

# Did Tough Antitrust Enforcement Cause the Diversification of American Corporations?

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## Abstract

This paper investigates the hypothesis that tough antitrust enforcement in the 1960s led firms to engage in diversification programs by preventing them from growing within their own industries. If true, diversification should have occurred more often when large firms merged than when small firms merged because small mergers were less likely to have received antitrust attention. Such a pattern is not observed in a sample of 549 acquisitions from 1968—diversification was equally common in large and small mergers. Survey evidence shows that diversification movements occurred in other industrialized nations where there was a loose antitrust environment. Both pieces of evidence suggest that antitrust played a minor role in the diversification movement.

## I. Introduction

A central question in financial economics remains unresolved: What caused the rise and decline of corporate diversification during the last four decades? Even though a number of plausible explanations have been advanced, there is little more than anecdotal support for or against any of them.

One of the most venerable and enduring of these explanations is the “antitrust hypothesis.” According to this explanation, firms diversified in the 1960s because antitrust authorities prevented them from expanding in their home industries. When antitrust policy became less stringent in the 1980s, firms were able to expand horizontally, leading them to de-diversify and refocus on their core business. Stigler (1966) was perhaps the first to present evidence on the antitrust hypothesis, concluding that, “[t]he 1950 Merger Act has had a strongly adverse effect on horizontal mergers by large companies.” More recently, Shleifer and Vishny ((1991), p. 50) speculated that

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The most likely reason for diversification [in the 1960s] was the antitrust policy that, after the Celler-Kefauver Act passed in 1950, turned fiercely against mergers between firms in the same industry. Unable to acquire businesses related to their own, flush with cash, and facing a favorable market for equity issues, acquirers bought companies outside their industries.

The view that antitrust contributed substantially to corporate diversification also enjoys abundant anecdotal support.<sup>1</sup> But it has its share of skeptics, including Scherer (1980) and Comment and Jarrell (1995), who note that diversification appears to be common in countries with significantly different antitrust policies than the United States.

The purpose of this paper is to make an empirical assessment of the antitrust hypothesis. Antitrust enforcement in the 1960s focused on how a merger would affect market concentration. Consequently, large horizontal mergers were more likely to have been challenged than small horizontal mergers. Diversifying mergers, in contrast, were unlikely to have been challenged regardless of size. If the antitrust hypothesis is correct, then, acquisition-minded firms avoided large horizontal acquisitions, and either i) substituted into small horizontal acquisitions and mergers with firms of any size in unrelated industries, or ii) dropped out of the merger market altogether. In either case, there should have been a relatively high fraction of diversification acquisitions among large mergers and a relatively low fraction among small mergers during the conglomerate merger wave of the 1960s and 1970s. This implication does not find support in a sample of 549 mergers by NYSE firms during 1968: diversification was no more common among large mergers than small mergers. The finding is robust to a number of different measures of diversification, and also holds for samples of mergers during 1971 and 1974.

In addition to the statistical evidence, I examine diversification patterns in the United Kingdom, Canada, Germany, and France in the late 1960s and early 1970s. Although none of these countries had legal restrictions on horizontal growth comparable to those in the United States, they also experienced diversification waves. This corroborates the negative view of the antitrust hypothesis that emerges from the American data. It seems too much to conclude that antitrust played no role whatsoever—surely it was a factor in some decisions—but the evidence suggests that the primary cause of corporate diversification lies elsewhere.

## II. U.S. Evidence

### A. Data

The data are a sample of 549 mergers that took place in 1968, in which the primary line of business of both bidder and target was manufacturing or mining. In value terms, 1968 was the peak year of the conglomerate merger wave (Blair, Lane, and Schary (1991)). The mergers were identified from listing statements of the

<sup>1</sup>For example, Sobel ((1984), p. 38) cites Textron founder Royal Little as explaining that one of the corporation's diversification objectives was to "[e]liminate any Justice Department monopoly problems by avoiding acquisitions in related businesses." Also see Baker's (1992) history of Beatrice.

