# Changing Premerger Attributes: Acquirees vs. Acquirers

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## Abstract

*This study presents evidence on the nature of the new merger wave. Specifically, this study examined a comprehensive profile of 335 pairs of merged industrial companies of the 80's. In general, big companies which were heavily leveraged and less liquid acquired small companies which were financially sound but not well managed or situated to survive in the intensely competitive market of the 80's.*

## Introduction

The merger "mania" just hit Corporate America. Gaining momentum over the past decade, this new wave of business mergers was unprecedented in terms of size and intensity. However, this new wave has not been thoroughly studied for its nature and patterns. Moreover, while much research has been conducted on merger issues like wealth effect of merger (Kaufman, 1988; Huang and Walkling, 1987), merger motives (Jensen and Ruback, 1983; Weston and Kwang, 1983), and merger target prediction (Su, 1986; Palepu, 1986), the important fundamental issue of fit between the two merger partners has not been adequately investigated.

The fit between the two merger partners deserves attention, because it is often said that two merger partners engage in a merger to achieve better operational and financial fit. Merging may be seen as an adaptation process to the continuously changing corporate environment. In other words, changing business environments might force merger companies to pursue different fit operationally and financially. A good understanding of changes in merger environments, therefore, is essential to gaining a good knowledge of operational and financial fit merger companies strived to achieve in the 80's, and of the changes they went through in the process. At least four macro-economic environmental changes are relevant to merger activities: general economy, competition, government antitrust regulation, and financial markets.

In the past two decades, the U.S. economy went through oil crises and recession in the 70's, recovered from the recession in the early 80's, and then enjoyed a long expansion period. The economic uncertainty in the 70's resulted in more conglomerate mergers than horizontal and vertical mergers (Su and Kim, 1990). While the economy was recovering in the early 80's,

competition became more intense, internationally as well as domestically. The pressure for improvement in efficiency thus became greater in the 80's than in the earlier decade. As a result of this increased pressure, more horizontal and vertical mergers occurred in the 80's for economies of scale and scope [Su and Kim, 1990]. The political and legal environment was also favorable to mergers in the 80's. Certain industries (e.g., airlines industry) were deregulated in 1978. The Reagan government favored a market for corporate control such that antitrust laws were not enforced or removed in the 80's. For instance, antitrust rules against vertical merger were removed in 1982 and those against horizontal merger were relaxed in 1984 (Ott and Santoni, 1985). This less restrictive antitrust environment contributed to more horizontal and vertical mergers but less diversified mergers. Finally, the financial market played an important role in the changing merger environment. In the 80's, the use of new instruments like high-yield junk bonds combined with the prosperity of the stock market fueled the merger vehicle, resulting in a hot market for mergers.

This study intends to present evidence on the profile of the companies which merged in the 80's and the change in the profile of those companies over the five years prior to merger. Significant findings on the profile and its trend should contribute to the understanding of the nature of the new merger wave: why companies chose merge, how merger partners fitted into each other, and how macroeconomic factors affected the companies individually and as pairs in mergers.

### Data and Methodology

Four procedures were undertaken as follows:

(1) Industrial companies (sic < 4000) which were deleted from the COMPUSTAT databank due to mergers in the 80's were identified[1]. Their acquirers, also in the industrial sector, were located from the Roster Cross-Index of the *Mergers and Acquisitions*. The search resulted in 335 pairs of industrial companies which had data for at least one of the five years prior to merger. Among them, 248, 309, 281, 256, and 234 pairs had data for 5, 4, 3, 2, and 1 year(s) before merger, respectively.

(2) Twelve variables representing ten general attributes of firms were utilized to examine merger profile [Chen and Shimerda, 1981]. Table 1 lists the variables and their attributes. Data of the variables were retrieved from the COMPUSTAT industrial annual and research files for accounting items and from the CRSP tapes for the stock price of companies whose fiscal year did not end on December 31. Each variable was computed for the acquiree and then for its acquirer as a pair.

