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Abstract

Swedish firms acquired by foreigners were considerably larger than the average firms in their industries. They were relatively low in value added per employee at the time of takeover and before, a characteristic we take to indicate relatively low profitability, capital intensity, or efficiency, or some combination of these. However, they had been growing at least as fast as their industries over the longest periods we can measure.

The takeovers tended to take place in years when the acquired firms did poorly relative to their industries and also relative to their own past performance with respect to the growth of employment, value of production, and value added. Thus the acquired firms seem to have been weak relative to others in their industries and had particularly suffered during the year in which the takeovers occurred.

There were short-term recoveries after takeover from the misfortunes of the takeover year and a return to higher growth rates of employment and output, particularly the former. Over the longer run the acquired firms did not show the same relative employment gains as in the first year or two after takeover but seem to have increased their profitability or efficiency relative to their industries. The industries in which takeovers took place grew more rapidly after the takeovers than total manufacturing although they had grown less rapidly in the years before takeover.

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SWEDISH FIRMS ACQUIRED BY FOREIGNERS: A COMPARISON OF BEFORE AND AFTER TAKEOVER

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A common way to study the effects of direct investment on host countries is to compare foreign-owned and domestically-owned firms in the same country and assume that differences between them, after allowing for size, industry, or other attributes of firms, are the consequence of the difference in ownership. We have used this technique, since it is often the only one possible and it enables one to observe a wide range of characteristics of firms. For a few countries it is possible to use another approach: to examine host-country firms which are taken over by foreign owners. Takeovers are attractive as a source of information because it is possible to compare the firm before and after the takeover as a way of isolating the effects of foreign ownership.

The first set of questions we wish to ask about firms taken over by foreign companies is what they are like at the time of takeover. Are they relatively large-firms, high- or low-wage firms, fast- or slow-growing firms, financially weak or strong firms, etc.? These questions themselves can be divided into two parts: one is the characteristics of the industries in which takeovers have taken place and the other is the characteristics of the firms relative to their industries. These questions in turn can be further subdivided: which of the characteristics are long-term attributes of the firm or industry and which are associated with the particular time at which the takeover took place.

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The second set of questions is about changes in the firms after takeover. We would like to know whether they grew faster than other firms, or faster than they did before takeover, or whether they changed with respect to their production or value added per worker. Again the answer can be divided between changes in their industries and changes in the firms relative to their industries.

The questions about the characteristics of firms at time of takeover may be thought of as attempts to shed some light on the motivations of the acquiring firms and the acquired firms, although they may also give some information as to the impact of takeovers on the host country. On the whole, host countries have been reluctant to approve of takeovers of the most profitable, fastest growing, or technologically leading domestic enterprises but look more kindly on takeovers of unprofitable or lagging firms.[1]

The questions about changes in host-country firms after takeover are directed at estimating the effects of foreign ownership on the acquired firm, using its pre-takeover characteristics to separate the influence of the foreign parent from those of the characteristics of the local firm itself. That separation can be performed with varying degrees of sophistication, assuming that in the absence of a takeover the firm would change as its industry does, that it would change in the same direction and at the same rate as it did before takeover, or that it would change relative to its industry as it did before takeover. The last seems to be the best assumption but requires data we do not have in all cases.

In an earlier paper (Lipsey and Swedenborg, 1981) we made use of data on Swedish enterprises taken over by foreign firms between 1961 and 1970 from a study by Samuelsson (1977). Those data gave characteristics of firms taken over only for 1965 and 1970 and only if they had already been taken over by those dates. We therefore had no knowledge of a firm's rate of growth or other characteristics before takeover, to compare with later developments. We also had to assume that firms taken over in 1961-65 still had, in 1965, their characteristics at takeover time, and that firms taken over in 1966-70 retained their characteristics until 1970.

Our new data set for Swedish firms has several advantages over the older one. In particular it contains data for each firm at the date of takeover (defined as the end of the year of acquisition) and also before takeover, back to 1966, and after takeover, up to 1977. A drawback of the new data is that they do not contain some of the information on salaries and wages and types of employees we had for the earlier period. They include for each firm in each year only employment, the sales value of output, which we also call the value of production, and value added. They are particularly good, however, for examining changes in a firm before and after takeover.