New York Stock Exchange; whenever an exchange-listed company wanted to issue stock in relation to a merger, it had to file a listing statement that included balance sheet and income statements for both companies. An initial list was compiled by David Ravenscraft and F. M. Scherer for their book, *Mergers, Sell-offs and Economic Efficiency*. They collected all mergers in listing statements 25250 to 26344; I added observations that appeared in listing statements 26451 to 27070. With the exception of listing statements 26344 to 26451, which were not available to me, this comprises the universe of relevant acquisitions in the listing statements for 1968.<sup>2</sup>

The resulting sample has two desirable properties. First, it is among the most comprehensive data sets for this time period (see Matsusaka (1993a)). Second, it includes small acquisitions that do not appear in other data sets; 80 percent of the sample's target companies had assets worth less than \$10 million, the minimum size for inclusion in the Federal Trade Commission Large Merger Series, and roughly the minimum for the Brookings series (Blair, Lane, and Schary (1991)). The sample also has some limitations. First, it excludes acquisitions made by non-NYSE firms. Second, it is likely that a disproportionate number of sample mergers involved stock as a means of exchange.

If antitrust had an effect, it should show up in the 1968 data. Nevertheless, there could be factors unique to 1968 that obscure detection. As a robustness check, I also employ a more limited data set that includes 106 mergers from 1971 and another with 121 mergers from 1974. These samples were drawn from a subset of each year's listing statements, as indicated in Ravenscraft and Scherer (1987).

For each observation, I collected supplementary information on diversification and size of the buying firm. Diversification was defined in terms of SIC codes. It was possible to collect nearly complete lists of each buyer's and its subsidiaries' four-digit SIC codes from the same-year volume of Poor's Register of Corporations, Directors, and Executives. For target companies, two-digit SIC codes were collected from the listing statements. For 63 percent of the targets (34 percent for 1971 and 1974), four-digit information was available either from Poor's or by comparing product descriptions in the listing statements with the Standard Industrial Classification Manual, 1972. I could not collect four-digit information for the remaining target companies because the Ravenscraft and Scherer data set did not include the necessary information and I did not have access to the original listing statements they used.

Information on vertical mergers was constructed in the following way. First, the flow of goods in the economy was identified with the Census Bureau's input-output matrices of the United States for 1972. These tables report what fraction of each industry's input was purchased from each industry and what fraction of output was sold to each industry. Industries are classified at roughly the three-digit level (the classification system features 52 manufacturing industries). Two industries were said to be vertically related if they bought 5 percent of their input or sold 5 percent of their output to each other.<sup>3</sup> This roughly parallels the definitions used

<sup>2</sup>See Matsusaka (1993b) and Ravenscraft and Scherer (1987) for additional information on construction of the data set.

<sup>3</sup>Specifically, the "5 percent of input" was taken from the commodity-by-industry direct requirements table (Table 3), and the "5 percent of output" was taken from the use table (Table 1) in Ritz (1979).

by McGuckin, Nguyen, and Andrews (1991) and Blair, Lane, and Schary (1991). A merger was classified as vertically related if the buyer and target operated in any SIC industries that were vertically related according to this definition. If the only vertical relation was between a manufacturing SIC and a wholesale trade or retail trade SIC, it was not coded as vertically related (this rule made a difference for less than 10 observations). The wholesale and retail trade industries are classified so broadly that almost every manufacturing firm would have been classified as vertically related to any wholesale or retail firm.

Data on the size of acquiring firms were collected from Moody's Industrial Manual for the year before the merger. The book value of the target's assets was drawn from the listing statements.

## B. Antitrust Enforcement in 1968

The key piece of antitrust legislation in the postwar period was the 1950 Celler-Kefauver amendment to Section 7 of the Clayton Antitrust Act. The act, as amended, prohibited mergers that would substantially "lessen competition, or tend to create a monopoly." Prior to the amendment, Section 7 applied only to mergers that involved the transfer of stock, meaning that acquisitions of assets could not be challenged. The courts and the antitrust authorities used the new law to limit the number of mergers between firms in the same lines of business and vertically related firms. The stringency of the antitrust environment in 1968 is illustrated by the observation that in the preceding 12 years, every antitrust case that reached the Supreme Court had been resolved in favor of the government.