**Table 1:**
**Variables and Firm Attributes**

| Variables | Description | Attributes |
|---|---|---|
| 1. ROA | EBIT/Total Assets | A |
| 2. PR | EBIT/Sales | A |
| 3. CFTA | Cash Flows/Total Assets | B |
| 4. CR | Current Ratio | B |
| 5. LLTA | L-T Liabilities/Total Assets | C |
| 6. ATO | Sales/Total Assets | D |
| 7. DP | Dividend/Earnings | E |
| 8. GS | Growth in Sales | F |
| 9. UTB | Tax-Loss Carry-Forward/Total Assets | G |
| 10. TA | Natural Log of Total Assets | H |
| 11. PE | P/E Ratio | I |
| 12. STL | Shares Trading Volume/Number of Shares Outstanding | J |

| | |
|---|---|
| A: Profitability | F: Growth |
| B: Liquidity | G: Tax Benefit |
| C: Leverage | H: Size |
| D: Activity | I: Market Valuation |
| E: Dividend Policy | J: Stock Characteristics |

(3) The mean of each variable was calculated for each group of the merger companies. Furthermore, the difference in each variable between the paired acquiree and acquirer was calculated and averaged. To investigate the difference in each variable between acquirees and acquirers, the group means of each variable were compared and graphically presented in plots #1 to #12 of Appendix 1 over the five years before merger. Also included in each plot is the mean difference between the paired acquiree and acquirer. In the plots, letters a, b, and c are used for the acquiree, acquirer, and their difference, respectively. Table 2 presents the calculational results. The calculations and presentations were conducted by year to investigate how the profile of acquirees and acquirers changed over the five years before merger, as well as how the changes might have contributed to the merger.

(4) Student's t tests were conducted to test the null hypothesis that the acquiree was not different from the acquirer each year before merger in the twelve variables. ANOVA tests were also executed to test for changes in trend for each variable. The test results are reported in Table 2.

**Significant Findings and Discussions**

*A. Operational Trends*

(1) The acquired firms suffered from an ever-worsening profitability situation until they were merged. Overall profitability (ROA1) and profit margin (PR1) were consistently declining (see plot #1 and #2) at the .10 and .05 significance level, respectively (see Table 2). However, their cash flow position relative to total assets (CFTA1) and capability of turning assets into sales (ATO1) remained solid throughout all years before merger. Sales were growing all years, but growth rate (GS1) dropped drastically starting two years before merger.

It appears that acquirees' decline in overall profitability (ROA1) stemmed mainly from their inability to control operating costs. The negative impact of shrinking profit margin (PR1) seems to more than offset the favorable effects of assets turnover (ATO1). Profit margin was squeezed due to slower growth in sales. It also appears that a substantial portion of their out-of-control operating costs was capital expenditure (e.g., depreciation of fixed assets). Their cash flow situation was not as bad as the profitability situation, which included allocation of capital expenditures as components of profitability. Taken together, the above phenomena suggest that acquirees generally were doing well in turning assets into sales and in generating cash flows. Acquirees, however, appeared to have difficulty in meeting capital expenditure needs for current operations and expansion. This situation probably put downward pressure on their dividend payment capability (plot #7) and caused the eventual drop in sales growth (plot #8).

(2) On the other hand, acquirers' major problem was a continuous decline in asset turnover (ATO2). While their economy of scale allowed spreading over of the large capital expenditure for sustaining a favorable profit margin, they had difficulty in generating the level of assets turnover that would match their big assets size. Perhaps, most acquirers were in mature industries or were going through the mature stage in their life cycles.

(3) In comparison, acquirees performed consistently better in assets turnover (ATO3) while acquirers did