Characteristics of Acquired Firms

In our earlier paper we concluded that the firms taken over were much larger than average for their industries, being more heavily concentrated in the class of over 200 employees, and including almost no firms with under 20 employees, which were a majority of the enterprises in each industry. However, among the firms with over 200 employees the average takeovers were only half the size of the average Swedish firm. The other characteristics we could examine were the ratios of salaried and technical employees to total employees and the average salary and wage per employee, all of which we took to be rough measures of the skill level or technical orientation of the firm. The acquired firms were above average by all three measures, particularly those taken over in 1966-70, suggesting that foreign buyers were, within each industry, picking the firms of higher skill or technical orientation. As far as we could tell, this selection was not to any large extent simply a reflection of either the size or the industry composition of the firms taken over, but was a characteristic of those firms relative to Swedish firms of the same size and industry. However, the data and the tests were imperfect in several respects pointed out in the original paper.

The acquired firms in the more recent data set were, at the time of takeover, clearly much larger than the average Swedish firms in their industries, by any of the three measures we used, and in all the industries (Table 1), just as we found for the earlier period. To some degree the size difference reflects an apparent cutting off of the sample at some minimum size level, but that is not the whole explanation since we know from the earlier study that there are few takeovers of very small firms. The sales value of output per employee in the acquired firms was, in most industries, slightly above the average for their industries, but the differences were small. The value added per employee in acquired firms was lower than average, and by a substantial margin. We might interpret the

TABLE 1

Characteristics of Swedish Firms Acquired by Foreigners Relative to their Industries[a]

	No. of Firms[b]	Employment	Sales Value of Output	Value Added	Per Employee: Sales Value of Output	Per Employee: Value Added
End of Takeover Year (t)						
All manufacturing	35	4.6	4.6	3.6	1.02	.81
Foods	7	5.6	5.2	2.8	.79	.45
Textiles	3	4.8	5.4	4.4	1.09	.90
Metal products and machinery	19	4.5	4.5	4.0	1.03	.89
U.S. parents	13	5.4	5.0	4.3	1.01	.87
Other parents	22	4.2	4.4	3.2	1.03	.77
End of Year Before Takeover (t-1)						
All manufacturing	34	4.9	5.1	4.1	1.07	.82
Foods	5	5.6	4.8	3.1	.90	.55
Textiles and clothing	3	4.9	6.0	5.0	1.17	.99
Metal products and machinery	19	4.8	5.7	4.9	1.09	.88
U.S. parents	11	5.6	5.7	5.2	1.01	.84
Other parents	23	4.7	4.8	3.5	1.10	.82

[a]Each value for a firm is taken as a percentage of the value in the same year for the corresponding Swedish industry at the 5-digit SNI level. These percentages are then averaged within the industry groups shown.

[b]Number of firms reporting employment. Five of these did not report the other variables for year t and 10 for year t-1.

differences in value added per employee in several ways. One is that the firms taken over were low-productivity firms, in the production function or total factor productivity sense. Another is that these were firms with low labor productivity because their input of capital was low relative to their labor input. A third possibility is that the firms were relatively unprofitable. The firms may have been inefficient, undercapitalized, or unprofitable relative to their industries.

As we can see from the comparisons relating to the year before takeover, these characteristics of the acquired firms did not apply only to the takeover years. As we would expect, the size relationships did not change greatly and the value added per employee was already low in the year before takeover.

Other ways in which we might characterize acquired firms are the rates of growth before takeover for the firms themselves and the rates of growth relative to their industries. To get the longest possible view of growth rates we measure them, for each firm and its industry, as far back as the data permit, usually over five years or less.

Both the acquired firms and their industries were reducing employment and increasing the value of production, value added and the value of production and value added per employee before takeover (Table 2). The acquired firms had been reducing their employment more slowly and growing somewhat faster than their industries. Thus their profitability or labor productivity, as far as we can judge it by value added per employee, had been rising at a slightly more rapid rate than that of their industries despite the fact that, as indicated by the data in Table 1, these were

TABLE 2

Long-Term Rates of Growth (Per Cent) Before Takeover of Acquired Swedish Firms, Their Industries, and All Manufacturing

	Acquired Firms[a]	Industries[b]	All Manu-facturing	Difference: Acquired Firms minus Industry	Difference: Industry of Acquired Firms minus All Manufacturing[b]
Employment	-.53	-1.97	-1.96	1.45	.12
Sales value of output	7.26	6.34	7.90	.92	-1.56
Value added	8.03	5.61	7.76	2.41	-2.15
Sales value of output per employee	8.00	8.43	10.12	-.43	-1.69
Value added per employee	8.56	7.76	10.01	.80	-2.25

Note: The period for each firm and its 5-digit industry is between the first date of its appearance in the data and the year before takeover. The year of takeover is excluded to remove any effects of the takeover that might take place during that year.

[a]Unweighted averages for 20 firms with firm and industry data available for all items.

[b]Weighted by numbers of takeovers.