The implication tested below stands on two premises. The first is that large horizontal mergers were more likely to have been challenged on antitrust grounds than small horizontal mergers. This is plausible because the Celler-Kefauver amendment was addressed to large mergers. Moreover, beginning with the Brown Shoe case in 1962, the first case decided under the Celler-Kefauver amendment, the Supreme Court relied heavily on market share to establish anticompetitive effects of horizontal mergers (Blair and Kaserman (1985)). In the Philadelphia National Bank case of the following year, the Court went even further, declaring that there was a "presumption of illegality" based on market shares and concentration alone. In addition, the Department of Justice merger guidelines at the time made explicit reference to market shares, indicating, for example, an intention to challenge all mergers in which the buyer and seller each had 4 percent market shares.<sup>4</sup>

The second premise is that mergers between unrelated firms were unlikely to have been blocked, regardless of size. Antitrust officials in the Johnson Admin-

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The 1968 SIC codes were converted to 1972 SIC codes using the Standard Industrial Classification Manual, 1972.

<sup>4</sup>"In enforcing Section 7 against horizontal mergers, the Department accords primary significance to the size of the market share held by both the acquiring and acquired firms . . . The larger the market share held by the acquired firm, the more likely it is that the firm has been a substantial competitive influence in the market or that concentration in the market will be significantly increased. The larger the market share held by the acquiring firm, the more likely it is that an acquisition will move it toward, or further entrench it in, a position of dominance or of shared market power. Accordingly, the standards most often applied by the Department in determining whether to challenge horizontal mergers can be stated in terms of the sizes of the merging firms' market shares." (Department of Justice Merger Guidelines of 1968 as reported in Posner (1974), p. 419.)

istration were uncomfortable with conglomerate acquisitions, but believed there was nothing in the antitrust statutes that made them illegal. The Neal Commission in 1968 released a report concluding that conglomerates were not in violation of the law, but that statutes should be passed to prevent conglomerates from acquiring "leading firms" (defined to be firms with 10 percent of their market). The only notable resistance to a conglomerate acquisition prior to 1969 concerned ITT's proposed takeover of ABC, which was twice approved by the Federal Communications Commission but then dropped in January 1969 after the Attorney General indicated an intention to contest it (Sobel (1984)).

### C. Results

Table 1 summarizes the size distribution of target firms, acquiring firms, and target firms combined with acquirers. Here and throughout, size is measured as the book value of assets. The smallest target firm had assets of \$29,000 while the largest had assets of \$1.8 billion. Acquiring firms ranged in size from \$6.9 million to \$2.96 billion.

TABLE 1  
Distribution of Merging Companies in 1968 by Book Value of Assets

Assets in Millions of Dollars	Targets	Acquirers	Combined
Less than 1	166	—	—
1 to 5	214	—	—
5 to 10	60	1	—
10 to 25	40	25	21
25 to 50	35	85	81
50 to 100	17	124	119
100 to 250	10	148	154
250 to 500	4	100	102
500 to 1,000	1	35	40
Greater than 1,000	2	31	32

The entries indicate the number of mergers that fell in each cell. A horizontal line (—) indicates zero in that size category. In the "Combined" column, the assets of the target and acquirer are added together.

Table 2 presents nonparametric tests of the antitrust implication. Panel A partitions mergers into three classes based on the size of the target firm; Panel B groups them according to the size of the acquirer. For each size class, the table reports the proportion of mergers in which the buyer and seller were in unrelated industries.

Because the antitrust theory does not identify precise size cutoff points, the choices are somewhat arbitrary. In selecting the size classes, I attempted to isolate the extremes and ensure roughly equal numbers in each group. For Panel A, it seemed safe to assume that bidders generally were unconcerned about antitrust when they acquired firms with less than \$1 million in assets. The \$10 million cutoff size for large firms is natural because companies were required to notify the Federal Trade Commission when they bought a firm with assets worth more than \$10 million. For Panel B, the value of \$250 million for the large size class was chosen because it corresponds to the asset value above which mergers had to be reported to the Federal Trade Commission. The small cutoff value was chosen to

TABLE 2  
Percentage of Mergers Classified as Diversification, by Assets of Target and Acquiring Firm