**Table 2:**
**Means of Groups and Group Difference**

| Variable | YEAR BEFORE MERGER | | | | | CHANGE |
|---|---|---|---|---|---|---|
| | -5 | -4 | -3 | -2 | -1 | OVER YEAR |
| **1. ACQUIREES** | | | | | | |
| ROA1 | 0.1422 | 0.1411 | 0.1360 | 0.1320 | 0.1223 | && |
| PR1 | 0.1113 | 0.1245 | 0.1110 | 0.1006 | 0.0921 | & |
| CFTA1 | 0.1048 | 0.1055 | 0.1044 | 0.1033 | 0.1006 | |
| CR1 | 2.6863 | 2.6993 | 2.5585 | 2.5408 | 2.5581 | |
| LLTA1 | 0.2120 | 0.2102 | 0.2146 | 0.2156 | 0.2062 | |
| ATO1 | 1.3780 | 1.3521 | 1.3373 | 1.3179 | 1.3628 | |
| DP1 | 0.2085 | 0.1890 | 0.1821 | 0.1613 | 0.1490 | & |
| GS1 | 0.1450 | 0.1501 | 0.1545 | 0.1339 | 0.0993 | & |
| UTB1 | 0.0026 | 0.0038 | 0.0066 | 0.0076 | 0.0134 | & |
| TA1 | 4.2559 | 4.2979 | 4.2826 | 4.2132 | 4.3244 | |
| PE1 | 11.8274 | 10.7994 | 11.9000 | 11.8735 | 10.3702 | |
| STL1 | 0.3554 | 0.3739 | 0.4496 | 0.5449 | 0.5883 | & |
| **2. ACQUIRERS** | | | | | | |
| ROA2 | 0.1452 | 0.1492 | 0.1425 | 0.1416 | 0.1388 | |
| PR2 | 0.1148 | 0.1197 | 0.1172 | 0.1175 | 0.1132 | |
| CFTA2 | 0.1133 | 0.1143 | 0.1106 | 0.1099 | 0.1048 | |
| CR2 | 2.2000 | 2.1862 | 2.1083 | 2.1770 | 2.2205 | |
| LLTA2 | 0.2366 | 0.2322 | 0.2418 | 0.2436 | 0.2491 | |
| ATO2 | 1.3654 | 1.3304 | 1.2946 | 1.2495 | 1.1949 | & |
| DP2 | 0.2896 | 0.2825 | 0.2899 | 0.2981 | 0.2806 | |
| GS2 | 0.1163 | 0.1260 | 0.1182 | 0.1256 | 0.1299 | |
| UTB2 | 0.0015 | 0.0016 | 0.0019 | 0.0044 | 0.0027 | & |
| TA2 | 6.2632 | 6.3224 | 6.4415 | 6.4728 | 6.5930 | |
| PE2 | 9.8506 | 10.2484 | 10.7763 | 12.0195 | 11.6427 | && |
| STL2 | 0.3555 | 0.4041 | 0.4685 | 0.5226 | 0.5673 | & |
| **3. DIFFERENCE BETWEEN PAIRED ACQUIREE AND ACQUIRER** | | | | | | |
| ROA3 | -0.0030 | -0.0081 | -0.0065 | -0.0097 | -0.0165* | |
| PR3 | -0.0035 | 0.0048 | -0.0062 | -0.0169* | -0.0212* | && |
| CFTA3 | -0.0085* | -0.0087* | -0.0061 | -0.0067** | -0.0041 | |
| CR3 | 0.4863* | 0.5131* | 0.4502* | 0.3637* | 0.3376* | |
| LLTA3 | -0.0246* | -0.0219* | -0.0272* | -0.0280* | -0.0430* | |
| ATO3 | 0.0126 | 0.0217 | 0.0426 | 0.0684** | 0.1679* | & |
| DP3 | -0.0812* | -0.0935* | -0.1077* | -0.1368* | -0.1316* | |
| GS3 | 0.0287** | 0.0241** | 0.0363* | 0.0083 | -0.0306 | & |
| UTB3 | 0.0011 | 0.0023* | 0.0047* | 0.0031** | 0.0107* | & |
| TA3 | -2.0074* | -2.0245* | -2.1589* | -2.2596* | -2.2687* | |
| PE3 | 1.9768* | 0.5510 | 1.1237 | -0.1461 | -1.2725 | |
| STL3 | -0.0001 | -0.0302 | -0.0189 | 0.0224 | 0.0210 | |

*: P-VALUE <.05, **: P-VALUE <.10 OF HO: DIFFERENCE=0
&: P-VALUE <.05, &&: P-VALUE <.10 OF HO: NO CHANGE OVER 5 YEARS

better in overall profitability (ROA3), profit margin (PR3), cash flow positions (CFTA3), and sales growth (GS3) in most of the years before merger. The gaps between the merger partners in assets turnover (ATO3), profit margin (PR3), and sales growth (GS3) were consistently and significantly widening over time. The merger deals were consummated at the peak of each of the gaps, reflecting the corporate restructuring in the 80's: a competition for corporate control towards greater operational efficiency.

