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The Cyclical Sensitivity
of Profit Margins

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CYCLICAL SENSITIVITY OF PROFIT MARGINS

Introduction and Summary

This paper begins with a stylized description of the recessionary phase of the business cycle process. Next, cyclical movements in aggregate profit margins (ratio of profits to current-dollar gross domestic product) in Canada are examined.

As is well known, profit margins (ratio of profits to sales) have tended to be pro-cyclical. At a more disaggregated (one digit industry) level, profit margins have characteristically been more cyclically volatile in the manufacturing and wholesale trade sectors and relatively more stable in the communications sector. At still more disaggregated levels, profit margins have tended to be more cyclically sensitive in those industries selling in the consumer durable, housing and capital goods markets; demand in the markets for these latter goods is known to be more cyclically volatile than in other components of final demand. Profit margins have also been more cyclically sensitive in those industries selling in international markets and/or exposed to international competition, presumably because firms in these industries are generally price takers and exposed to business cycles in other countries.

Relative to the earlier part of the postwar period, the magnitude of cyclical fluctuations in aggregate profit margins has increased since the early 1970s. There is some limited evidence that the responsiveness of aggregate profit margins to changes in capacity utilization rates has increased in the 1970s and early 1980s. Profit margins have tended to become more cyclically stable in recent recessions (relative to those of the 1950s and 1960s) in the utility and trade sectors, while becoming more cyclically volatile in the paper and allied and non-metallic mineral products industries; this seems to have resulted partly from changes in the cyclical volatility of product demand in certain cases.

The related issue of inflation adjustment of profits is also examined briefly in this paper. The cyclical behaviour of unadjusted and inflation-adjusted rates of return over the 1966-80 period is considered. The amplitude of cycles in inflation-adjusted aggregate rates of return has been much smaller than that of unadjusted aggregated rates of return. There is not much evidence that the amplitude of cyclical movements in aggregate inflation-adjusted rates of return changed significantly. The dispersion of rates of return has tended to be pro-cyclical. Cyclical movements in the dispersion of rates of return have tended to increase in the non-financial sector (though not in the manufacturing sector).

Some General Characteristics of Business Cycles

The highly stylized description of the recessionary phase of a domestically initiated business cycle that follows provides the framework for subsequent discussion.

In the course of an expansion, the rate of price inflation generally tends to accelerate. The forces that lead to accelerating price inflation usually result in policy responses, often in the form of increases in interest rates and taxes. Consumers then tend to reduce spending, especially for more discretionary items such as housing and consumer durables. Retailers, seeing their inventories build up, will reduce orders from their suppliers. Manufacturers of consumer items, faced with an increase in inventories and increased costs of financing those stocks, will eventually cut back production (and of course operating rates) and employment. In turn, the process will feed back to industries producing intermediate inputs and raw materials. As well, businesses, faced with cutbacks in production, will eventually reduce their investment spending, with obvious ramifications for capital-goods industries.

Reductions in sales often result in some downward pressure on prices. The response of unit costs is typically more sluggish than that of prices, so that profit margins are squeezed. This is accentuated by a tendency for firms to retain underutilized labour because of high hiring and training costs.

Of course, in a small open economy, cycles may also be generated by foreign economic disturbances. Given the orientation of Canadian exports, one might expect industries producing raw materials and intermediate inputs to bear the brunt of weaker foreign orders. The above process would then get underway as hours worked and employment were reduced, leading to a reduction in consumer spending.

The above discussion touches only briefly on the interesting subject of causes of the cycle. In some of the recent academic literature, emphasis has been placed on the role of unanticipated changes in fiscal and monetary policy, operating through misperceptions of relative price movements (e.g., Lucas, 1977). Older theories of the cycle emphasized such factors as disequilibrium in the relationship between the capital stock and consumer demand, and fluctuations in profit margins (for a summary, see Evans, 1969, Chapters 12-15).

Cyclical Movements in Aggregate Profit Margins in Canada over the Postwar Period

National accounts data from Statistics Canada were used. These are available on a quarterly basis starting in 1947. The ratio of corporate profits before taxes to gross domestic product at factor cost was employed as a crude proxy for aggregate profit margins. In Table 1, business-cycle dates are shown starting in 1951, and include two periods of slow real

growth in the 1960s.[1] The table also displays dates of cyclical peaks and troughs in the aggregate profit-margin series, as well as the per cent change between the initial trough and peak and the peak and final trough for the profit-margin series, using both the reference-cycle dates and the profit-margin cyclical dates. The aggregate profit-margin series is also shown in Chart 1. The shaded areas in the chart indicate recessions or periods of slow real growth. There is little evidence of trend in aggregate profit margins over the 1954-80 period.[2] It is clearly evident that the main fluctuations in the profit-margin series are closely associated with cyclical movements in output. In many of the earlier cycles of the postwar period, the peak in aggregate profit margins tended to lead the peak in aggregate output. Since the 1970s, however, there has tended to be a greater degree of coincidence between the peaks in profit margins and output. Throughout the postwar period, the troughs in these two series have been closely coincident, with the notable exception of the recession that began after 1974Q1.[3] Cyclical fluctuations in profit margins have been much larger in the 1970s and early 1980s than in the two previous decades (with the exception of the Korean War episode). Undoubtedly movements in commodity prices and larger fluctuations in real output (especially in the most recent recession) during the 1970s were partly responsible for this development. As noted above, unit costs would tend to be less cyclically sensitive than prices. Some costs, especially those associated with capital (interest costs and depreciation charges), tend to be fixed with respect to output in the short run. Firms have also tended to retain skilled labour over mild recessions, partly because of sizeable hiring and training costs. The prices of many inputs may be set according to long-term contracts (such as those for unionized labour and some raw materials).

The stability of the cyclical sensitivity of aggregate profit margins over the postwar period was tested with the following simple regression:

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1. For more information on these business-cycle dates, see Ferley, O'Reilly and Dunnigan (W5 (1984)). I have treated the 1975Q1-1982Q4 period as one complete cycle, rather than including a break in 1979Q4, mainly because the expansion between 1980Q2 and 1981Q2 was atypically short.

2. When a linear time trend regression was estimated over the 1954Q1-1980Q4 period, the coefficient on the time-trend variable was statistically insignificant. It has also been suggested that profits have become increasingly overstated as the inflation rate has increased. This issue is discussed in more detail later in this paper.

3. One explanation for the weakness in profit margins after the output trough in 1975Q1 is the existence of price and wage controls between the end of 1975 and 1978. The system of controls on prices and profits imposed constraints on profit margins. An examination of industry profit-margin data indicates that these constraints were generally not binding. Econometric evidence also tends to suggest that controls did not have much direct impact on prices.

PM= A+B*T+C*CAPU,

where PM = the aggregate profit margin,
       T = a time trend,
and CAPU = the rate of capacity utilization in the commercial sector
               (constructed using the Wharton trend-through-peak method).

The regression was estimated over the following periods: 1947Q1-1983Q4, 1953Q3-1983Q4 and 1953Q3-1981Q2. The coefficient of the time-trend variable was always negative, though statistically insignificant for the 1953Q3-1981Q2 period (see Table 2). Each sample was split into two subsamples and the stability of the estimated coefficents over time was tested with a Chow test. The break in the samples was set at 1969Q4, to distinguish between the earlier period of low average inflation rates and the later period with high average inflation rates and progressively larger cyclical fluctuations in real activity. The values of the calculated F statistic are:

16.8	1947Q1-1983Q4,
15.8	1953Q3-1983Q4,
and 12.0	1953Q3-1981Q2.

In all cases, the test statistic is highly significant, suggesting that there has been a structural break in the above relationship. The regression results suggest that aggregate profit margins were more cyclically sensitive in the 1970s and early 1980s than was the case in the previous two decades.

    Annual national accounts data from Statistics Canada have also been used to extend the description of the cyclical behaviour of aggregate profit margins back to 1926. Margins were again defined as the ratio of corporate profits before taxes to gross domestic product at factor cost. From Chart 2, there is little evidence of a secular trend in aggregate profit margins[4], especially over the 1940-80 period. In both the prewar and postwar periods, recessions (shown as shaded areas in Chart 2) have generally been associated with substantial declines in aggregate profit margins. In Table 3, I show the dating of annual cyclical peaks and troughs in real GNE, as well as the per cent change in real GNE from peak to trough. I have also determined cyclical peaks and troughs in the annual aggregate profit-margin series, which sometimes differ from those of real GNE. The per cent change in profit margins from initial trough to peak and from peak to final trough (using the cyclical dates of the profit-margin series) are also shown in Table 3. The correspondence between the magnitudes of the movements in real GNE and in profit margins for cyclical downturns is not that close. The first half of the 1930s was a special episode, when aggregate profit margins reached record lows and there was a record cyclical decline in real GNE. The magnitude of

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4. This is also confirmed by estimation of a linear time-trend regression.

fluctuations in profit margins was similar in the 1940s and 1970s, while the size of movements in margins in the two intervening decades was relatively mild, as noted previously. The aggregate profit-margin series was again at a very low level in 1982; at the same time the per cent decline in real GNE in that year was the largest since the 1930s.

Profit Margins by Industry

The above annual national accounts data from Statistics Canada may also be used to examine cyclical movements in profit margins for some broad sectoral groupings -- mining, manufacturing, transportation, communication, wholesale trade, retail trade and finance, insurance and real estate. It may be noted that industry classification is on a company rather than an establishment basis. As well, the validity of comparisons between prewar and recent business cycles may be diminished by structural change within each sectoral grouping, including changes in the share of corporations in each sector. I have tried to determine cyclical peaks and troughs for each sectoral profit-margin series, from which per cent changes in profit margins over initial trough-to-peak and peak-to-final-trough periods were calculated (Table 3).

The largest per cent declines in real GNE and in aggregate profit margins occur between 1929 and 1933. The manufacturing, wholesale trade and retail trade sectors all recorded losses for one or more years during the 1929-1933 period. The decline in the profit margin of the transportation sector was also very large. On the other hand, declines in profit margins in the mining[5] and finance, insurance and real estate sectors were much smaller. During the 1933-38 period, fluctuations in profit margins in the finance, insurance and real estate sector were relatively much larger. In the 1938-54 period, cyclical movements in profit margins in manufacturing, transportation and wholesale trade continued to be relatively high. However, it is difficult to pick out a sector which had consistently mild changes in profit margins over this period. In the 1950s and 1960s, changes in aggregate profit margins were comparatively small, as was the case in most sectors (with the notable exception of transportation). During the 1970s and early 1980s, cyclical movements in aggregate output and profit margins have become progressively larger. Changes in profit margins in manufacturing and wholesale trade have generally been large during this period, while profit margins in the communications sector have been stable (strong growth trend in output, cyclically insensitive demand).[6] The cyclical increase in profit margins

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5. The Canadian mining sector played a much more important role in the world market at this time, with nickel and aluminium prices much more rigid than appears to have been the case since the 1970s. See Scherer (1980), p. 350.

6. Regulation of entry and of prices (the latter, in telephones, telegraphs and the post office) in this sector may also be a factor.

in the mining sector in 1973 and 1974 was very large, owing to the world commodity price boom; the average performance of this sector since that time has been sustained by the mineral fuels grouping.