<i>Panel A. Grouped According to the Target Firm's Assets</i>				
Definition of Diversification	Small ( $< \$1$ M)	Medium (\$1 M to \$10 M)	Large ( $> \$10$ M)	Z-Statistic
No 2-digit SIC code in common	38.79 (165)	41.03 (273)	27.03 (111)	-2.022
No 2-digit SIC in common and no vertical relation	14.55 (165)	17.95 (273)	9.01 (111)	-1.372
No 3-digit SIC in common and no vertical relation	44.44 (63)	39.25 (186)	22.22 (99)	-2.985
No 3-digit in common among top 3 industries	74.60 (63)	75.27 (186)	63.64 (99)	-1.458
No 3-digit in common among top 3 and no vertical relation	55.55 (63)	54.84 (186)	44.44 (99)	-1.379
No 4-digit in common among top 3 industries	84.13 (63)	88.17 (186)	81.82 (99)	-0.379
<i>Panel B. Grouped According to the Acquiring Firm's Assets</i>				
Definition of Diversification	Small ( $< \$50$ M)	Medium (\$50 M to \$250 M)	Large ( $> \$250$ M)	Z-Statistic
No 2-digit SIC code in common	37.84 (111)	38.24 (272)	36.14 (166)	-0.286
No 2-digit SIC in common and no vertical relation	17.12 (111)	16.18 (272)	12.05 (166)	-1.189
No 3-digit SIC in common and no vertical relation	39.06 (64)	39.29 (168)	27.59 (116)	-1.584
No 3-digit in common among top 3 industries	68.75 (64)	72.62 (168)	72.41 (116)	0.519
No 3-digit in common among top 3 and no vertical relation	50.00 (64)	53.57 (168)	50.86 (116)	-0.111
No 4-digit in common among top 3 industries	76.56 (64)	86.90 (168)	88.79 (116)	2.167

The entries indicate the percentage of companies in each size group that were acquired in diversification mergers. The number of observations in each cell is in parentheses beneath the diversification percentage. The Z-statistic is for the hypothesis that the diversification fraction is greater for large mergers than small mergers.

keep the number of observations per cell approximately the same as in Panel A. I examined the data using a variety of other cutoff points; the results were essentially the same.<sup>5</sup>

A thornier issue was deciding what constituted a "diversification" merger. Rather than take a stand on the definition of diversification, the results are reported for six different measures. In the first row of each panel, a merger is defined as "diversification" if the buyer and the seller did not have *any* two-digit SIC code in common. We can be fairly confident that a diversification merger in this sense involved firms in different industries. The diversification measure in the second row of both panels is the same as in the first row except that vertical mergers are not counted as diversification. This addresses a limitation of the first measure, that

<sup>5</sup>The working assumption is that small mergers are less likely to have invited antitrust scrutiny than large mergers. A complementary approach would be to measure size by market share. Two difficulties with this approach are i) it is unclear whether to choose two-digit, three-digit, four-digit, etc., industries, and ii) sales data by industry are unavailable for multiindustry firms.

it only considers horizontal relations; antitrust policy was concerned with vertical relations as well.

The two-digit definitions in the first two rows probably undercount the number of diversification mergers. For example, mergers between automobile, train, airplane, and boat manufacturers would not be counted as diversification because firms in these industries shared the same two-digit code, SIC 37. The third row of both panels uses a less stringent definition: a merger is defined as diversification if the buyer and seller were not vertically related and did not share a three-digit SIC code.<sup>6</sup> I was unable to obtain three-digit SIC codes for 201 (primarily small) acquisitions so the sample size falls to 348.

The diversification measure in the first three rows could overstate the number of related mergers among large firms. Because large companies tended to operate in more industries than small companies, mathematically, there are more opportunities for large companies to have an SIC code in common. To reduce the possibility of such bias, in the fourth row of both panels, a merger is defined to be diversification if the buyer and seller did not share a three-digit SIC code, looking only at their *top three* four-digit SICs. The fifth row uses the same measure but does not count vertical mergers as unrelated. When commonalities in other than the buyer's and seller's top three businesses are ignored, 17 percent of the related mergers are reclassified as unrelated. A firm's "top three" businesses were the first three listed in the data sources.