The merger partners could apparently see an improved operational fit in a merger. Acquirees needed a

greater economies of scale and scope to sustain profit margin and future growth. Acquirers, on the other side, needed either a new market or innovation to find a more efficient use of their assets for greater sales.

*B. Financial Trends*

(1) Acquirees remained about the same all years in short-term liquidity (CR1) and leverage (LLTA1). Their healthy short-term liquidity situation was sustained by the steady cash flows from operations. In spite of the steady cash flows, acquirees paid a continuously decreasing dividend (DP1). This may have reflected managers'

perceived uncertainty about future capital expenditure needs as discussed previously. The declining profitability tended to result in an increasing amount of operating loss carry-forward credit (UTB1).

(2) On the other side, acquirers did not show a significant trend in most financial aspects. The only consistent and significant change was that the amount of unused tax benefit was being dried up (UTB3). This may have reflected acquirers' favorable change in profitability.

(3) Compared with their acquirers, acquirees were consistently and significantly more liquid (CR3) but less leveraged (LLTA3) all years before merging. On the average, acquirees were 20% less leveraged than acquirers and the gap was consistently growing towards merging. Acquirees also carried a greater amount of unused tax benefit (UTB3) all years before merging and the gap between the merger partners were widening until the merger was completed. It appears that acquirers favored cash-rich and less leveraged partners. Acquirers probably considered merger as a way of improving liquidity and leverage positions. Alternatively, acquirers may have believed that acquirees' rich cash flows and low leverage could help facilitate pre-merger or post-merger financing, especially in such a case of high-yield junk bond financing. The supply and demand of unused tax benefit (UTB3) also played an important role in putting together merger partners for a greater financial fit for both.

*C. Trends of Capital Market Factors*

(1) Acquirees remained about the same in size (TA1) and market valuation relative to earnings (PE1). They, however, witnessed a significant surge in trading volume (STL1) near merging, suggesting that acquirees' vulnerability to takeover became public knowledge by then. This sudden surge of trading volume, together with possible stockholders' dissatisfaction with lower dividend payment, may have contributed to acquirers' vulnerability to a takeover.

(2) Acquirers also remained about the same in size (TA2). They, however, continuously experienced a more favorable market valuation in terms of price (PE2) and trading volume (STL2). The booming stock market obviously made it easier for acquirers to finance their acquisition of another firm.

(3) As pairs, acquirees were consistently smaller in terms of total assets than acquirers (TA3). The relative magnitude in market valuation relative to earnings (PE3) and trading volume (STL3) were reversed over the five years prior to merging. Acquirees started with a higher P/E ratio and a lower trading volume than acquirers, but ended up with a lower P/E ratio and a

higher trading volume. The trading volume, however, increased monotonously by about 10% each year for both merger partners. This finding indicates that a merger tended to occur between actively traded companies.

Most of acquirees' capital market factors point to their increasing vulnerability to merger. Their lower dividend payment and decreasing stock price might have put their incumbent management out of favor with stockholders and made their stocks cheaper to buy. Their increased share trading volume and smaller firm size then gave acquirers an easy access to a takeover.

On the other hand, the same market factors of acquirers indicate their increased resourcefulness and readiness for a takeover. Their booming stock market together with a greater firm size facilitated acquisition financing on top of the funds raised from borrowing and from favorable operations.

**Summary and Conclusions**

This study examined a comprehensive profile of 335 pairs of industrial merger companies of the 80's and the changes in the profile over the five years before merging. Specifically, twelve variables representing ten firm attributes were analyzed for each pair of merger partners and for their differences. The test results depict a general picture of firm attribute changes and how merger partners fitted into each other as follows.

The acquired firms tended to maintain sound operational and financial stability in terms of assets turnover, liquidity, and leverage. They did, however, suffer from unfavorable changes in overall profitability, profit margin, dividend payout, sales growth, and P/E ratios before merging. Decreased profitability resulted in an accumulation of larger unused tax benefit. On the other hand, acquiring firms had decreasing assets turnover, lower liquidity, and higher leverage positions. But they remained profitable in all years before merging, which may have caused them to use up unused tax benefit. Their dividend payout and sales growth remained solid and their stock market was booming in terms of price and trading volume.