Source: Firm data from DIRK and industry data from _Industri_, various issues.

firms of below-average value added per employee in their industries at the time of takeover and a year earlier.[2]

While the acquired firms had been growing faster than their industries, the industries in which acquisitions took place were decreasing their employment at about the same rate as total manufacturing and growing in value of production and value added somewhat less rapidly. However, in comparisons with total manufacturing we cannot assume, as we do within industries, that nominal values reflect changes in quantities. The industries in which takeovers were occurring may have been growing more slowly or only raising their prices more slowly than manufacturing as a whole.

The declines we observe in both acquired firm and industry employment before takeover may reflect the way in which we performed these calculations. Each change in employment was measured from the earliest date available, usually in the mid-1960's. That was a period of high employment in Swedish manufacturing as a whole relative to most of the other years in our data.

The effect of the characteristics of the beginning year for our calculations raises a more general question about timing. When we measure the characteristics of an acquired firm at year of takeover, or even the year before, do these represent the permanent attributes of the firm or the events of the particular year or years? The same question could be asked about the industries in which the acquired firms operate. If, for example, we find that acquired firms are relatively unprofitable ones, it would be useful to know whether they had been lagging behind their industries for many years or are firms which had been profitable or fast-growing but had encountered cyclical or other difficulties in a particular year or period that impelled them to seek mergers or made them vulnerable to takeovers. Even if the acquired firms had kept up with their industries, they might be in industries which had suffered in profitability or liquidity. And even if the industries were not in greater difficulties than others in their countries, the takeovers may have tended to occur in periods of financial stringency or low profitability for the country as a whole.

A general picture of the timing of takeovers in Sweden is given by Table 3. There were apparently four waves of takeovers after the late 1940's and 1950's, when there were hardly any. One was in 1960-62, another in 1965-66, another in 1968-69, and the last one in 1974-75. In 1960-62 the takeover wave began in years of high profitability for Swedish industry but hit its peak in the year of reduced profits. The same pattern can be observed for 1965-66 and 1974-75. Only 1968-69 is an exception, the takeover peak coinciding with a profit recovery from a fairly low level. Thus takeovers of Swedish firms seem to be concentrated near peaks in the profit cycle but on the downward side of the cycle, and that is particularly true of the sample used in this paper. The dating would be somewhat different if it were based on employment in acquired firms (Col.5) but the story would be similar.

Another way of looking at the timing of takeovers is to examine it for the individual firms and their industries. If we compare the growth in employment of the acquired firms in our sample in the year before takeover[3] with the average of earlier years we do not find any evidence

TABLE 3

Numbers of Foreign Takeovers of Swedish Firms and
Measures of Profitability in Swedish Industry

	Foreign Takeovers of Swedish Firms Number				1970 Employ-ment	Earnings as % of Capital Equity		Large Manufacturing Enterprises
	Ryden (1)	IUI Sample (2)	DIRK Sample (3)	IUI & DIRK (4)	IUI & DIRK (5)	Net (6)	Before Tax (7)	Operating Profits as % of Sales (8)
1919-45		8		8	3,761			
1946-57	5	3		3	1,063			
1958	1	0		0	-			11.0
1959	4	8		8	5,497			10.0
1960	6	3		3	154			10.4
1961	10	4		4	1,006			11.0
1962	24	4		4	2,731			9.8
1963	3	1	1	2	472			9.5
1964	3	3	0	3	1,647			10.6
1965	13	5	1	5	638			10.8[a]
1966	19	3	3	5	831			9.0
1967	7	2	0	2	35	3.5	7	8.4
1968	18	12	4	13	2,901	5.0	10	9.2
1969	17	7	5	9	3,450	6.0	12	9.8[a]
1970	12	6	3	7	2,121	5.5	11	8.9
1971			3	3	919	4.3	7.7	8.1[a]
1972			2	2	470	4.2	7.7	8.6
1973			3	3	255	6.9	13.3	10.8
1974			5	5	964	7.2	14.9	12.9
1975			11	11	3,858	4.1	8.4	9.2
1976			3	3	183	2.3	4.5	7.3
1977			2	2	1,900	0.2	-0.7	5.0[a]

Sources: Col. 1: Rydén (1972).
Col. 2: Data underlying Samuelsson (1977).
Col. 3: Data from Direktinvesteringskommitten.
Cols. 4 + 5: Combination of Col. 2 and Col. 3, eliminating duplications.
Cols. 6 and 7: Skandinaviska Enskilda Banken <u>Quarterly Review</u>, 3-4/1981, p. 103.
Col. 8: <u>Företagen, 1980</u>.

that the pre-takeover years were particularly periods of unusually declining employment for those firms.