The final row of each panel uses the most generous definition of diversification. A merger is classified as diversification unless the target and seller had a four-digit SIC code in common, looking only at their top three industries. This measure probably overstates the number of diversification acquisitions; it identifies 86 percent of sample mergers as unrelated. For each measure, the table reports the Z-statistic for the hypothesis that the diversification fraction was lower for small mergers than large mergers.

Table 2 can be summarized as follows. In Panel A, for all six measures, diversification was more prevalent in acquisitions involving small target companies than acquisitions involving large target companies, contrary to the antitrust hypothesis. For two measures, this pattern is statistically significant at better than the 5-percent level. For the four measures that fail to achieve statistical significance at conventional levels, the reason appears to be that the difference between means is small, not that the estimates are imprecise. For example, the estimated difference between the two proportions in the second row is  $14.55 - 9.01 = 5.54$ . The standard error of this estimate is 4.03. A lower bound on the "true" difference can be calculated by subtracting twice the standard error from the mean difference. This gives a "best case" difference between diversification in large and small mergers of only  $-2.52$  percent.

It can also be seen that the level of diversification activity involving small companies was much greater than zero for all measures. For example, even using the most restrictive definition of diversification (the first row), 38 percent of small mergers were between unrelated companies. If antitrust was the *main* driving force behind diversification, then the small company samples should show almost

<sup>6</sup>More precisely, I used the roughly three-and-a-half digit industries that were used for vertical relations.

no diversification. Evidently there was a drive to diversify even when the takeovers were too small to concern antitrust authorities.

In Panel B, the diversification percentage is greater for small buyers than large buyers in the first three rows, again inconsistent with the antitrust hypothesis. The differences do not achieve statistical significance at conventional levels, but as in Panel A, the cause appears to be small differences rather than a lack of statistical power. The fourth row, which considers only the companies' top three businesses when making the diversification classification, indicates that large buyers had a greater tendency to diversify than small buyers. However, the difference is statistically insignificant, quantitatively trivial (less than 4 percent), and reverses in the fifth row when vertical relations are considered. The one piece of evidence for the antitrust hypothesis appears in the sixth row where the generous definition of diversification is employed; small acquirers bought in new industries 77 percent of the time compared to 89 percent of the time for large buyers. This difference is significant at the 5-percent level.

Because this section essentially documents the *absence* of an effect, the power of the tests is relevant. Table 3 evaluates robustness of the results. Parameter estimates are reported from logit regressions; this potentially utilizes more fully the size information. The first column of Table 3 presents the estimates of  $\beta_1$  from the following regression,

$$(1) \quad \Pr(D_i = 1) = F(\alpha + \beta_1 S_i^T).$$

Here  $D_i$  is a dummy variable equal to 1 if merger  $i$  was diversification,  $S_i^T$  is the target's size in billions of dollars, and  $F$  follows a logistic distribution. Equation (1) does not necessarily represent a causal structure, nor does it follow from a well-defined behavioral theory. It is merely a convenient way to detect correlations in the data. The antitrust hypothesis predicts that large targets more often were involved in diversification mergers:  $\beta_1 > 0$ . Six different  $\beta_1$  estimates are reported corresponding to the diversification measures used in Table 2. The  $\alpha$  parameters are not reported to conserve space. Five coefficients are inconsistent with the antitrust hypothesis, and the coefficient in the sixth row is significantly so at the 10-percent level. The positive coefficient in the second row is not statistically different from zero. Furthermore, all six coefficients indicate a quantitatively minute relation between target size and diversification. Interpreted as a probability model, the  $\beta_1 = 0.612$  estimate in the second row, the most favorable for the antitrust hypothesis, implies that a \$1 million target was only 0.8 percent less likely to be bought by a firm in an unrelated industry than a \$100 million target. The upper bound on the "true" value of the coefficient using a two standard deviation rule is  $0.612 + 2 \times 0.781 = 2.174$ . A  $\beta_1 = 2.174$  implies that a \$100 million target (certain to catch the attention of antitrust authorities) was only 2.9 percent more likely to be acquired in a diversification merger than a \$1 million target.