On the merger scene, merger partners sought from each other what they lacked. Acquirees needed to improve their profit margin through economies of scope and scale. Acquirers looked for opportunities to increase sales and to improve liquidity and leverage situations. The supply and demand of unused tax benefit also played a significant role and the capital market factors contributed to the merger activities. While acquirees' lower dividend payment, lower stock price, high trading volume, and smaller firm size increased their vulnerability to a takeover, acquirers'

higher stock price along with a greater trading volume and greater firm size added to their resourcefulness and readiness for an acquisition beyond the funds borrowed or the cash flows from operations.

To conclude, an overall inference can be drawn on the fit between the two merger partners. In general, big, heavily leveraged, and less liquid companies acquired small and financially sound companies which were not well managed or situated to survive in the intensely competitive market of the 80's. Capital market factors facilitated the merger deal in which each merger partner, as an acquiree or an acquirer, found its way of survival in the age of intense competition.

**Suggestions for Future Research**

This study investigated the premerger attributes of merger companies. Future research should examine the postmerger attributes to determine the effects of the merger on the performance of acquirers and/or acquirees. In addition, the study may be extended to include nonindustrial companies and nonpublicly traded companies.                                                              ✌

**✳✳✳Footnote✳✳✳**

1. Companies included on the COMPUSTAT file are traded in the major stock exchanges. Thus, this study focuses on mergers between large corporations.

**✳✳✳References✳✳✳**

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**APPENDIX 1:**
**PLOTS OF VARIABLE MEANS BY YEAR BEFORE MERGER FOR**
**ACQUIREES (a), ACQUIRERS (b), AND DIFFERENCES (c=a-b)**

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PLOT #1                              PLOT #2
Plot of ROA1*YEAR='a'.               Plot of PR1*YEAR='a'.
Plot of ROA2*YEAR='b'.               Plot of PR2*YEAR='b'.
Plot of ROA3*YEAR='c'.               Plot of PR3*YEAR='c'.

      -+-----+-----+-----+-----+-           -+-----+-----+-----+-----+-
ROA |                            |      PR |                           |
0.15 +          b              +      0.15 +                         +
     |b                          |         |
     |a     a     b     b        |         |
     |            a     b      b |         |            a
     |                  a        |         |            b
     |                        a  |         |b           b     b      b |
     |                           |         |a                 a      b |
0.10 +                         +      0.10 +                  a      + 
     |                           |         |                        a |
     |                           |         |
     |                           |         |
0.05 +                         +      0.05 +                         +
     |                           |         |
     |                           |         |
     |                           |         |
0.00 +  ---------------------+      0.00 +  --------------------+
     |c                          |         |c
     |                           |         |
     |      c     c     c        |         |            c
     |            c              |         |
     |                        c  |         |                  c
     |                           |         |                        c |
-0.05 +                        +     -0.05 +                         +
      -+-----+-----+-----+-----+-           -+-----+-----+-----+-----+-
      -5    -4    -3    -2    -1           -5    -4    -3    -2    -1
              YEAR                                  YEAR
```
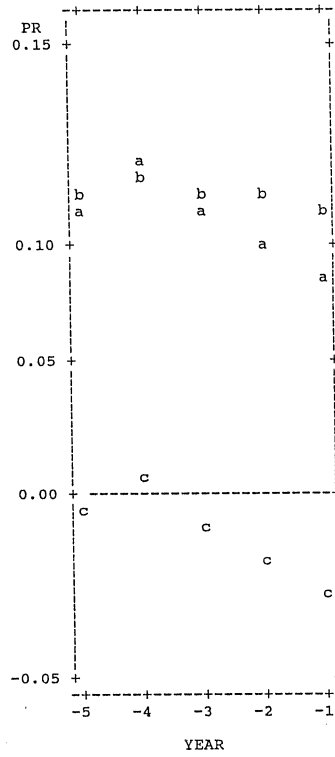
```
PLOT #3                              PLOT #4
Plot of CFTA1*YEAR='a'.              Plot of CR1*YEAR='a'.
Plot of CFTA2*YEAR='b'.              Plot of CR2*YEAR='b'.
Plot of CFTA3*YEAR='c'.              Plot of CR3*YEAR='c'.