Change in firm employment	
Year before takeover	-.2
All earlier years	-.2

They were also not particularly years of decline for the industries the firms were in, and in fact were better than average years, at least in this respect. The impression left by these figures with respect to the timing

Change in industry employment	
Year before takeover	2.9%
All earlier years	-1.1%

of takeovers is that they took place after relatively good years for the industries involved, compared to their past, but involved companies that did not do as well as their industries in the year before acquisition although they may have been growing slightly faster before that.
If we make a similar comparison for the year of takeover itself (t/t-1), the differences between that year and past years for the firms and between the firms and their industries tell a very different story (Table 4).

The acquired firms had a history of somewhat faster growth than their industries in the years before takeover, as can be seen in Table 4 as well as in Table 2 which excludes the year of takeover (t). However, in the takeover year itself, the relationship was reversed: the acquired firms were having a bad year in every respect. They were reducing employment after increasing it over previous years and their growth rates of the value

Table 4

Comparison between Rates of Growth in Takeover Year and in All Preceding Years: Acquired Firms and Their Industries

	Takeover Year[a]	Average of Preceding Years[b]	Difference[c]
Firms with Employment Data[d]			
Employment			
Acquired Firms	-2.43	1.42	-3.85
Industries	2.90	-.92	1.98
Firms with Data For All Variables[e]			
Employment			
Acquired Firms	-4.25	.01	-4.26
Industries	2.11	-2.04	4.15
Sales Value of Output			
Acquired Firms	7.69	7.57	.12
Industries	14.57	6.42	8.15
Value Added			
Acquired Firms	8.62	8.77	-.15
Industries	21.97	5.48	16.49
Sales Value of Output per Employee			
Acquired Firms	13.05	7.47	5.58
Industries	12.20	8.60	3.60
Value Added per Employee			
Acquired Firms	15.32	8.78	6.54
Industries	19.82	7.87	11.95

[a] t/t-1.

[b] 1967 to year t-1.

[c] Takeover year minus average of preceding years.

[d] 27 firms with employment data for themselves and their industries.

[e] 19 firms with data for all three characteristics for themselves and their industries.

of production and value added were far lower than earlier. During these same takeover years the industries in which these acquired firms operated were increasing employment. Since the value of production and value added are affected by the rates of inflation in different years the best comparison to make is that in the last column, between the takeover year minus earlier year figures for the acquired firms and those for their industries. By almost every measure, the takeovers took place in years of difficulty for the acquired firms relative to their own longer-term relationships with their industries and to their own histories. The contrast may be exaggerated somewhat in the smaller sample of firms, as can be seen by comparison with the larger sample, but the general outline is the same. Furthermore, the particularly large difference for value added suggests that it was profitability rather than output and employment, that was most affected in that takeover year.

A shorter-term view of the characteristics of takeover firms and their industries is presented in Table 5. Unfortunately, because various types of data are missing for some firms or some periods, the numbers of firms vary from one comparison to another. However, the data are comparable within each of the four sets.

Two strong impressions again emerge from the comparisons. One is that the acquired firms were reducing employment before takeover, both in absolute terms and even more relative to their industries. The second is that the value of their production was declining relative to that of their industries. Value added showed a much less clear picture, rising relatively in some intervals but falling very sharply in the year of

TABLE 5

Rates of Growth (Per Cent) in Various Periods Before Takeover of Acquired Swedish Firms and Their Industries

	Acquired Firms	Industry	Difference: Acquired Firms minus Industry
Periods Ending in Year Before Takeover			
Two-year spans (t-1/t-3), 17 firms			
Employment	-.91	.25	-1.16
Employment (22 firms)	(-1.13)	(.54)	(-1.67)
Sales value of output	9.55	11.74	-2.19
Value added	10.26	7.55	2.71
Sales value of output per employee	10.54	11.43	-0.89
Value added per employee	11.20	7.18	4.02
One-year spans (t-1/t-2), 12 firms			
Employment	.61	1.54	-.93
Employment (27 firms)	(1.13)	(1.31)	(-.18)
Sales value of output	12.04	9.27	2.77
Value added	16.70	7.61	9.09
Sales value of output per employee	11.29	7.53	3.76
Value added per employee	15.62	5.82	9.80
Periods Ending in Year of Takeover			
Two-year spans (t/t-2), 16 firms			
Employment	-2.25	.86	-3.11
Employment (27 firms)	(-.80)	(1.17)	(-1.97)
Sales value of output	10.02	10.91	-.89
Value added	12.86	12.52	.34
Sales value of output per employee	12.57	9.86	2.71
Value added per employee	15.79	11.54	4.25
One-year spans (t/t-1), 22 firms			
Employment	-2.94	.83	-3.77
Employment (30 firms)	(-1.65)	(1.88)	(-3.53)
Sales value of output	7.21	13.09	-5.88
Value added	12.26	20.36	-8.10
Sales value of output per employee	11.09	12.13	-1.04
Value added per employee	16.91	19.59	-2.68

Source: Firm data from DIRK and industry data from Industri, various issues.

takeover. The extent of these differences among intervals suggests that profitability was probably the source of the changes, since the wage part of value added per worker must have moved similarly between the acquired firms and their industries.