A set of logits was also estimated using the acquirer's size as the explanatory variable,

$$(2) \quad \Pr(D_i = 1) = F(\alpha + \beta_2 S_i^A).$$

Here  $S_i^A$  is the size of acquirer  $i$ . The  $\beta_2$  estimates for equation (2) are reported in the second column of Table 3. The first five coefficients are negative, contrary



TABLE 3  
Logit Regressions of Diversification on Assets

Definition of Diversification						Industry Controls		1971		1974	
	Target $\beta_1$	Acquirer $\beta_2$	Combined $\beta_3$	Target + Acquirer $\beta_4$	Acquirer $\beta_5$	Target $\beta_1$	Acquirer $\beta_2$	Target $\beta_1$	Acquirer $\beta_2$	Target $\beta_1$	Acquirer $\beta_2$
No 2-digit SIC code in common	-0.069 (0.758)	-0.144 (0.240)	-0.116 (0.211)	0.084 (0.793)	-0.152 (0.253)	0.129 (0.999)	-0.169 (0.257)	-8.845 (12.83)	0.231 (0.209)	-7.906 (13.01)	-0.459 (0.353)
No 2-digit and no vertical relation	0.612 (0.781)	-0.375 (0.379)	-0.205 (0.314)	1.093 (0.858)	-0.546 (0.426)	0.092 (1.035)	-0.620 (0.456)	—	—	—	—
No 3-digit and no vertical relation	-0.470 (0.899)	-0.373 (0.305)	-0.316 (0.263)	-0.100 (0.918)	-0.360 (0.325)	-2.596 (1.871)	-0.242 (0.326)	—	—	—	—
No 3-digit in common among top 3 industries	-1.189 (0.839)	-0.031 (0.289)	-0.140 (0.237)	-1.357 (0.925)	-0.161 (0.326)	-1.379 (1.382)	0.228 (0.357)	—	—	—	—
No 3-digit among top 3 and no vertical relation	-0.817 (0.873)	-0.234 (0.265)	-0.240 (0.228)	-0.645 (0.904)	-0.158 (0.283)	-2.019 (1.585)	-0.083 (0.289)	—	—	—	—
No 4-digit in common among top 3 industries	-1.358 (0.780)	0.268 (0.426)	-0.035 (0.311)	-2.039 (0.966)	0.760 (0.559)	-0.484 (1.250)	0.901 (0.560)	-11.38 (10.42)	0.243 (0.432)	-5.131 (8.326)	0.368 (0.648)

Each entry reports the  $\beta$  coefficient from a logit regression of a diversification dummy on a constant and a size measure (in billions of dollars). The standard error is in parentheses beneath each coefficient estimate. The regressions in the first two rows used 549 observations for 1968, 106 observations for 1971, and 121 observations for 1974. The regressions in the last four rows have 348 observations for 1968, 42 observations for 1971, and 36 observations for 1974.

to the antitrust hypothesis. The last coefficient is positive, but insignificant and quantitatively trivial: the point estimate of 0.268 implies that a \$1 billion acquirer was only 3.1 percent more likely to diversify than a \$10 million acquirer. A “best case” estimate for the antitrust hypothesis (using the two standard deviation method as above on the last coefficient) gives  $\beta_2 = 1.119$ , which implies a 9.6 percent increase in the probability of diversification when moving from a \$10 million buyer to a \$1 billion buyer.

The third column reports coefficients on the size of the acquirer and target combined,

$$(3) \quad \Pr(D_i = 1) = F(\alpha + \beta_3(S_i^T + S_i^A)).$$

This formulation allows for the possibility that enforcement decisions were based on the size of the post-merger firm. All six coefficients are negative, although none is statistically significant. As in the first two columns, the most plausible interpretation is that the size effect is trivial rather than that the estimates are noisy.

The set of logits in the fourth and fifth columns include target and acquirer size independently,

$$(4) \quad \Pr(D_i = 1) = F(\alpha + \beta_4 S_i^T + \beta_5 S_i^A).$$

The pattern on the coefficient signs basically confirms the other regressions. The first two coefficients on  $\beta_4$  are positive while the last four are negative, and the last one is significantly so at the 5-percent level. The positive  $\beta_4$  coefficient in the second row remains quantitatively trivial. The estimates of  $\beta_5$  are negative in four cases and positive in two cases, none of which is significant. The logistic function implies an interaction effect between  $S_i^T$  and  $S_i^A$  in regression (4), but I also ran logits that explicitly included an interaction term; these unreported estimates were not materially different.