We next make use of the financial data on industrial corporations published by Statistics Canada. Quarterly adjusted data on profits and gross sales are available at a finer level of industrial disaggregation since 1962.[7] Profit margins, defined as the ratio of profits to sales, are displayed for selected industry groupings[8] in Charts 3-10 for the period 1962Q1-1983Q1 (shaded areas in the charts are official business-cycle recessions). Per cent changes in profit margins from peak to trough in official cyclical recessions and in growth slowdowns for selected industry groupings are shown in Table 4. At the industrial corporate sector level, profit margins have tended to decline in both official and growth recessions (Chart 3), though in some cases the fall in margins continued after the trough in output (for example, after the 1974-75 and 1979-80 recessions). The decline in profit margins since 1979Q4 has been the largest in the period under review. A strong cyclical component in the behaviour of profit margins has been especially evident in export-oriented and import-competing industries (Charts 5 and 7). In the 1981Q2-1982Q4 recession, falls in profit margins were extremely large in the export-oriented and open sectors, while record lows were reached in the industrial corporate, manufacturing, export-oriented and closed sectors. The comparatively smaller falls in profit margins in the virtually completely regulated utility sector (there is also a sizeable downward trend in profit margins in this sector between the 1960s and the 1970s, as evident in Chart 10) and in the energy sector during most recessions since 1962 are also worthy of note (Table 4).

Changes in profit margins during recessions for selected industries in the mining, utilities and manufacturing sectors are shown in Table 5. Declines in margins have tended to be larger than average in the following industries: rubber products, textiles and knitting mills and clothing, paper and allied products, and virtually all durable manufacturing industries. In the latest recession, falls in profit margins were also unusually large in chemicals.[9] Margins have tended to be more cyclically stable in mineral fuels, utilities, food and beverages, printing and

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7. Profits were defined as base profits less depreciation, employing the terminology used in Statistics Canada, Industrial Corporations. Financial Statistics. There are some breaks in the series owing to changes in the sample of corporations being surveyed (the most notable occur in 1974 and 1977); links were made at the Bank of Canada. Seasonal adjustment of sales and profits data was done at the Bank of Canada.

8. The definition of export-oriented, open, import-competing, closed and energy industries is given in Appendix 1. Also see Clinton and Hannah (1982).

9. A large amount of excess capacity has developed in the world chemical industry. As well, the Canadian chemical industry has been affected by large increases in its feedstock costs.

publishing, petroleum and coal products and other manufacturing. In
general terms, it seems that profit margins have been more cyclically
volatile in those industries selling in the consumer durable, housing and
capital goods markets, as well as those selling in international markets
and/or exposed to international competition.

Earlier data on disaggregated measures of profits and sales have also
been collected.[10] The profit measure[11] and the industrial
classification differ from the industrial corporation financial data which
have just been discussed, so there are some problems with strict
comparability of the two sets of data.[12] Per cent changes in profit
margins between business cycle peaks and troughs for official
business-cycle recessions and growth slowdowns during the 1950Q1-1969Q3
period are shown in Table 6. At the aggregate industrial level, the
declines in profit margins were of comparable orders of magnitude during
all four official business-cycle recessions. Many of the same industries
noted in Table 5 also tended to experience larger-than-average declines in
profit margins in earlier recessions: rubber products, textiles and
knitting mills and clothing, wood products and furniture, total metal
products[13] and electrical products. The profit margins of the utility
and trade sectors appeared to be much more volatile during these
recessions than has been the case in more recent cyclical downturns. On
the other hand, the volatility of profit margins of the paper and allied
and non-metallic mineral products industries during recessions appears to
have increased over the 1960s and 1970s. These trends are generally
consistent with the relative movements in output during recessions,
especially for wholesale trade, paper and allied products, and
non-metallic mineral products. The paper industry has also been exposed
to more competition in its export markets, especially for newsprint
(Schaefer, 1979). It should be pointed out that these conclusions
concerning the amplitude of changes in the profit margins of different
industries may be somewhat misleading if the peaks and troughs in profit
margins of some industries differ substantially from the official cyclical
turning points.

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10. Data over the 1950Q1-1969Q3 period were taken from Statistics Canada,
Corporation Profits (61-003), and Quarterly Corporation Profits,
1950-1954. Seasonal adjustment of sales and profits data was done at the
Bank of Canada.

11. Profits are defined as net earnings less depreciation and taxes.

12. For instance, the per cent decline in aggregate profit margins during
the 1966Q1-1968Q1 growth slowdown are roughly similar in Tables 5 and 6.
However, there are very substantial differences for many individual
industries.

13. This would include primary metals, metal fabricating, machinery, and
transportation equipment.

Cyclical Behaviour of Profits and Inflation

As is well known, conventional measures of profits become less
reliable in inflationary times. The capital stock and inventories are
generally measured at acquisition costs. Hence depreciation allowances
will prove insufficient as a provision for the replacement of the capital
stock when prices of capital goods are rising. Similarly, the valuation
of inventories on a first in, first out basis will lead to an over-
statement of profits, given that the stock of goods will have to be
replaced at higher prices. Inflation will also have an effect on
financial assets and liabilities. Since the corporate sector tends to be
a net debtor, part of its interest payments will reflect expected
inflation and may be considered as an early payment of principal, so that
conventional profits are understated in this case. On the other hand, the
corporate sector tends to be a net holder of non-interest-bearing
financial assets and must hold increasing nominal amounts of these assets
in order to maintain their real value; hence, conventionally measured
profits are overstated.

Estimation of inflation-adjusted profits and consideration of the
effects of inflation on firm behaviour has been the subject of
considerable research in the United States[14] and elsewhere. A
considerable body of research has also been generated in Canada, including
recent work at the Bank of Canada and the Department of Finance. One area
of interest at the Bank of Canada has been the estimation of
inflation-adjusted rates of return at an industry level.[15] Naïve
measures of the rate of return, defined as the ratio of pre-tax book
profits to the book value of equity, were first calculated.
Inflation-adjusted rates of return were calculated as the ratio of pre-tax
inflation-adjusted profits to the sum of the book value of equity and the
difference between the replacement and book value of the capital stock.
Adjustments to profits for the impact of inflation included all of the
factors outlined in the first paragraph of this section.

Naïve and inflation-adjusted rates of return over the 1966-80 period
for the non-financial corporate and manufacturing sectors are shown in
Charts 11 and 12 respectively. Per cent changes in these measures of
rates of return over trough-to-peak and peak-to-trough periods are shown
in Table 7. During the period under review, there was a tendency for
naïve measures of the rate of return to rise. It is evident, however,
that this trend was related to higher inflation rates, as inflation-
adjusted rates either showed little or no trend (non-financial sector) or
displayed a distinct downward trend (manufacturing sector). As might have
been expected from the earlier description of the cyclical behaviour of

14. E.g., Feldstein (1983).

15. The basic set of underlying data was taken from Statistics Canada,
Corporation Financial Statistics (61-207) and Corporation Taxation
Statistics (61-208).

profit margins, aggregate rates of return have tended to be pro-cyclical. It is of interest, however, to observe that the trough in aggregate rates of return lagged that of output by about two years after the 1974-75 recession. While the timing of cycles in both naïve and inflation-adjusted rates of return has been quite similar, the amplitude of cycles in inflation-adjusted rates of return has been much smaller than that of naïve rates of return.

I have also examined the dispersion of rates of return over the 1966-80 period, through a calculation of weighted variances of rates of return in the "non-financial"[16] (Chart 13) and manufacturing[17] (Chart 14) sectors. In the "non-financial" sector, the dispersion of rates of return tended to be pro-cyclical, whether or not adjusted for inflation. The peak in the variance of rates of return tended to coincide with the business-cycle peak. This tendency was undoubtedly correlated with the extreme cyclical sensitivity of commodity prices, as well as with the 1973-74 and 1979-80 oil price shocks. The dispersion of naïve rates of return in the manufacturing sector also tended to be pro-cyclical. Inflation-adjusted rates of return were also pro-cyclical over the 1966-75 period, with much larger fluctuations than for the naïve rate of return during the 1970-75 business cycle. However, cyclical fluctuations in the dispersion of inflation-adjusted rates of return in the manufacturing sector seem to have almost disappeared after 1975.

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16. Only a subset of industries in the non-financial sector was considered. These included mining, forestry, all two-digit manufacturing industries, and transportation. Net output weights were used.

17. All two-digit manufacturing industries were included in making the calculation. Net output weights were used.

Table 1

Aggregate Profit Margins

| | Business-cycle dates | | | | | | % Change in profit margin: Initial-trough-to-peak profit margins | % Change in profit margin: Peak-to-final-trough profit margins | % Change in profit margin: Reference cycle initial trough-reference cycle peak | % Change in profit margin: Reference cycle peak to reference cycle final trough | % Change in real GNP: Reference cycle peak to reference cycle trough |
	Initial reference cycle trough	Initial trough-profit margin	Reference cycle peak	Peak-profit margin	Final reference cycle trough	Final trough-profit margin					
1951Q4-1954Q2	1951Q4	1952Q2	1953Q2	1952Q3	1954Q2	1954Q1	0.6	-16.2	-8.5	-11.9	-2.6
1954Q2-1957Q4	1954Q2	1954Q1	1956Q4	1955Q4	1957Q4	1957Q4	24.0	-25.1	12.0	-17.0	-0.3
1957Q4-1961Q1	1957Q4	1957Q4	1960Q1	1958Q4	1961Q1	1961Q1	15.8	-18.3	13.6	-16.8	-1.1
1961Q1-1968Q1	1961Q1	1961Q1	1966Q1	1964Q1	1968Q1	1967Q2	30.3	-14.6	26.2	-9.4	7.1
1968Q1-1970Q4	1968Q1	1967Q2	1969Q4	1968Q4	1970Q4	1970Q4	9.8	-24.4	-3.3	-19.3	0.9
1970Q4-1975Q1	1970Q4	1970Q4	1974Q1	1974Q1	1975Q1	1976Q4	68.6	-34.4	68.6	-17.8	-0.4
1975Q1-1982Q4	1975Q1	1976Q4	1979Q4	1979Q3	1982Q4	1982Q3	40.2	-58.9	8.0	-51.3	-2.1

Table 2

Profit-Margin Regressions (t-statistic in brackets)

| Regression | Coefficient | | | $\bar{R}^2$ | Durbin-Watson atatiatic | Sample period |
	Constant	Trend	Capacity utilization			
1	-.24 (-6.1)	-.0002 (-8.4)	.391 (9.6)	.543	0.19	1947Q1-1983Q4
2	-.08 (-2.0)	-.0004 (-9.5)	.233 (5.4)	.550	0.27	1947Q1-1969Q4
3	-.42 (-6.8)	-.0003 (-2.6)	.591 (9.7)	.667	0.23	1970Q1-1983Q4
4	-.25 (-6.3)	-.0001 (-3.9)	.398 (9.6)	.466	0.19	1953Q3-1983Q4
5	-.01 (-0.4)	-.0001 (-2.8)	.149 (3.7)	.189	0.30	1953Q3-1969Q4
6	-.42 (-6.8)	-.0003 (-2.6)	.591 (9.7)	.667	0.23	1970Q4-1983Q4
7	-.13 (-2.9)	-.00002 (-0.7)	.264 (5.6)	.214	0.20	1953Q3-1981Q2
8	-.01 (-0.9)	-.0001 (-2.8)	.149 (3.7)	.189	0.30	1953Q3-1969Q4
9	-.55 (-5)	-.0003 (-1.9)	.731 (5.8)	.479	0.32	1970Q1-1981Q2