      --+-----+-----+-----+-----+---         --+-----+-----+-----+-----+--
CFTA |                             |     CR |                            |
0.125 +                         +      3 +                         +
      |                             |        |
      |b     b     b     b          |        |a     a
      |a     a     a     a     b    |        |            a     a     a
0.100 +                     a   +            |                  a
      |                             |        |                        b
      |                             |        |b     b           b
0.075 +                         +      2 +                         +
      |                             |        |
0.050 +                         +            |
      |                             |     1 +                         +
0.025 +                         +            |
      |                             |        |
      |                             |        |      c
0.000 +-----------------------+            |      c     c
      |                             |        |                  c
      |      c     c     c     c  c |        |                        c |
      |                             |        |                        c |
-0.025 +                        +      0 +-----------------------+
      |                             |        --+-----+-----+-----+-----+--
      --+-----+-----+-----+-----+---         -5    -4    -3    -2    -1
      -5    -4    -3    -2    -1                       YEAR
              YEAR
```

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PLOT #5
Plot of LLTA1*YEAR='a'.
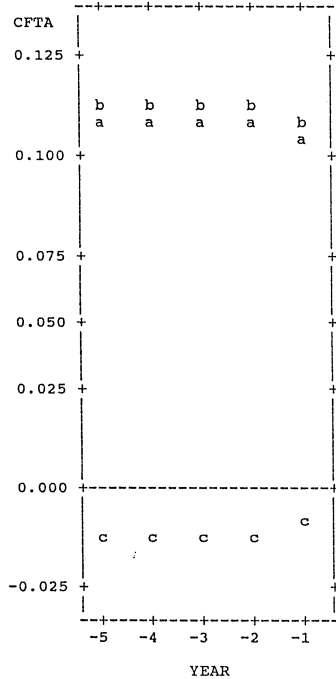Plot of LLTA2*YEAR='b'.
Plot of LLTA3*YEAR='c'.

PLOT #6
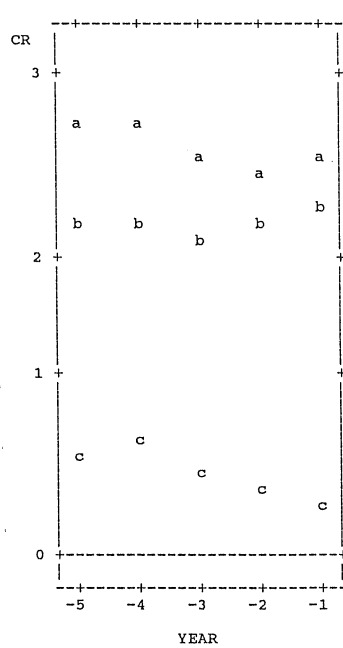Plot of ATO1*YEAR='a'.
Plot of ATO2*YEAR='b'.
Plot of ATO3*YEAR='c'.

PLOT #7
Plot of DP1*YEAR='a'.
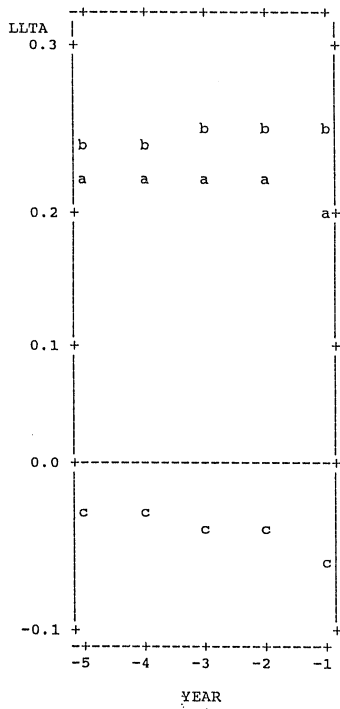Plot of DP2*YEAR='b'.
Plot of DP3*YEAR='c'.

PLOT #8
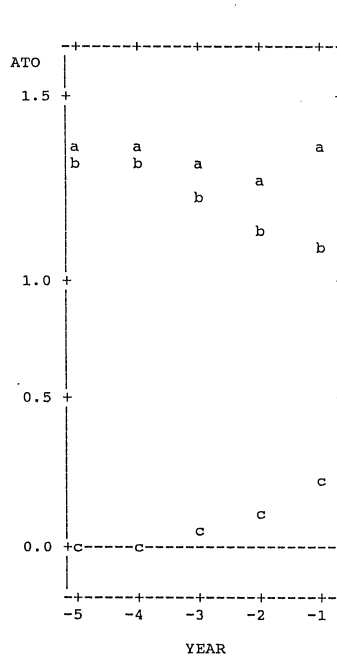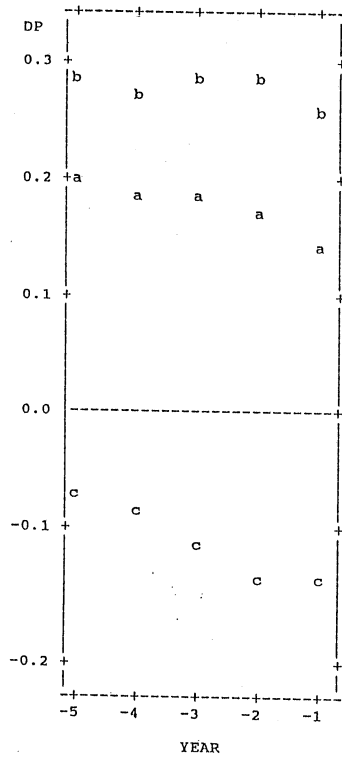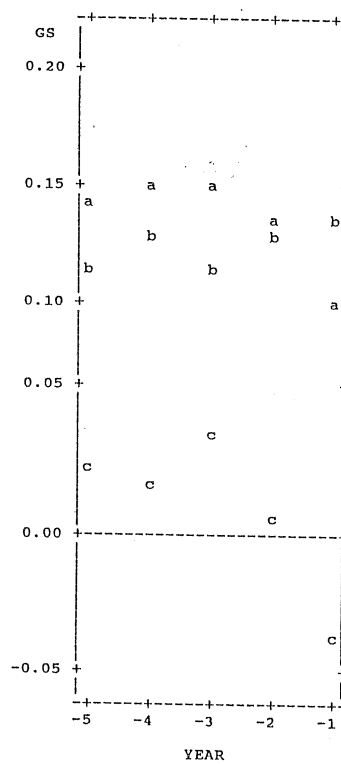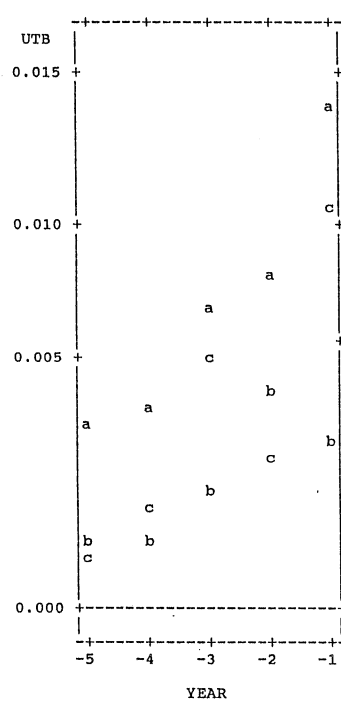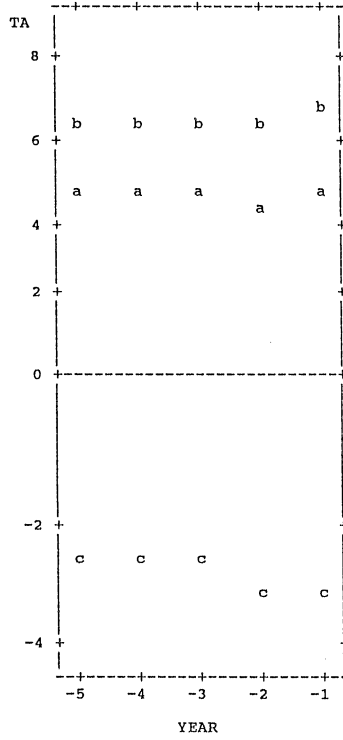Plot of GS1*YEAR='a'.
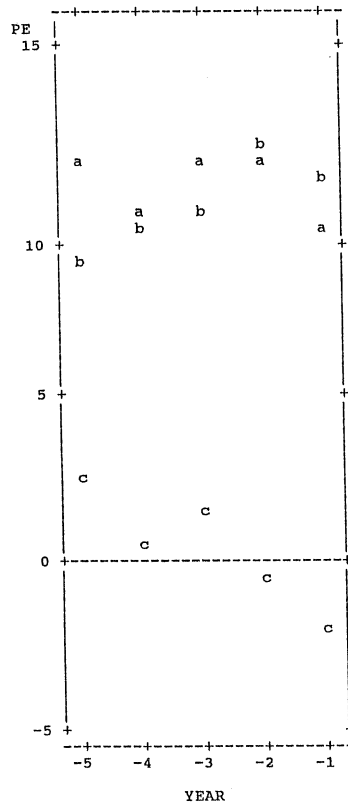Plot of GS2*YEAR='b'.
Plot of GS3*YEAR='c'.

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PLOT #9                              PLOT #10