If we take the two intervals with the best coverage, t-1/t-3 and t/t-1, to represent the characteristics of the acquired firms, we would conclude that in the two years before the year of takeover they were, relative to their industries, cutting employment and output but increasing value added, probably in the form of higher profits. The year of takeover was a year of declining employment, particularly relative to their industries, and of relatively declining value of production, value added, and even value of production and value added per employee, despite the cuts in employment. The combination suggests that the year of takeover itself was probably an unprofitable year for the acquired companies, not only relative to their own past performance but relative to their industries as well. The record of the preceding two years suggests that the acquired firms had been losing ground to others then also, but perhaps increasing profits by contracting output and employment. The overall impression is that the firms acquired had not been a particularly successful group in the period close to takeover.

A point that should be mentioned in connection with these measures based on events of the year of takeover is that they imply that the new owners of the firms had not yet, by the end of the year, made changes in the acquired firms; the state of a firm at the end of the takeover year is assumed to represent its pre-takeover situation. If new owners act very quickly to reduce employment, for example, we may be mistaking post-acquisition changes for pre-acquisition characteristics of the acquired firm. However, such quick reductions in employment at the initiative of new management seem unlikely since firings at short notice are difficult in Sweden.

While we lack the data to establish firmly our conclusion that takeovers tend to occur in years of distress for the acquired firms, it is of interest that it matches the findings of an earlier study (Rydén, 1972) of Swedish mergers in general, in which takeovers by foreign firms were not distinguished from domestic takeovers in most calculations. That study found that acquired firms were, on the average, less profitable and less liquid than firms in general and also had deteriorated in both respects before acquisition (pp. 209-224). A study of U.S. manufacturing firms acquired by foreigners (Little, 1981) found that they were "... apt to be less profitable than the average firm in their industry and less reliably able to service their existing debt." An analysis of takeovers in the U.K. (Singh, 1975) not distinguishing foreign from domestic, also found that although there was a large degree of overlap between the characteristics of acquired firms and survivors, "...take-over companies have on average worse records than surviving ones..." The variables that appeared to distinguish the two groups of firms were average profitability over one year and three years and the one-year change in profitability.

Our characterization of Swedish firms acquired by foreigners thus seems to fit the attributes that have been ascribed by other studies in several countries to acquired firms in general.

Changes after Takeover

What happened to these acquired firms after takeover is described in Table 6. With respect to employment, which is the only measure we have in real terms, and with respect to the value of production and the value of production per employee, the acquired firms are hardly distinguishable from their industries. Their value added and value added per employee rose somewhat more rapidly than those of their industries. Thus there was apparently some restoration of profitability after the decline during the takeover year. The improvement in profits may have been associated with a rise in productivity relative to their industries, to the extent that we can interpret the value added per worker that way.

Another way of viewing the post-takeover development of acquired firms is by comparing it with the growth of the same firms before takeover or with the growth of these relative to their industries. Unfortunately, the size of the sample falls sharply if we confine it to those firms with both pre-takeover and post-takeover information for all three characteristics.

One way of comparing before and after performance is used for Table 7 which is based on the longest possible spans of data both before and after takeover, excluding the year of takeover itself. For the firms themselves, the before and after periods hardly differ with respect to employment growth. The variables that are in monetary terms grew much faster after takeover but it is difficult to interpret these comparisons by themselves. The comparisons for the firms' industries suggest an improvement between the before and after periods, not only for the monetary variables, which are affected to some degree by inflation, but also for employment. In the

TABLE 6

Rates of Growth After Takeover of Acquired Swedish Firms, Their Industries, and All Manufacturing

				Difference	
	Acquired Firms[a]	Industry[b]	All Manufacturing	Acquired Firms minus Industry[b]	Industry of Acquired Firms Minus all Manufacturing[b]
Employment	.22	.42	-1.66	-.21	1.45
Sales value of output	10.97	11.35	7.51	-.38	3.84
Value added	12.73	10.93	5.63	1.80	5.30
Sales value of output per employee	10.81	10.78	8.58	.03	2.20
Value added per employee	12.45	10.45	6.82	2.00	3.63

Note: The period for each firm and its 5-digit industry is from the year of takeover to 1977. Single-year changes were not included and firms were excluded if they lacked information for any one of the three characteristics.