Table 3

Cyclical Behaviour of Profit Margins (Ratio of Corporate Profits Before Taxes to Current Dollar Gross Domestic Product) Using Annual Data

Business-cycle period	Real GNE		Per cent change in real GNE	Profit Margins																
				Aggregate		Mining[3]		Manufacturing		Transportation		Communications		Wholesale trade		Retail trade		Finance, insurance and real estate	
	Peak	Trough	Peak to trough	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
? -1933	1929	1933	-30.1	N/A	-90.5	N/A	-43.2	N/A	**	N/A	-94.2	N/A	N/A	N/A	**	N/A	**	N/A	-38.1
1933-1938	1937	1938	0.8	1271	-17.4	137	-8.0	**	-19.3	857.5	-8.6	N/A	N/A	**	-30.9	**	-33.1	101.8	-33.1
1938-1946	1944	1946	-4.9	43.4	-9.1	7.8	-27.3	35.8	-24.3	183.4	-54.9	N/A	N/A	191.4	-14.2	*	*	38.3	-28.5
1946-1954	1953	1954	-1.2	39.1	-8.5	28.7	-35.1	46.6	-28.2	48.7	-45.2	N/A	-44.6	52.1	-52.5	*	-38.5	16.1	-3.1
1954-1957	1956	1957	2.4	15.8	-13.9	21.9	-31.0	16.5	-18.0	62.1	-42.6	1.5	-13.6	44.4	*	31.9	-9.0	6.0	-19.8
1957-1961	1960	1961	2.8	2.5	-6.3	*	*	6.4	-7.6	21.7	-6.8	*	*	*	*	10.9	-21.2	35.5	-9.3
1961-1975	1974	1975	1.2	34.0	-27.3	149.1	-16.1	41.9	-33.5	34.9	-20.4	*	-13.5	111.7	-45.5	37.5	-32.2	42.4	-5.3
1975-1982	1979	1982	-0.2	26.0	-54.0	27.0	-44.1	39.1	-70.2	23.0	-55.7	18.3	-12.4	41.0	-58.0	-58.0	-62.0	10.1	-67.7

1. Per cent change in profit margins from initial trough to peak in profit margins. Peaks and troughs in profit margins may differ from those of real GNE.
2. Per cent change in profit margins from peak to final trough in profit margins.
3.

	Of which: Mineral fuels	
	(1)	(2)
1961-1975	333.8	-1.9
1975-1982	12.7	-36.1

Note that profit margins for mineral fuels defined as ratio of profits before taxes to gross sales.

* No distinctive peak or trough in series discernible at a time close to period under observation.

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Table 4

Changes in Profit Margins During Recessions (Including Growth Slowdowns): Selected Industry Aggregates (% change)

	1966Q1–1968Q1	1969Q4–1970Q4	1974Q1–1975Q1	1979Q4–1980Q2	1981Q2–1982Q4
Total industrial corporations[1]	-14.6	-18.2	-18.7	-4.8	-42.7
Mining	4.0	-2.7	-9.3	-7.3	-31.3
Utilities[3]	-3.8	17.8	-29.3	-3.5	-2.7
Manufacturing	-22.0	-35.5	-22.4	-8.8	-55.8
Wholesale trade	-18.1	8.8	-20.9	3.6	-32.4
Retail trade	-10.2	-14.0	-1.5	-6.6	-56.8
Other services	-30.4	-39.9	9.3	-2.1	-36.1
Export-oriented	-20.1	-30.1	-21.5	-23.4	(2)
Open	-22.4	-97.4	-28.5	-22.9	-88.5
Import-competing	-27.4	-30.6	-31.3	-14.2	-29.9
Closed	-15.7	-10.0	-26.1	-5.0	-30.1
Energy	14.0	13.2	-5.1	4.3	-13.3

1. Excludes agriculture, forestry, fishing, trapping, construction, finance and real estate, and government business enterprises.

2. Movement from profit to loss position.

3. Includes electric power, gas distribution, water utilities, transportation, storage and communication.

Table 5

Changes in Profit Margins During Recessions (Including Growth Slowdowns): Selected Industries (% change)

	1966Q1–1968Q1	1969Q4–1970Q4	1974Q1–1975Q1	1979Q4–1980Q2	1981Q2–1982Q4
Metal mining	1.3	6.2	-24.5	-18.1	(1)
Mineral fuels	26.9	-28.8	17.1	2.9	-12.0
Other mining	-23.3	0.4	-41.4	17.3	-56.9
Electric power, gas distribution and water utilities	11.3	6.3	-20.2	-9.3	8.3
Other utilities (transportation, storage and communication)	-10.3	21.0	-36.9	-1.9	-6.5
Food and beverages	1.6	-9.2	-28.6	6.1	-2.4
Rubber products	-25.6	-13.5	-24.5	-32.0	-68.6
Textiles, knitting mills and clothing	-46.0	-35.0	-76.1	-13.9	-68.4
Paper and allied products	-47.7	-61.0	-8.8	-13.7	(1)
Printing and publishing	-1.7	9.6	-17.2	8.3	33.2
Petroleum and coal products	2.0	39.5	-20.9	7.8	-17.0
Chemicals	-14.3	-7.0	-2.2	-1.1	-61.0
Other manufacturing (includes tobacco, leather, plastics and miscellaneous non-durables)	13.4	-26.1	-36.4	6.6	-0.2
Wood products and furniture	1.4	(1)	-61.1	-62.4	(1)
Primary metals	-23.9	-45.1	-4.0	-7.6	(1)
Metal fabricating	-32.7	-19.3	-21.0	-13.4	-78.9
Machinery	-22.7	11.1	22.2	-35.8	-80.5
Transportation equipment	-26.8	(1)	-90.3	(1)	(1)
Electrical products	-43.0	-39.9	12.5	-21.9	-27.9
Non-metallic mineral products	-50.7	-21.0	-33.5	-35.0	-95.7

(1) Movement from profit to loss position, or in loss position.

Table 6

Changes in Profit Margins During Recessions (Including Growth Slowdowns): % Change

	1951Q1–1951Q4	1953Q2–1954Q2	1956Q4–1957Q4	1960Q1–1961Q1	1966Q1–1968Q1
Total industries[1]	-19.0	-21.4	-16.9	-23.6	-12.7
Mining	1.3	-10.9	-12.5	-31.6	-10.2
Utilities	-0.4	-32.5	-27.9	-14.1	-21.9
Electric power, gas distribution and water utilities	N/A	-22.6	-14.9	-8.0	23.1
Other utilities (transportation, storage and communication)	N/A	-36.9	-31.8	-21.6	-39.4
Manufacturing	-24.0	-19.3	-10.9	-23.2	-13.2
Food and beverages	-17.2	-6.6	-3.6	-10.1	9.4
Rubber products	N/A	-29.8	-63.9	92.3	-12.2
Textiles, knitting mills and clothing	-82.0	-18.7	-37.0	34.9	-28.9
Paper and allied products	N/A	-5.5	-2.9	-7.8	-10.8
Printing and publishing	N/A	-11.8	-12.3	-29.5	10.4
Petroleum and coal products	N/A	-0.1	0.8	-41.5	-14.1
Chemicals	-27.3	-17.5	-2.0	-39.0	-16.2
Other manufacturing (includes tobacco, leather, plastics and miscellaneous non-durables)	N/A	14.5	2.0	35.9	6.6
Wood products and furniture	N/A	-30.2	-53.6	-66.2	4.7
Total metal products	N/A	-33.3	-15.8	-28.3	-25.1
Iron and steel products	-19.3	-34.5	-10.9	N/A	N/A
Other non-ferrous metal products	N/A	-26.8	(2)	N/A	N/A
Electrical products	N/A	-46.2	-28.4	-69.7	-24.6
Non-metallic mineral products	N/A	-13.2	-3.9	-3.3	-66.4
Wholesale trade	-30.6	-25.8	-36.4	-31.8	-16.8
Retail trade	-34.8	-37.9	-10.3	-21.6	-9.0
Memorandum: Wood and paper products	-12.3	-15.2	-10.3	-22.2	0.5

1. Excludes agriculture, forestry, fishing, trapping, construction, finance, insurance and real estate and other services.

2. Movement from profit to loss position.

Table 7

Cyclical Movements in Aggregate Rates of Return (% Change)

Cyclical period	Non-Financial		Manufacturing	
	Unadjusted	Inflation-adjusted	Unadjusted	Inflation-adjusted
1966-1968	-5.5	-9.6	-6.6	3.1
1968-1969	2.0	2.6	5.3	2.6
1969-1970	-9.4	-9.0	-17.8	-16.1
1970-1974	79.8	46.9	106.7	42.7
1974-1975	-12.0	-11.8	-18.6	-12.4
1975-1979	22.7	-11.3	15.5	-27.6
1979-1980	-3.2	4.9	-3.9	0.4

