciation charges which still shorter lives would curtail; or it was felt that the additional depreciation would not be in accord with actual depreciation experience.<sup>43</sup>

In contrast, not one of the seven firms willing to accept five-year service lives mentioned either the effect of adoption on profits or the issue of realism.<sup>44</sup> It is interesting that four of these firms stated that they would probably be willing to book depreciation differently for tax than for regular accounting purposes in the event of shorter service lives. Three of these were firms which had hitherto been unwilling to follow this practice.

<sup>43</sup> Among the five firms stating that they would accept ten-year service lives but not five-year service lives three offered the first explanation, two offered the second. Among the eight firms stating they would accept neither the ten- nor the five-year service lives four offered the first explanation, four the second.

<sup>44</sup> These seven firms were not among the three most profitable in the sample although evidence indicated at least average profitability. An analysis of return on investment data for the fifteen firms for which data were available failed to establish any correlation between profitability and willingness to establish shorter-than-current tax lives. For example, two of the three most profitable firms insisted that tax and book depreciation lives would have to be the same and "realistic."

To the extent that the evidence offered by our sample firms is representative of a sizeable segment of the industrial firms of the nation, the conclusion would seem to be that tax liberalization which is regarded as recognizing the realities of obsolescence and physical deterioration of plant and equipment will be adopted much more readily than will liberalization which accelerates tax depreciation beyond that point. For our sample it is clear that a very large majority of firms desired to retain a single accounting system for tax and general record-keeping purposes.

#### SUMMARY AND CONCLUSIONS

A large majority of firms interviewed promptly adopted the accelerated depreciation permitted by the Internal Revenue Code of 1954 although several delayed adoption for considerable periods and two had not yet adopted those provisions at time of interview or had not adopted them for all newly acquired assets. The 1961 liberalizing provisions were adopted immediately by all firms, but the impact varied widely, since some firms were already using lives approximately as short as those permitted by the new legislation for newly acquired assets while others were not. The effect of this legislation appears to have been to bring about increased equality in service lives permitted for tax depreciation.

As regards Revenue Procedure 62-21, at the time of interview only eight of the twenty-five firms had changed over to the "guidelines" provisions. The failure to adopt the practices permitted by this legislation was due principally to the conviction (apparently based upon research into company records) that the guideline lives were not, on balance, shorter than those permitted by the 1961 provisions. Moreover, there was a decided reluctance to change from item depreciation to composite depreciation accounts. This reluctance stemmed from a desire to retain the proof of service life performance made possible by retention of individual equipment accounts in dealing with tax agents. Information relating to attitudes toward the reserve ratio test was not solicited from all firms but a considerable variety of opinion was expressed

as to how the test would be administered and what its effect would be.

Finally, the interview evidence indicates that firms interviewed had a strong preference for using the same depreciation accounts for tax and general financial accounting. Among the twenty-five firms, only one made use of separate accounts for tax and "book" depreciation at time of interview and only four indicated they would be willing to do so if shorter lives were offered.