Plot of UTB1*YEAR='a'.               Plot of TA1*YEAR='a'.
Plot of UTB2*YEAR='b'.               Plot of TA2*YEAR='b'.
Plot of UTB3*YEAR='c'.               Plot of TA3*YEAR='c'.

          -+-----+-----+-----+-----+-        --+-----+-----+-----+-----+--
   UTB    |                         |     TA |                           |
          |                         |        |                           |
   0.015  +                       + |      8 +                         + |
          |                       a |        |                           |
          |                         |      6 + b     b     b     b     b |
          |                         |        |                         + |
          |                       c |        |                           |
   0.010  +                       + |      4 + a     a     a     a     a |
          |                         |        |                   a       |
          |                 a       |        |                           |
          |             a           |      2 +                         + |
          |             c           |        |                           |
   0.005  +                       + |      0 +---------------------------+
          |                 b       |        |                           |
          |         a               |        |                           |
      a   |                     b   |        |                           |
          |             c           |        |                           |
          |         b               |     -2 +                         + |
          |     c                   |        | c     c     c             |
   b      b                         |        |                   c     c |
   c      |                         |        |                           |
          |                         |        |                           |
   0.000  +-------------------------+        |                           |
          |                         |     -4 +                         + |
          -+-----+-----+-----+-----+-        --+-----+-----+-----+-----+--
          -5    -4    -3    -2    -1          -5    -4    -3    -2    -1

                  YEAR                                YEAR


PLOT #11                             PLOT #12