CHART 1

CORP PROFITS/GDP AT FACTOR COST
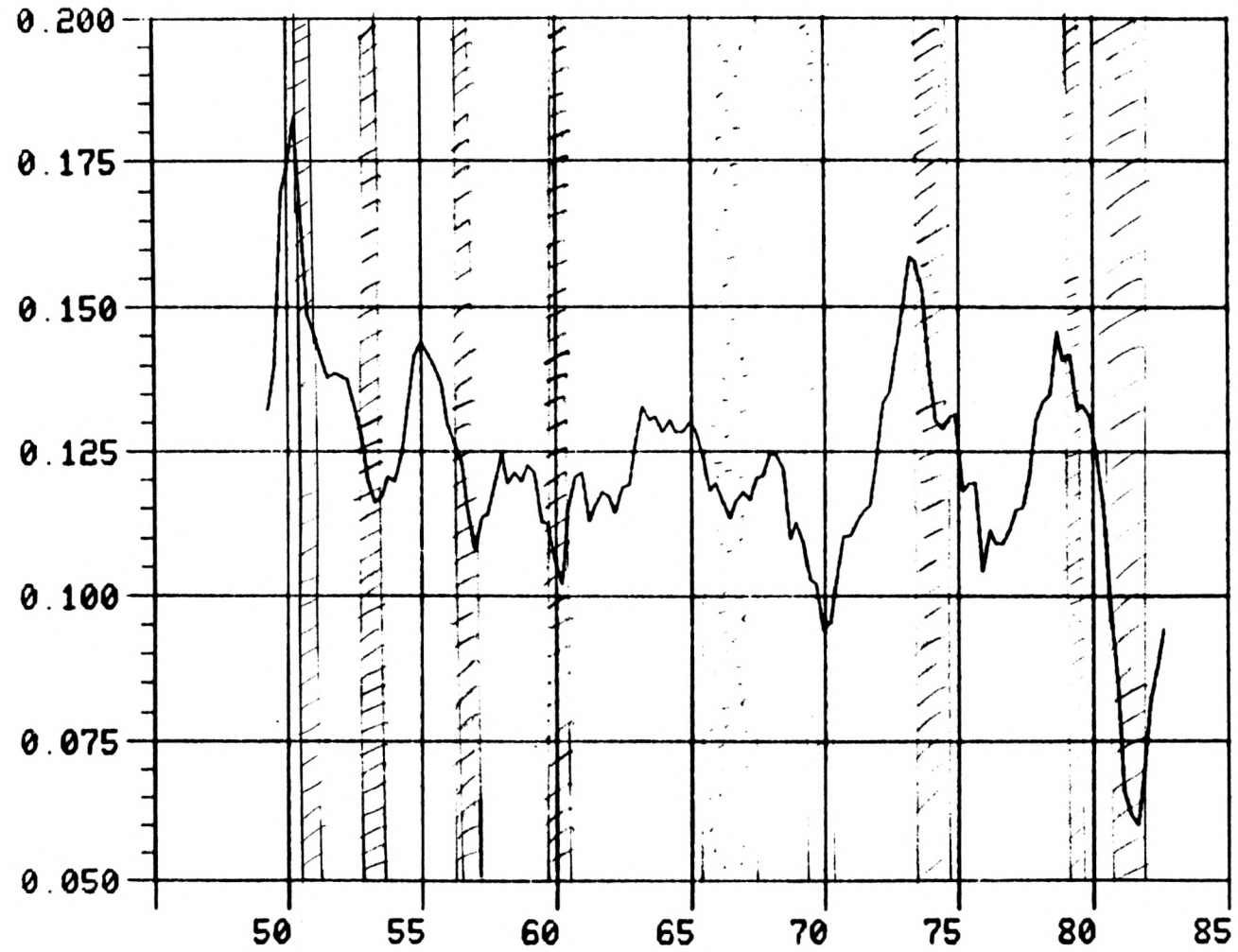
46- 85

_____SALC

CHART 2

CORP. PROFITS/GDP AT FACTOR COST (Annual Data)
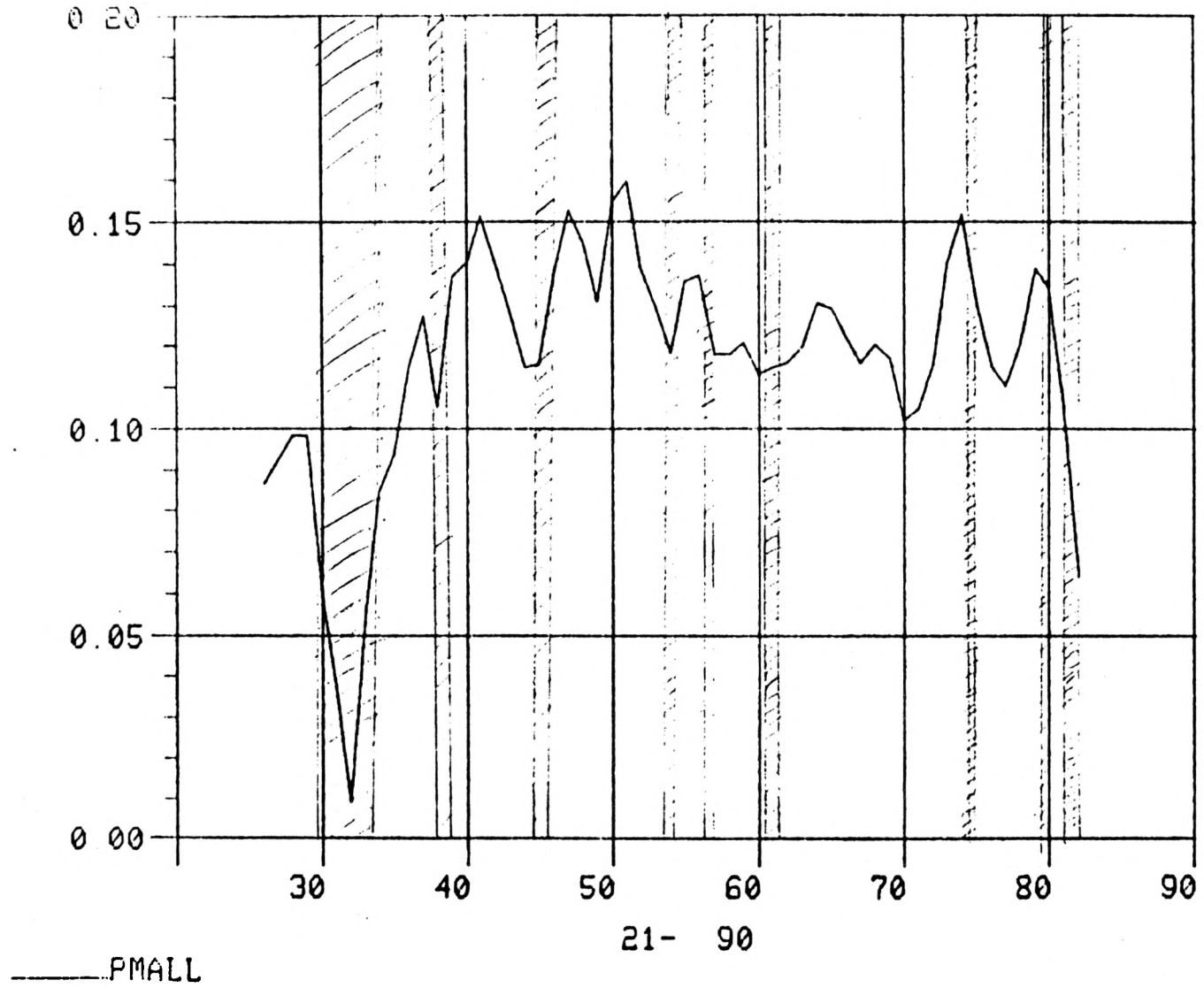
21- 90

_____PMALL

CHART 3

CORP. PROFITS/GDP AT FACTOR COST (Annual Data)
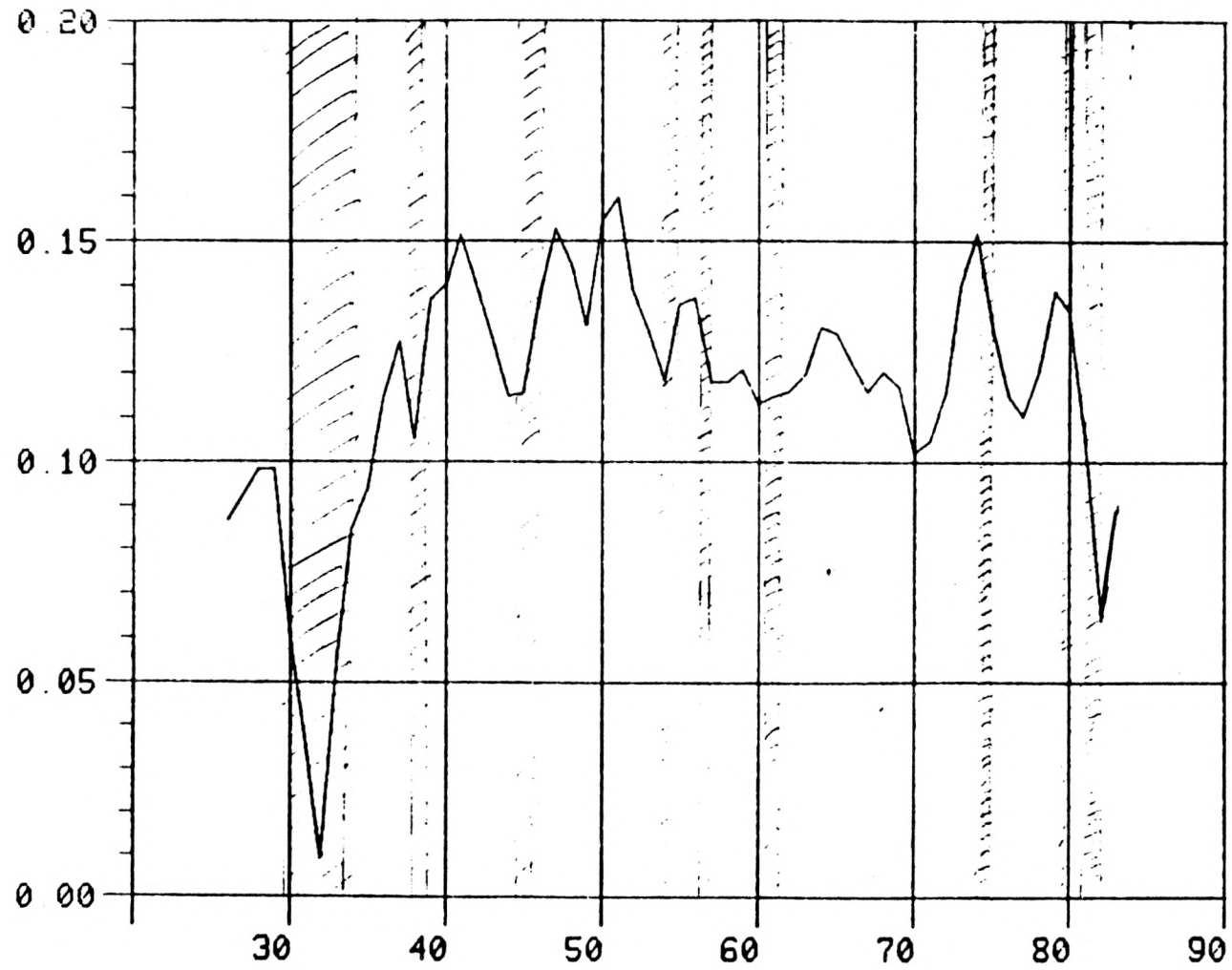
21- 90