[a]Unweighted averages for 29 firms.

[b]Weighted by numbers of takeovers.

Source: Firm data from DIRK and industry data from Industri, various issues.

TABLE 7

Before-Takeover and After Take-over Rates of Growth:
Acquired Swedish Firms, Their Industries, and All Manufacturing

	Acquired Firms[a]			Industry[b]			All Manufacturing[b]		
	Before (1)	After (2)	After minus Before (3)	Before (4)	After (5)	After minus Before (6)	Before (7)	After (8)	After minus Before (9)
Employment	-.93	-.52	.41	-2.76	.52	3.28	-2.50	-.69	1.81
Sales value of output	7.11	11.49	4.38	5.14	13.00	7.86	7.30	10.22	2.92
Value added	7.69	12.95	5.26	4.16	12.08	7.92	7.14	9.66	2.52
Sales value of output per employee	8.20	12.21	4.01	8.08	12.22	4.14	10.00	10.89	.89
Value added per employee	8.63	13.59	4.96	7.15	11.36	4.21	9.86	10.38	.52

Note: The periods for each firm and its five-digit industry are from the first year of data available to year t-1 and from year t to 1977. Single-year changes were excluded and firms were excluded if they lacked information for any one of the three characteristics.

[a]Unweighted averages for 16 firms.

[b]Weighted by number of takeovers.

Source: Firm data from DIRK and industry data from *Industri*, various issues.

after-takeover periods the acquired firms seemed to be growing a little more slowly than their industries, except for value added. Thus the acquired firms went from a long-term superiority over their industries in growth rates to a sharp relative decline in the years of takeover, to growth at about average rates or a little below after takeover.

The industries in which takeovers occurred also changed somewhat relative to total manufacturing. From slower-than-average growth rates in money terms before takeovers occurred they moved to faster than average rates after. The differences for value added and value of production could reflect only faster rates of inflation in these industries than in manufacturing in general, rather than faster real growth. However, the small positive growth in employment while aggregate manufacturing employment declined suggests some small margin of higher real growth in these industries.

Another way of looking at the comparisons of before and after is to look at the swings in growth rates shown in columns 3, 6, and 9. The industries in which takeovers occurred increased their growth rates more than did the acquired firms themselves and both the firms and their industries increased the value of production and value added more rapidly than manufacturing in general. We might interpret that as showing that the takeovers failed to restore the acquired firms to their earlier superiority in growth, after their poor performance in the takeover years, although they did restore some of their earlier margin in profit and perhaps in productivity growth. Another possibility is that the takeovers themselves spurred the industries to grow more rapidly in the years after takeovers occurred.

Shorter-term versions of the before-after comparisons are presented in Table 8, beginning with a relatively long-term one using spans of two years omitting the year of takeover and proceeding to one using two-year spans including the takeover year and finally a short-term comparison of the takeover year with the following year. Again, we are plagued by small samples and erratic changes in results as the samples change, but some patterns do emerge.

The employment figures are the most reliable both because they are not affected by inflation and because the samples are larger. The comparisons between the year after takeover and the takeover year show the most striking results. The acquired firms shifted from declining employment and value of production relative to their industries during the takeover year to relative gains in employment and equal changes in value of production in the year after takeover. The combination of the two shows a relative decline in value of production and value added per employee after takeover, which suggest relatively falling efficiency. The longer time spans show increases, but smaller ones, in employment for the firms and the firms relative to their industries, but they show relative declines in value of production and value added. However, these measures are derived from the smallest samples and should not be given much credence. We can say at least that we find no evidence for short-term gains in profitability over earlier performance after takeover if we exclude the year of takeover from the base of the comparison. We find no evidence that the takeovers resulted in increased efficiency within the first year or two, as far as we

Table 8

Comparison of Rates of Growth (Per Cent) Before and After Takeover: Acquired Swedish Firms and their Industries