Plot of PE1*YEAR='a'.                Plot of STL1*YEAR='a'.
Plot of PE2*YEAR='b'.                Plot of STL2*YEAR='b'.
Plot of PE3*YEAR='c'.                Plot of STL3*YEAR='c'.

         --+-----+-----+-----+-----+--        -+-----+-----+-----+-----+-
   PE   |                           |    STL  |                         |
   15   +                         + |    0.6  +                       a +
        |                           |         |                       b |
        |                       b   |         |                 a       |
        | a             a       a   |         |                 b       |
        |                       b   |         |                         |
        |         a     b           |         |           b             |
        |         b             a   |         |           a             |
   10   +                         + |    0.4  +     b                 + |
        | b                         |         |     a                   |
        |                           |       b |                         |
        |                           |       a |                         |
        |                           |         |                         |
    5   +                         + |    0.2  +                       + |
        |                           |         |                         |
        | c                         |         |                         |
        |             c             |         |                         |
        |         c                 |         |                         |
    0   +-------------------------+ |    0.0  +c----------------.c----c-+
        |                   c       |         |                         |
        |                           |         |           c             |
        |                     c     |         |        c                |
        |                           |         |                         |
        |                           |         |                         |
   -5   +                         + |   -0.2  +                       + |
         --+-----+-----+-----+-----+--        -+-----+-----+-----+-----+-
         -5    -4    -3    -2    -1           -5    -4    -3    -2    -1

                  YEAR                                YEAR
```

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