—————PMALL

CHART 4

PROFIT MARGINS - MANUFACTURING
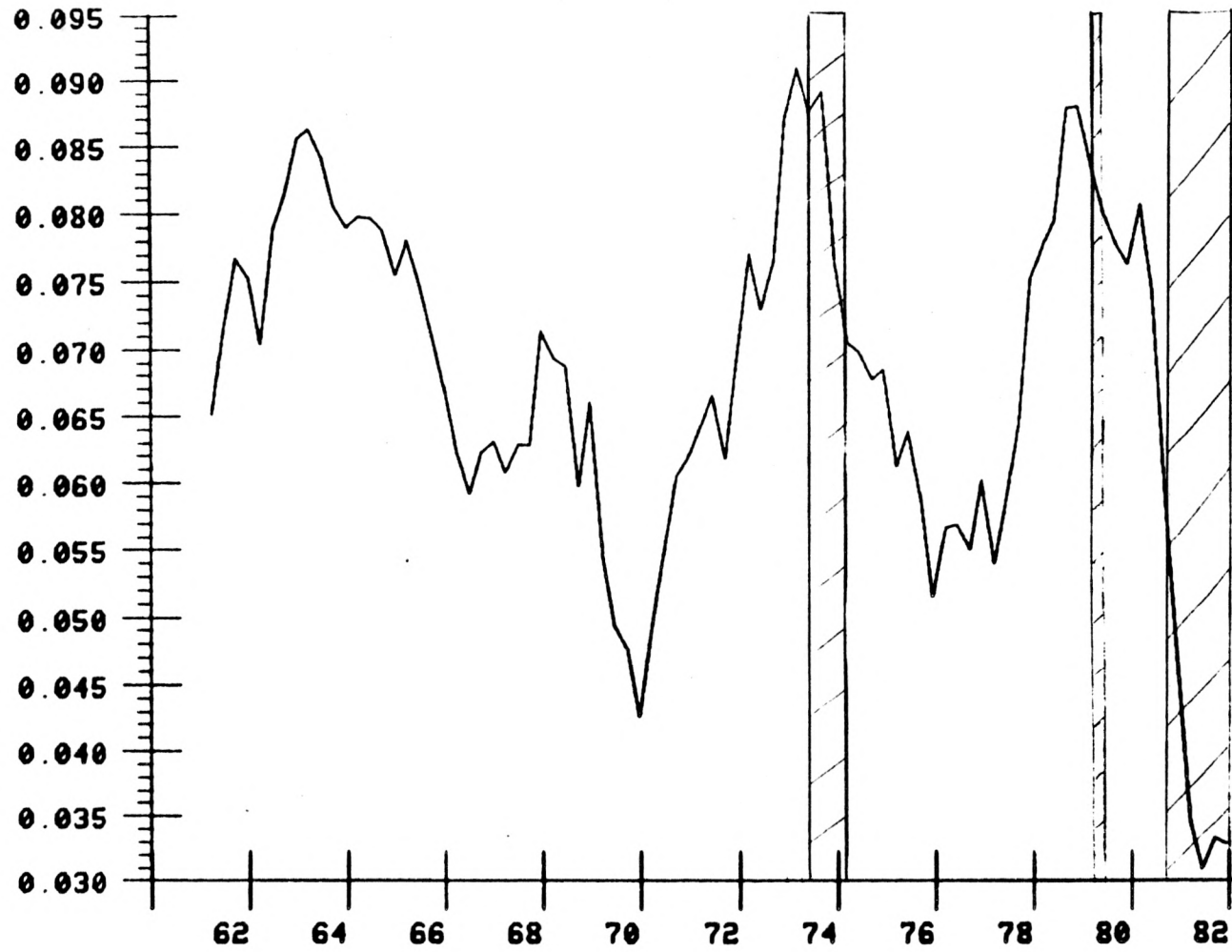
61- 82

AMMAN

CHART 5

PROFIT MARGINS - EXPORT-ORIENTED

61- 82

_____AMEXPO
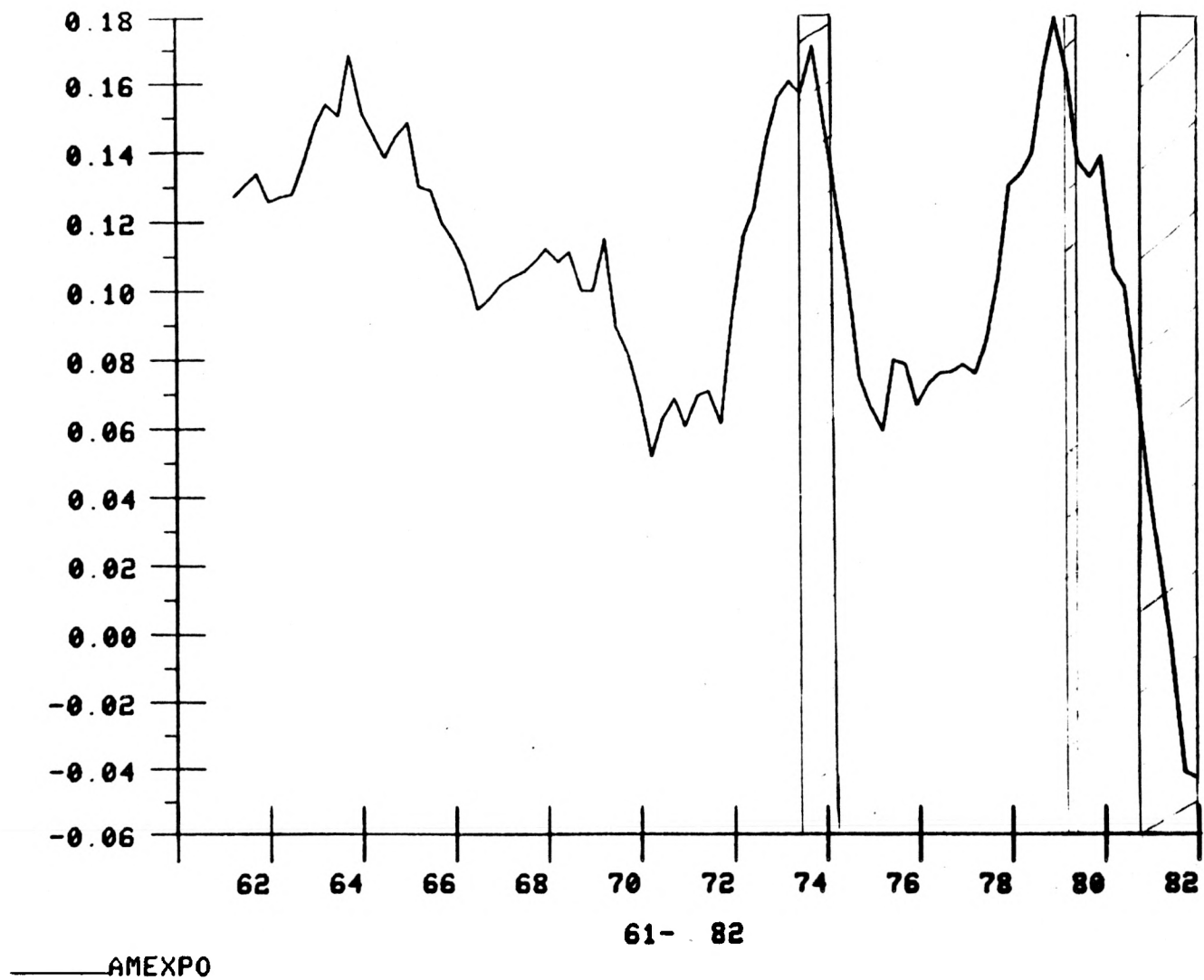
CHART 6

PROFIT MARGINS - OPEN

61- 82

AMOPEN
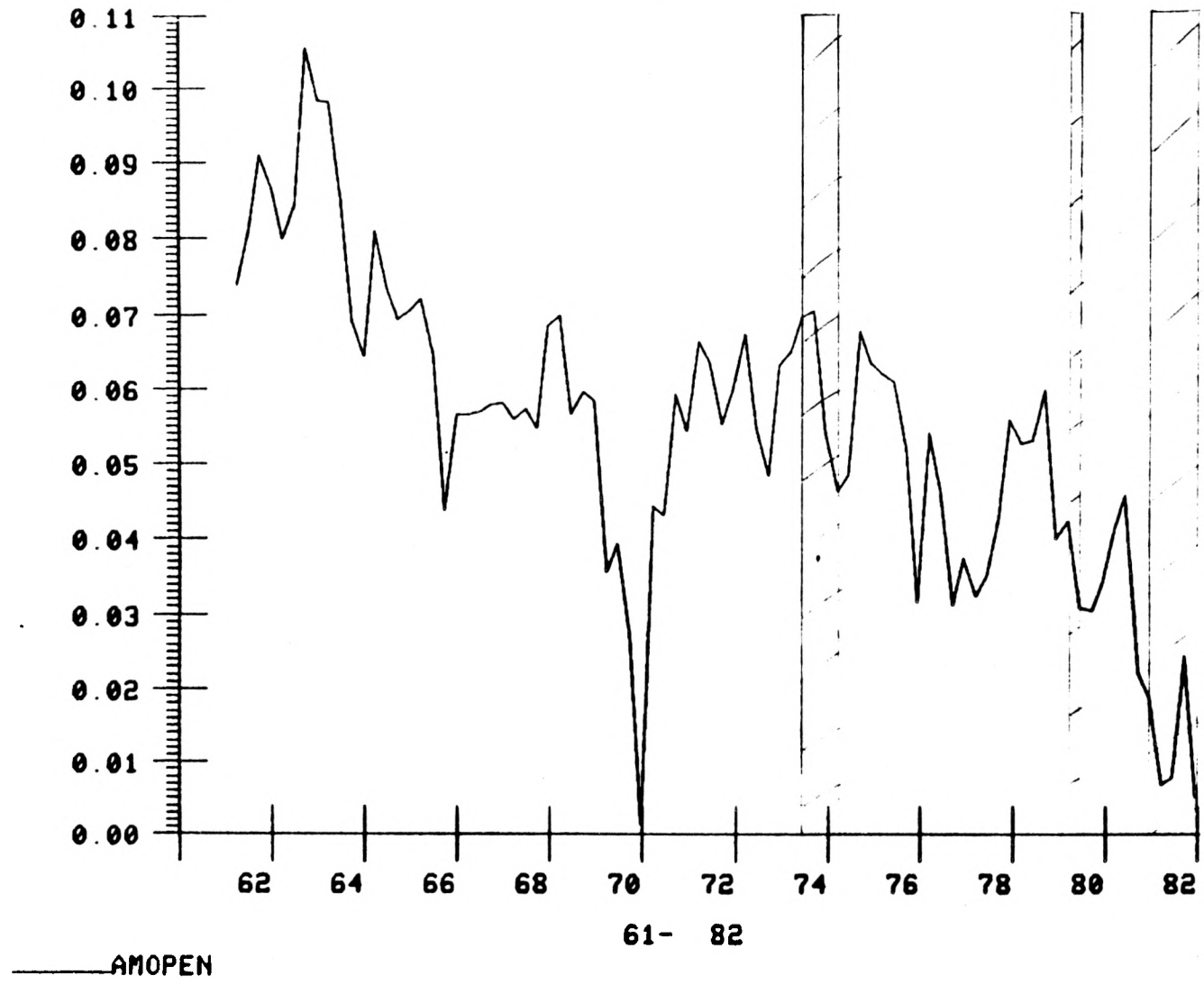
CHART 7

PROFIT MARGINS - IMPORT-COMPETING

61- 82

_____AMIMC
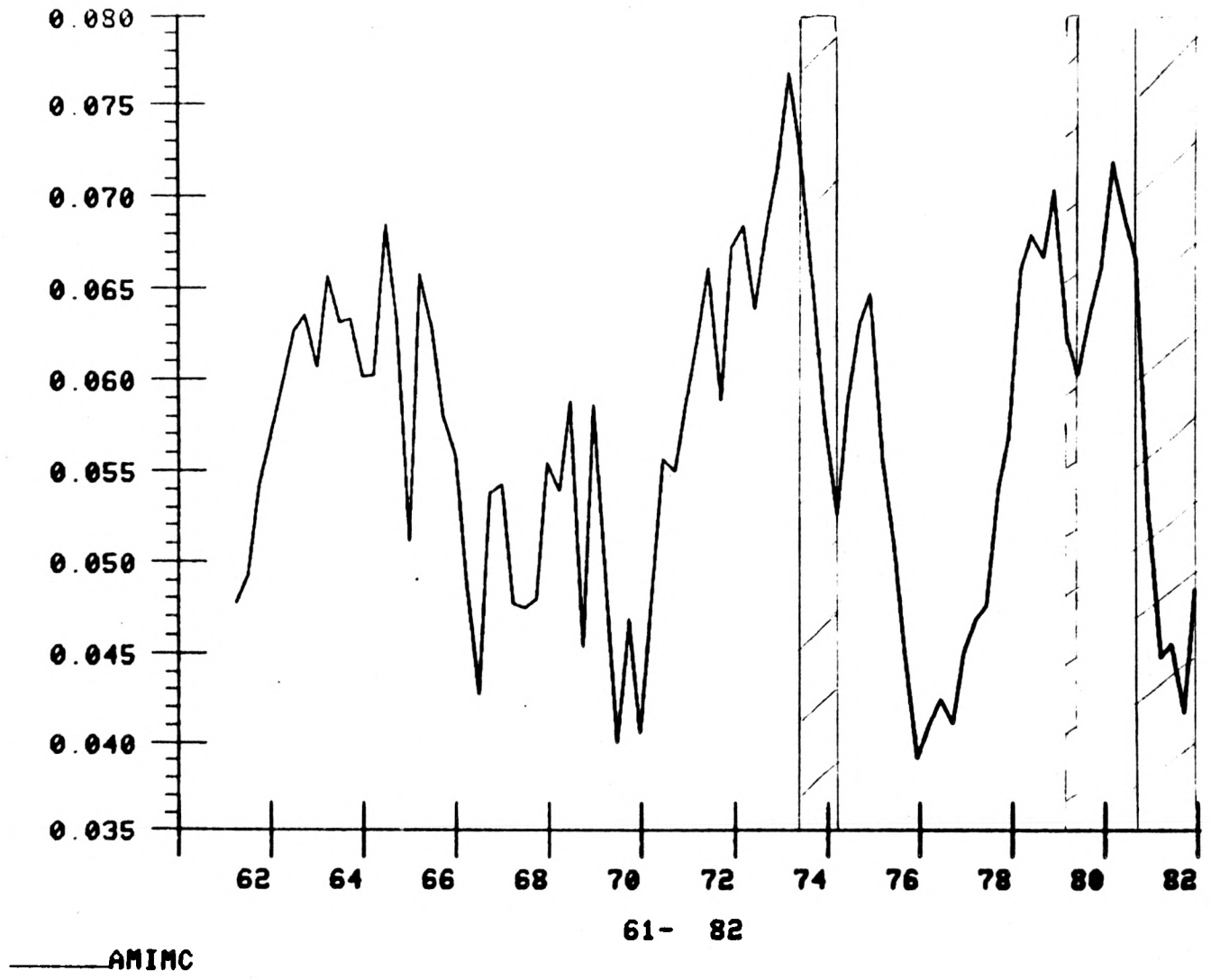
CHART 8

PROFIT MARGINS - CLOSED

61- 82

_____AMCLO
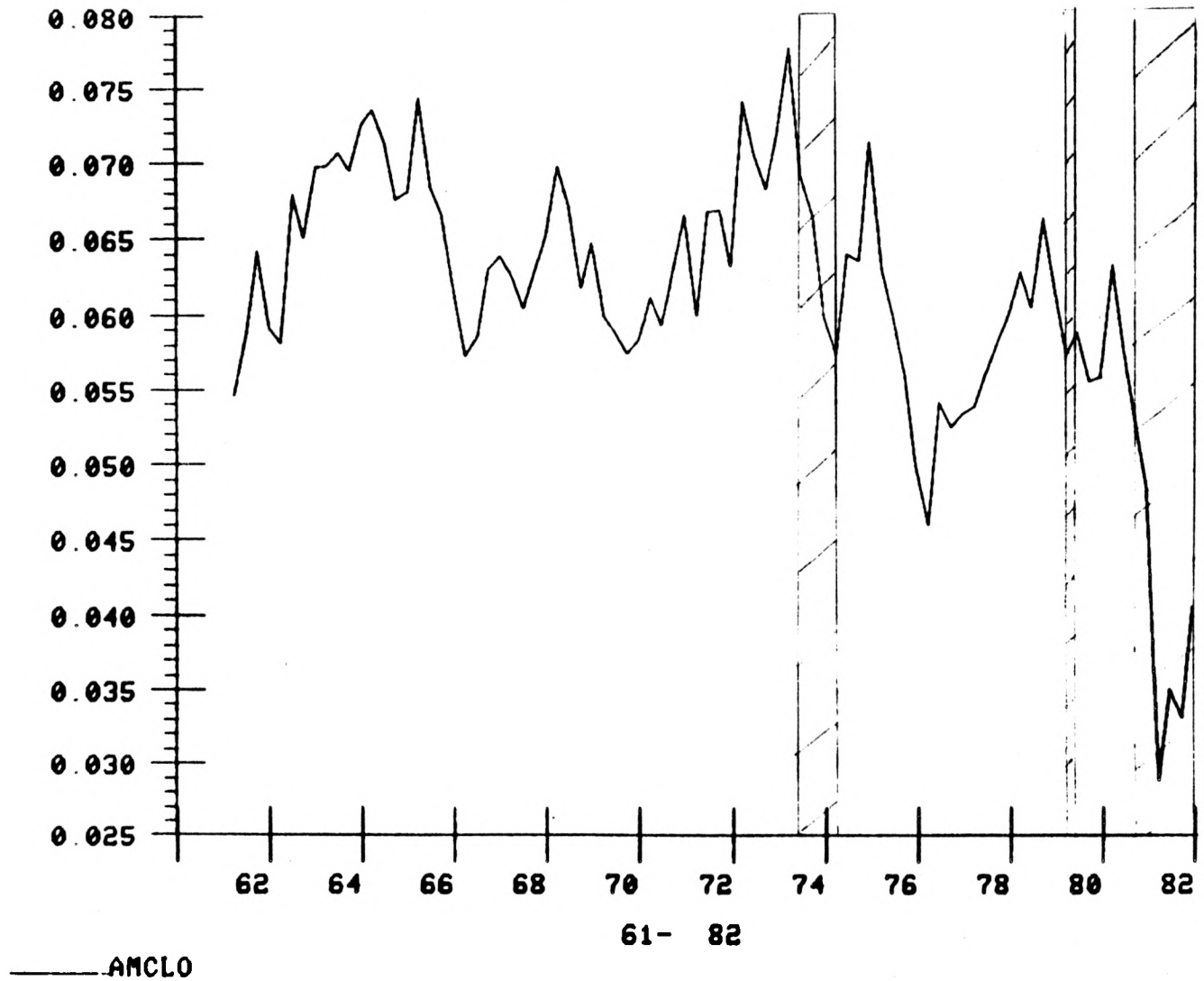