	Acquired Firms			Industries			Acquired Firms minus Industries		
	Before (1)	After (2)	After minus Before (3)	Before (4)	After (5)	After minus Before (6)	Before (7)	After (8)	After minus Before (9)
Two-year spans (t-1/t-3 and t+2/t), 12 firms									
Employment (18 firms)	-1.40	1.67	3.07	.49	1.75	1.26	-1.89	-.08	1.81
Production[a]	8.53	9.47	.94	9.87	11.58	1.71	-1.34	-2.11	-.77
Value added (VA)	6.43	12.40	5.97	4.42	12.96	8.54	2.01	-.56	-2.57
Prod. per empl.[b]	10.55	8.78	-1.77	9.94	9.94	0	.61	-1.16	-1.77
VA per empl.	8.35	11.69	3.34	4.39	11.25	6.86	3.95	.44	-3.51
Two-year spans (t/t-2 and t+2/t), 12 firms									
Employment (22 firms)	-1.37	1.53	2.90	1.13	.70	-.43	-2.50	.83	3.33
Production[a]	9.69	5.54	-4.15	10.59	10.52	-.07	-.90	-4.98	-4.08
Value added (VA)	13.59	9.14	-4.45	12.70	10.13	-2.57	.89	-.99	-1.88
Prod. per empl.[b]	13.05	3.05	-10.00	10.49	9.43	-1.06	2.56	-6.38	-8.94
VA per empl.	17.39	6.70	-10.69	12.71	8.95	-3.76	4.68	-2.25	-6.93
One year spans (t/t-1 and t+1/t), 16 firms									
Employment (26 firms)	-1.32	7.00	8.32	1.92	2.23	.31	-3.24	4.77	8.01
Production[a]	9.37	11.49	2.12	13.80	11.89	-1.91	-4.43	-.40	4.03
Value added (VA)	17.32	12.91	-4.41	17.41	9.79	-7.62	-.09	3.12	3.21
Prod. per empl.[b]	12.04	6.17	-5.87	12.10	10.88	-1.22	-.06	-4.71	-4.65
VA per empl.	20.13	8.41	-11.72	15.78	8.97	-6.81	4.35	-0.56	-4.91

[a]Sales value of output

[b]Sales value of output per employee

Source: Firm data from DIRK; industry data from Industri, various issues.

can tell from these crude measures and small samples.

We have interpreted changes in behavior or fortune for a company between pre- and post-takeover periods as indications of the effects of takeovers. Another possibility that might be mentioned is that takeovers occur in periods of distress for a firm but that the ensuing recovery would have taken place with or without takeover. Only a very close examination of individual companies or a comparison with individual companies not taken over could answer this question definitively, if there is any way of doing that. However, one indication that might be taken to mean that the fluctuations might be only random deviations from a trend and independent of the occurrence of a takeover would be if large pre-takeover declines were associated with large post-takeover recoveries. We have tested this hypothesis by correlating post-takeover with pre-takeover ratios of growth, as shown in Table 9.

Employment changes after takeover do not seem to be explainable as a reaction to events of the takeover year. Either there was no significant relationship or there was a positive one; the firms that were increasing or decreasing employment more in the periods prior to the takeover year continued to do so. However, even this relationship is noticeable in only one of the four employment regressions. Some of the other variables did give evidence of snapping back after the takeover year in one or two sets of regressions, particularly those for value added and value added per employee, which we associate with profitability and possibly with efficiency changes. A large part of the two-year post-takeover changes in value added and value added per employee after takeover could be explained

TABLE 9

Relation between Pre-Takeover, and Post-Takeover Rates of Growth of Acquired Firms

	Coefficient for Pre-Takeover Growth		
	Value	t-statistic	$\bar{R}^2$
Two-year spans (t+2/t as function of t/t-2), 12 firms			
Employment (22 firms)	-.25	1.23	.02
Relative to industry	-.16	0.80	-.02
Sales value of output	-.71	2.27	.27
Relative to industry	.25	0.47	-.08
Value added	-.86	5.21	.70
Relative to industry	-.57	1.67	.14
Sales value of output per employee	-1.00	3.89	.56
Relative to industry	-.76	2.52	.33
Value added per employee	-.82	5.11	.70
Relative to industry	-.67	4.03	.58
One-year spans (t+1/t as function of t/t-1), 16 firms			
Employment (26 firms)	-.24	0.62	-.03
Relative to industry	-.25	0.88	-.01
Sales value of output	.11	0.21	-.06
Relative to industry	.26	0.87	-.02
Value added	.09	0.50	-.05
Relative to industry	.04	0.26	-.07
Sales value of output per employee	-.27	0.98	-.002
Relative to industry	-.22	0.85	-.02
Value added per employee	-.22	1.16	.02
Relative to industry	-.25	1.50	.08
Two-year spans (t+2/t as function of t-1/t-3), 12 firms			
Employment (18 firms)	-.27	1.04	.004
Relative to industry	-.23	0.72	-.03
Sales value of output	-.29	0.94	-.01
Relative to industry	-.11	0.17	-.10
Value added	.04	0.12	-.10
Relative to industry	.24	0.72	-.05
Sales value of output per employee	-.23	0.47	-.08
Relative to industry	.30	0.41	-.08
Value added per employee	.30	0.63	-.06
Relative to industry	.56	1.31	-.06