CHART 9

PROFIT MARGINS – ENERGY
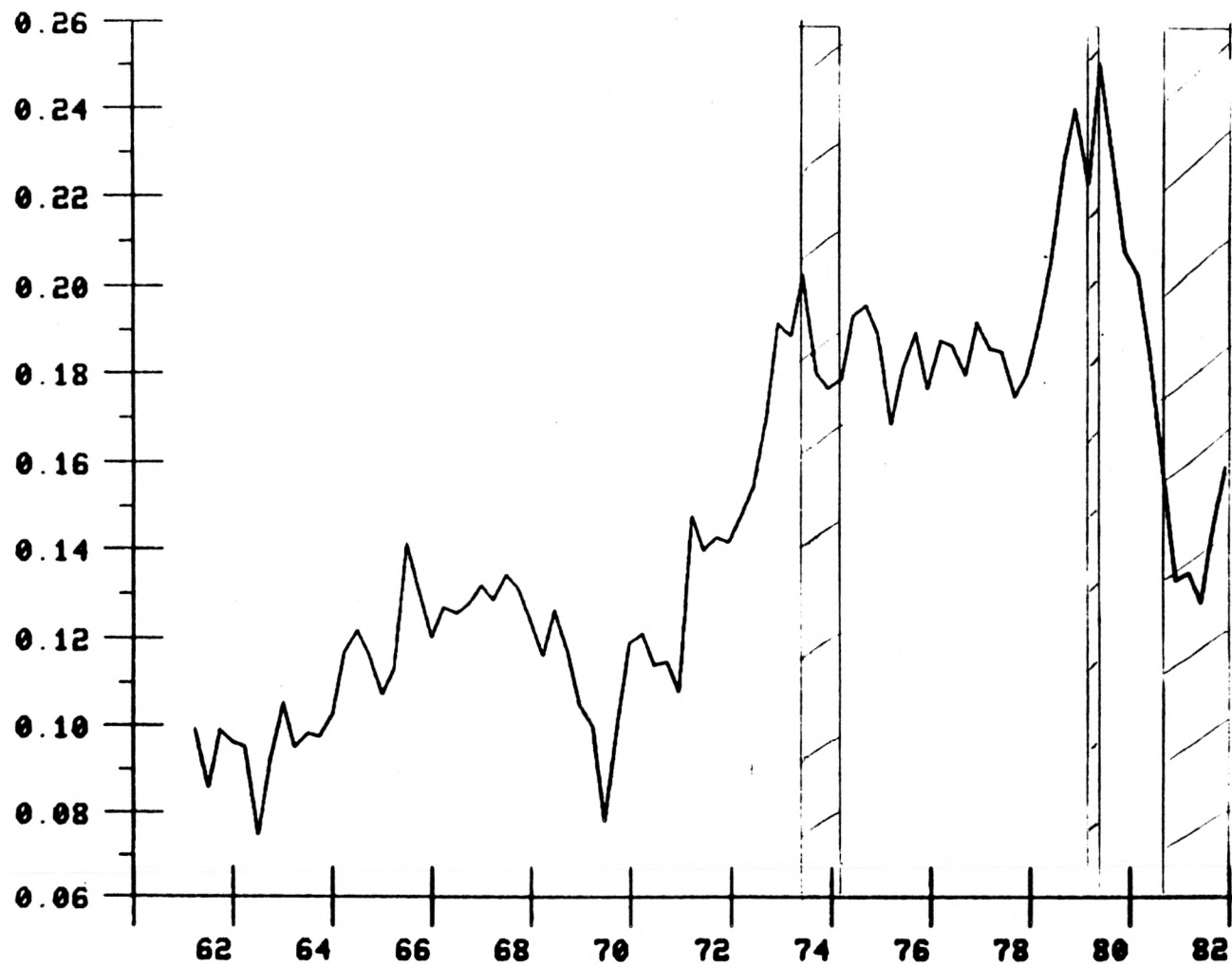
61- 82

_____AMEN

CHART 10

PROFIT MARGINS - UTILITIES

61- 82

AMUTL
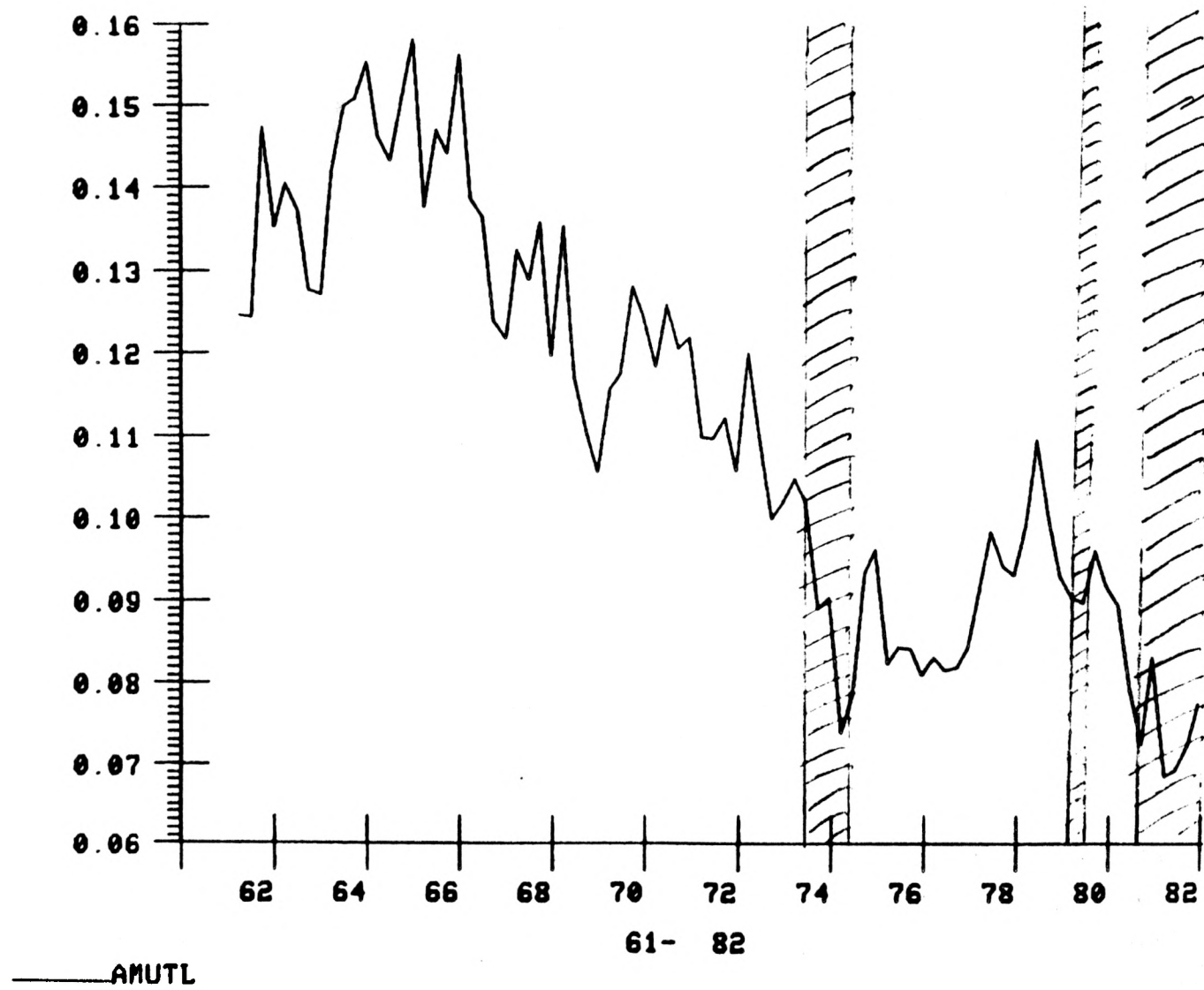
CHART 11

PRE-TAX RATES OF RETURN-NON-FINANCIAL

66- 80

TNFRBB ---- TNFRBI
TNFRBB-RAW TNFRBI-INFLATION-ADJUSTED

- 27 -
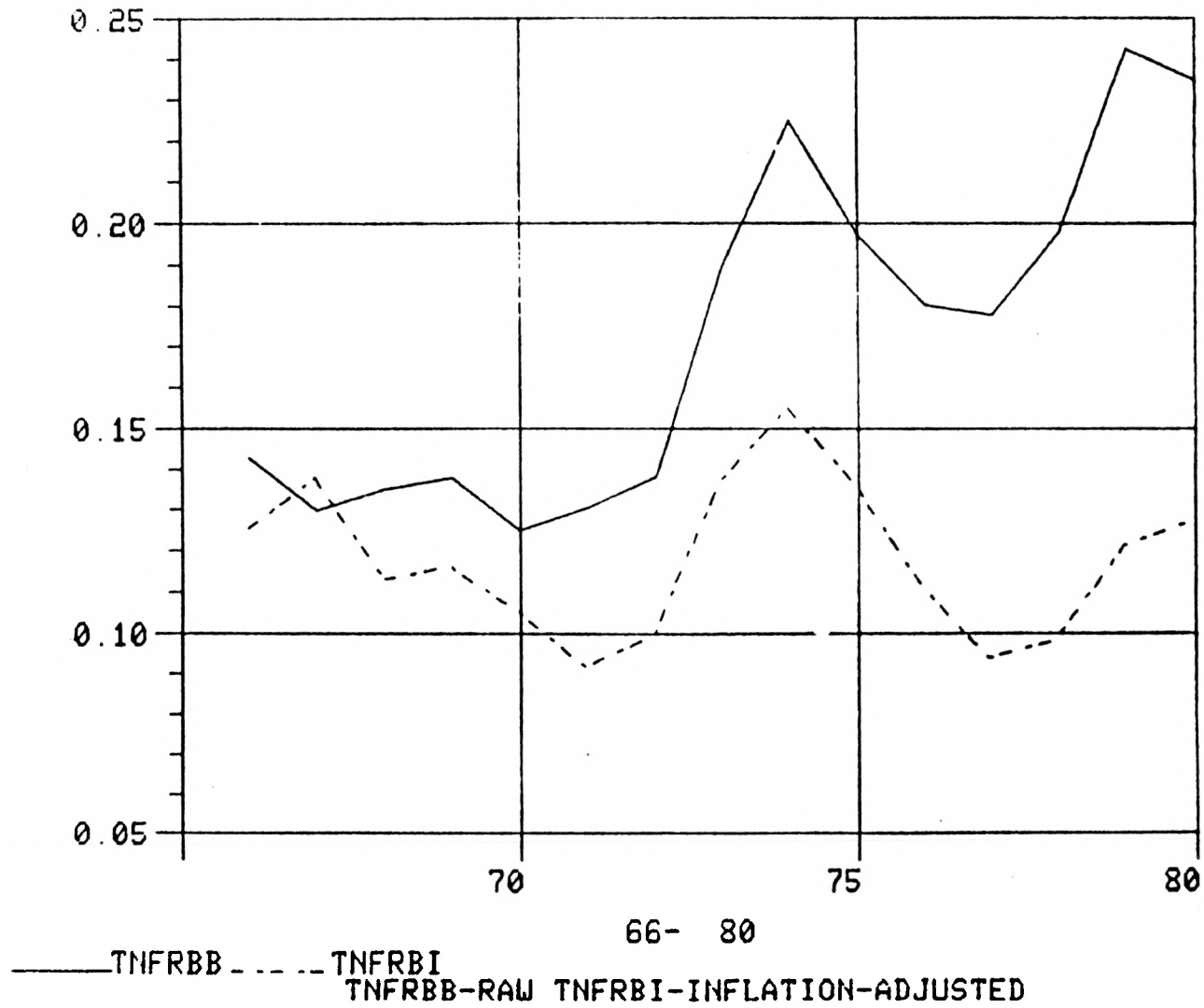
CHART 12

PRE-TAX RATES OF RETURN-MANUFACTURING

66- 80

——MFGRBB — . — . — MFGRBI
MFGRBB-RAW MFGRBI-INFLATION ADJUSTED

- 28 -
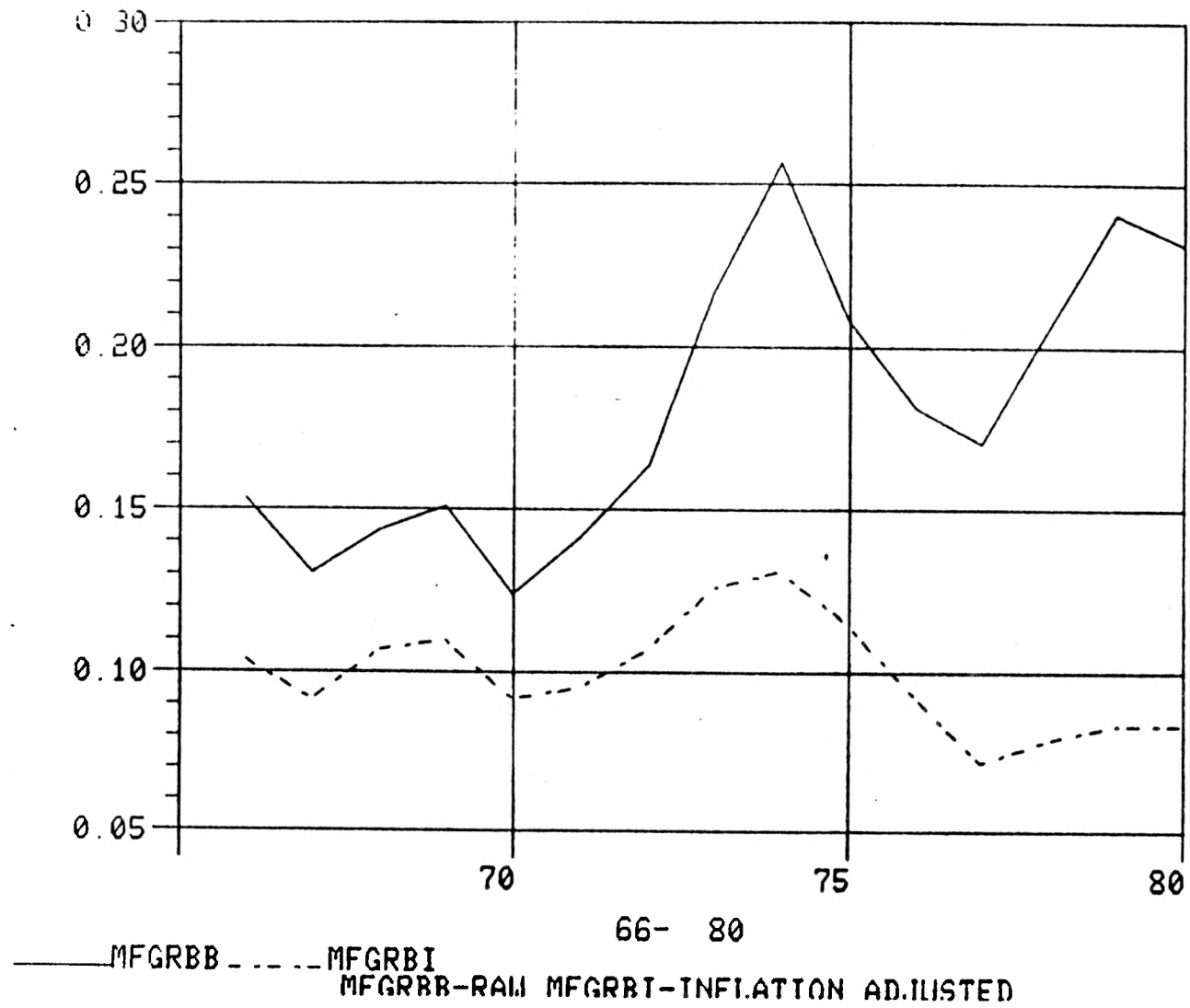
CHART 13

WEIGHTED VARIANCE OF RATES OF RETURN - NON-FINANCIAL

VRXWRR .... VRXWAR
VRXWRR-RAW   VRXWAR - INFLATION-ADJUSTED

- 29 -
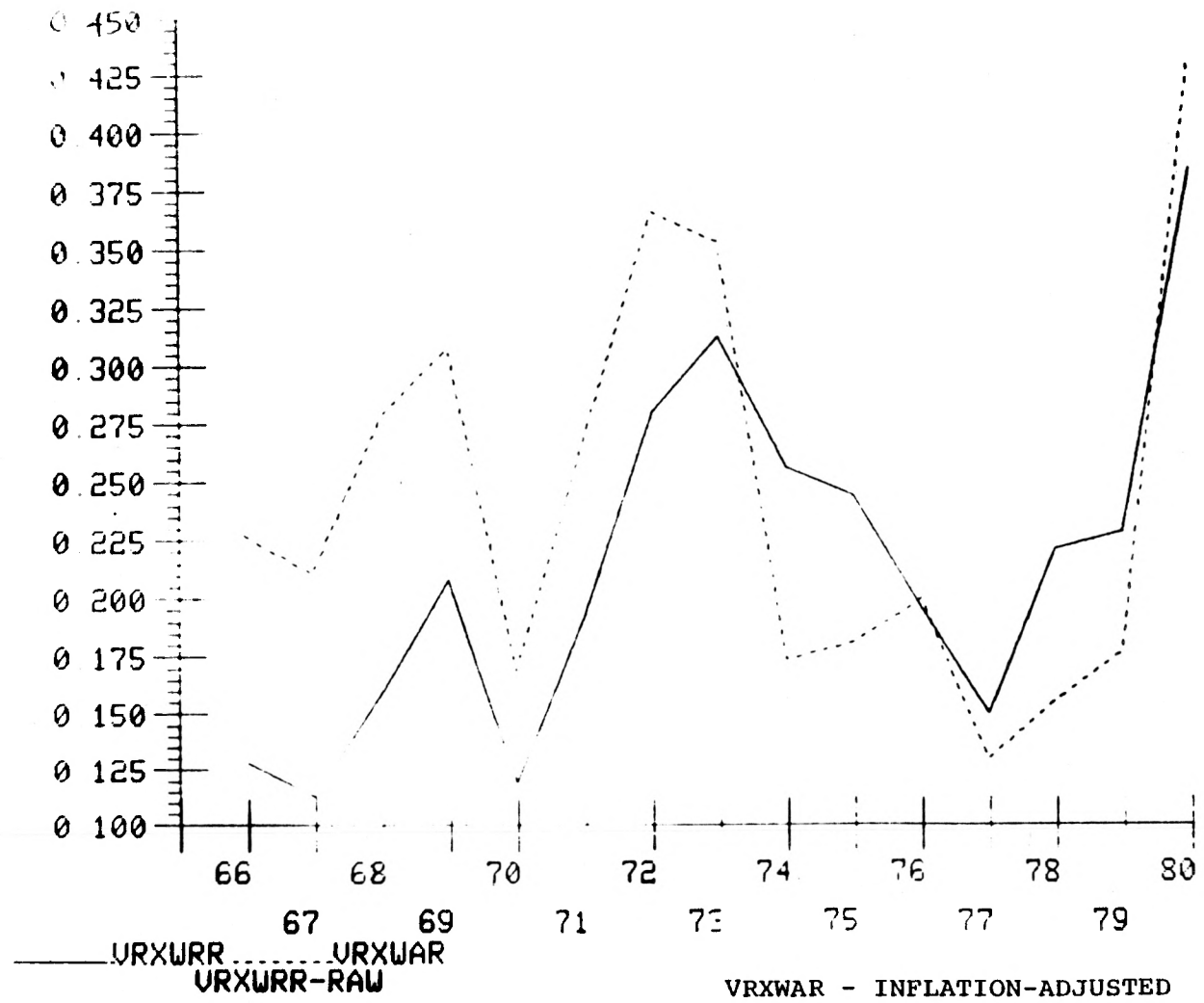
CHART 14

WEIGHTED VARIANCE OF RATES OF RETURN - MANUFACTURING

_____VMFWRR ....VMFWAR

VMFWRR - RAW   VMFWAR - INFLATION-ADJUSTED
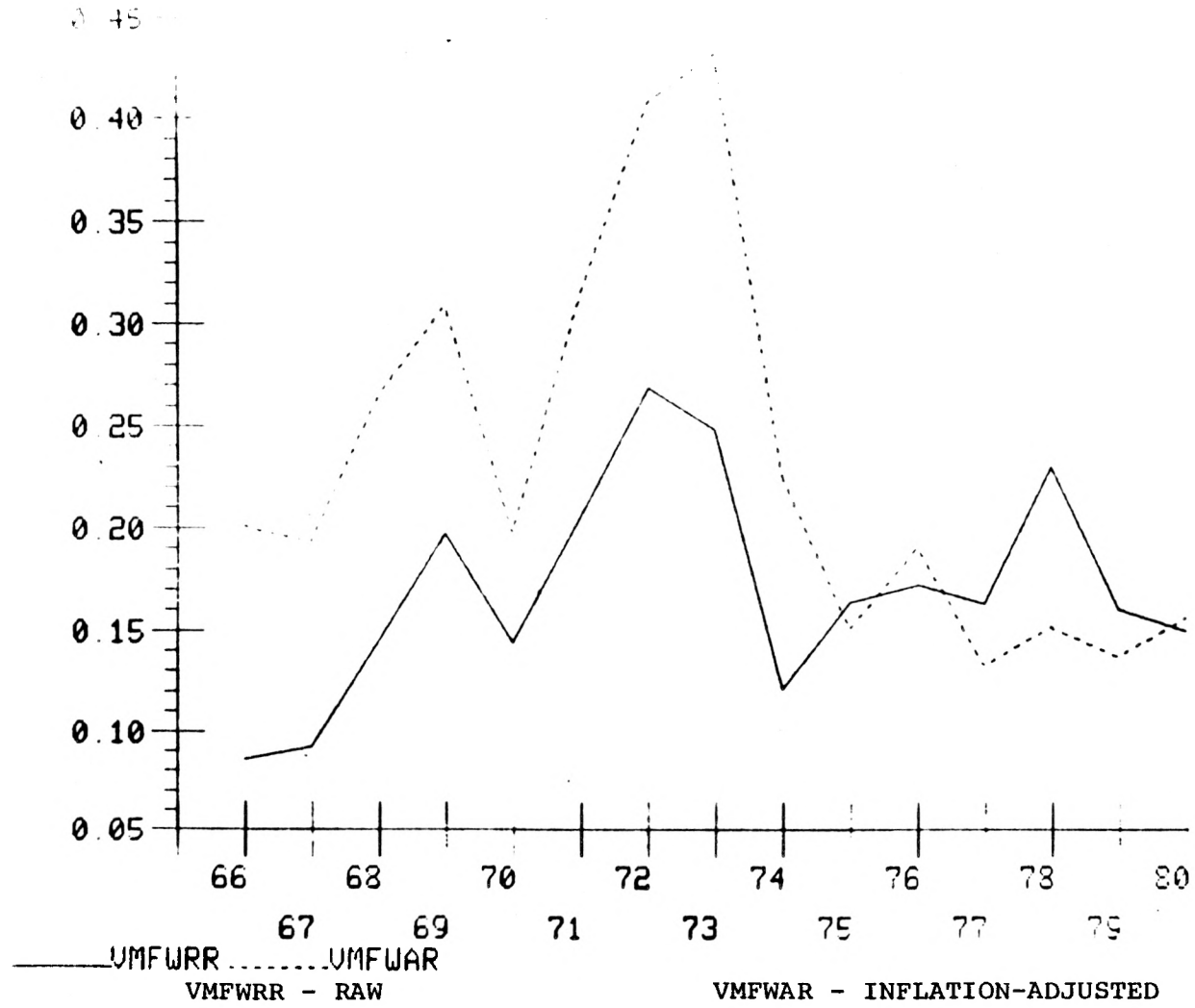
APPENDIX 1

Definition of Trade-Oriented Industry Groupings

Export-Oriented:
Mining excluding oil and gas
Wood products