(continued)

TABLE 9 (concluded)

	Coefficient for Pre-Takeover Growth		
	Value	t-statistic	$\bar{R}^2$
One-year spans (t+1/t as function of t-1/t-2), 23 firms			
Employment	1.46	3.42	.33
Relative to industry	1.32	4.33	.45

Source: Data underlying Table 8.

by pre-takeover changes, mainly increases explained by declines before takeover, and the same was true for some of the larger one-year changes even though the overall correlation was not high. While this relationship does not preclude an effect of takeover on profitability it does suggest another possibility. The acquiring firm may have been able to take advantage of an unprofitable year to buy the Swedish firm cheaply and then enjoy the benefit of a recovery that would have taken place, at least to some extent, even without the acquisition.

Conclusions

Swedish firms acquired by foreigners were large relative to the average firms in their industries but of relatively low profitability, capital intensity, or efficiency. We cannot distinguish among these possibilities but one of them or some combination of them seems the most likely interpretation of the low value added per employee at the time of takeover and before. The acquired firms had been growing at least as fast as their industries over the longest periods we can measure, but the industries tended to be growing no more rapidly or possibly less rapidly than manufacturing as a whole.

The takeovers tended to take place in years when the acquired firms did poorly relative to their industries and also relative to their own past performance. We find that to have been true with respect to the growth of employment, value of production, and value added. Thus the takeovers seem to have involved Swedish firms that had been in some sense weak relative to others in their industries and had particularly suffered during the year in which the takeovers occurred. This impression of the acquired firms as laggards in their industries, especially with respect to profits, fits with the findings of studies of Swedish mergers and of takeovers in other countries.

The consequences of takeovers are more ambiguous. There is strong indication of short-term recovery after takeover from the misfortunes of the takeover year and a return to higher growth rates of employment and output, particularly the former. To the extent that value added per employee measures productivity or efficiency, however, there is no evidence that the takeovers raised the rates of growth in these. In fact the acquired firms ended up lower relative to their industries than before.[4] Over the longer run the acquired firms did not show the same relative employment gains as in the first year or two after takeover but seem to have increased their profitability or efficiency relative to their industries. The industries in which takeovers took place grew more rapidly after the takeovers than total manufacturing although they had grown less rapidly in the years before takeover. It remains uncertain whether the takeovers themselves influenced these rates of industry growth.

Data

Swedish Industries

Information on Swedish industries, at the 5-digit SNI level, is from various issues of Industri published by the Statistiska Centralbyrån.

Takeovers

Data on Swedish establishments taken over by U.S. and other foreign companies are from Swedish census reports tagged by country of ownership and supplied by the Statistiska Centralbyrån to the Swedish Committee on Direct Investment. The reports included some, but not all, of the standard information collected in the industry censuses for the years 1966 through 1977 as well as the date on which each establishment was taken over and the nationality of the purchasing firm. However, the names of the Swedish establishments and of the parents were not included and there was, therefore, no way to identify U.S. parents.

Quite a few data items were missing from the information provided, including all sales value of output and value added for 1973. Since many takeovers took place in 1974 and 1975, the omission of these data greatly reduced the number of observations we could use in calculations involving the year before takeover and the year before that.

A few of the remaining observations were removed for other reasons. One was that they involved rates of growth for newly established firms, sometimes extremely large. Another was that the firms merged with others or sold off parts of their operations. A third was that the data suggested changes too large to be believable.

Footnotes

[1]For example, Brash (1970, p. 309) quotes a speech by Australian Prime Minister Gorton in which he stated "...he would have no objection to a foreign company acquiring 50 'or even 60%' of the equity of an inefficient Australian company if the latter would benefit from an infusion of capital, know-how, or management skill. He emphasized that he was only objecting to a 'raid' on an efficient Australian company which already had good management and 'good technical application' by foreign interests 'who could afford to buy it out at high prices.'"

[2]There was some consolidation among Swedish establishments in general so that the growth in sales and value added per firm was higher than that for the industry, although still below that of the acquired firms. There was no change in average employment per firm.

[3]That is, t-1/t-2 where t is the year in which the takeover took place.

[4]A comparison of foreign-owned food manufacturing firms (most acquired by takeover) with all Swedish food manufacturing firms showed the foreign-owned ones expanding their employment much more rapidly in 1960-65 and 1965-70 and then reducing it more rapidly in 1970-75 (Statens Industriverk, 1977). The authors found that there was no substantial change in the rate of employment growth, relative to the industry, between pre-takeover and post-takeover periods. For this industry they found that productivity grew more rapidly relative to the industry after takeover than before.

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