Paper and allied products
Primary metals

Open:
Machinery
Transport equipment
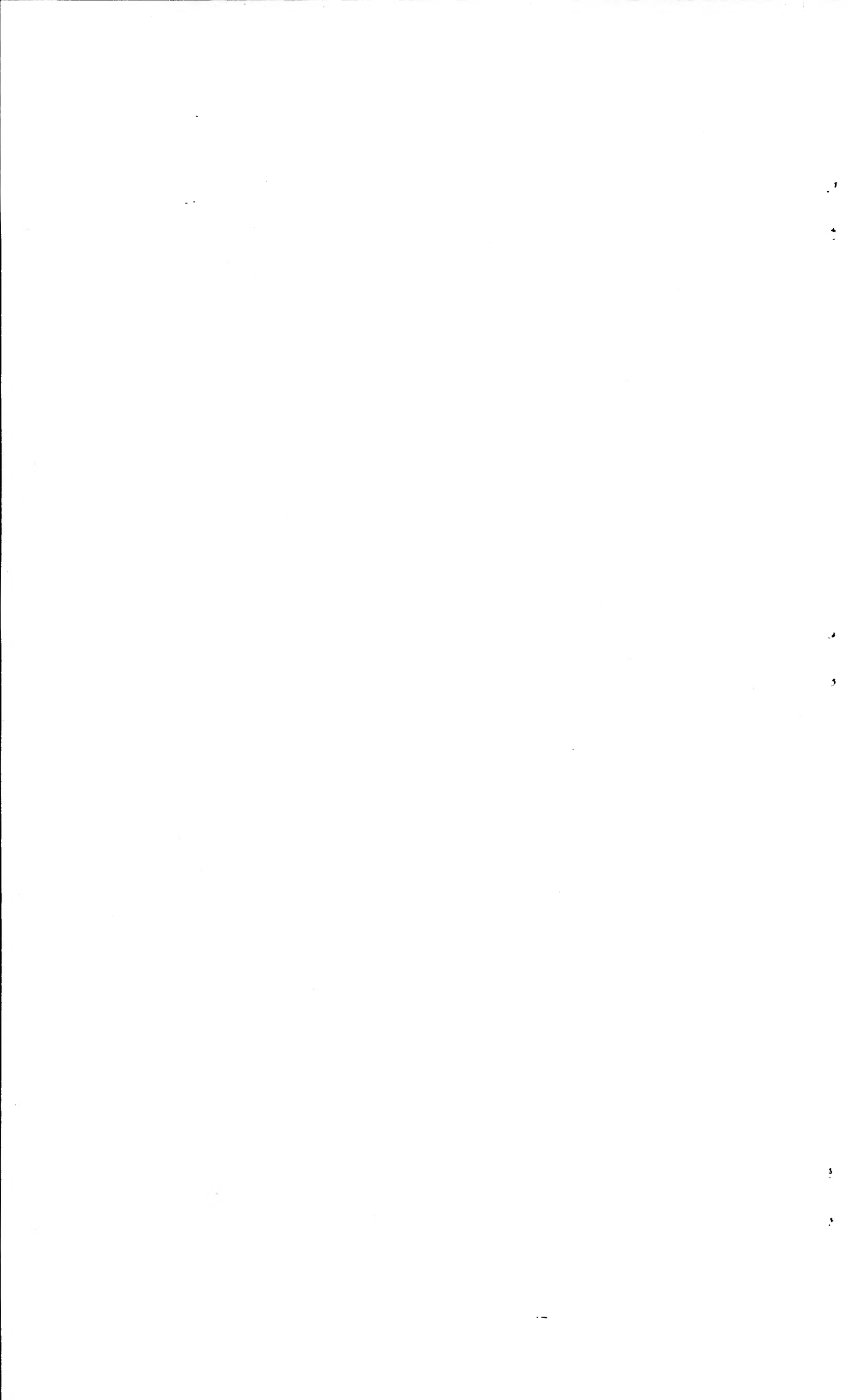Chemical products

Import-Competing
Rubber and plastics
Leather
Textiles
Knitting mills
Electrical products
Miscellaneous manufacturing

Closed:
Clothing
Food and beverages
Tobacco
Furniture and fixtures
Printing and publishing
Metal fabricating
Non-metallic minerals

Energy:
Oil and gas mining
Oil and coal products

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