The sixth and seventh columns report the  $\beta_1$  and  $\beta_2$  coefficients after controlling for primary industries. The logits in the sixth column included 18 dummy variables corresponding to the target company's primary two-digit industry, and the logits in the seventh column included 20 dummy variables corresponding to the buyer's primary two-digit industry. The coefficients change slightly when industry controls are added, but they tend to remain negative and quantitatively trivial. As another sensitivity test, I estimated (but do not report) the logits separately for each two-digit industry. The standard errors were larger but the sense of the results did not change: 22 of 30 coefficients were negative, with no particular industry pattern.

As a final check of robustness, I estimated  $\beta_1$  and  $\beta_2$  using the samples of 1971 and 1974 mergers. This addresses the possibility that 1968 is unrepresentative—it is a key year for the conglomerate merger wave, but only one year. Three-digit information was not collected, so only two different diversification measures were used. The  $\beta_1$  coefficients in all four logits are negative although imprecisely measured. Three of the four  $\beta_2$  coefficients are positive, but none is statistically significant and they do not approach quantitative significance.

### III. International Evidence

A second reason to be skeptical about the antitrust hypothesis is that increasing corporate diversification has been a feature of most Western economies in the postwar years even though tough legal restrictions on horizontal growth were unique to the United States.

In Britain, competition policy was governed by the 1956 Restrictive Trade Practices Act, intended to discourage cartels. A 1965 act gave the government the power to control certain mergers when they were against the “public interest.” These restrictions were rarely applied as the government was more interested in encouraging horizontal combinations than discouraging them (OECD (1974)). Despite this favorable environment for horizontal mergers, the United Kingdom also experienced a diversification merger wave in the 1960s and early 1970s. The peak was in 1965 measured by numbers, and 1971 measured by value of transactions (OECD (1974)). The number of takeovers that involved entry into new industries rose from 9.3 percent in 1949–1953 to 38.8 percent in 1954–1958, and 46.6 percent in 1969–1973 (Goudie and Meeks (1982)). British firms diversified internally as well. In 1950, 23 of the 100 largest British firms were diversified; by 1970, 54 of the top 100 were diversified (Chandler (1990)). A number of conglomerates even arose in the early 1970s, most notably BTR, the Hanson Trust, GEC, and Tarmac.

Mergers in Canada were governed by the Combines Investigation Act, which prohibited mergers that lessened competition “to the detriment . . . of the public” (Section 2). The few court judgements that had been issued by the middle of the 1970s took a narrow view of what constituted illegal mergers, essentially only those that would have created a “virtual monopoly” (OECD (1974)). Even so, by the early 1970s, diversification had become the primary type of Canadian merger. Only 43 percent of Canadian mergers were horizontal in 1971–1973 and only 30 percent in 1977–1979 (Baldwin and Gorecki (1990)).

In Germany, mergers fell under the Act Against Restraints of Competition.<sup>7</sup> Section 24 gave the Federal Cartel Office the authority to prohibit mergers that would create or strengthen a “market-dominating position.” A market-dominating position was construed narrowly—a market share of one-third was a rule of thumb. A study by the OECD explicitly dismissed the notion that the deterrent effect of Germany’s competition policy was comparable to the Celler-Kefauver amendment (OECD (1974)). Germany experienced an increase in merger activity coincident with other industrialized nations, although it was of lower magnitude. The number of large acquisitions rose from 15 in 1958 to 65 in 1968, and peaked at 305 in 1970. Diversification mergers accounted for less than 8 percent of acquisitions in 1966 and then increased to 42 percent in 1972 (OECD (1974)). Although there were no true conglomerates in Germany, there were highly diversified holding companies such as Flick, Quandt, Werhahn Bereich, and Reichling (Chandler (1990)).

France also experienced a merger wave in the late 1960s, coincident with a runup in stock prices. The number of single-product companies among the top 100 fell from 42 in 1950 to 16 in 1970, while the number of diversified companies rose from 37 to 52 (Lévy-Leboyer (1980)).

To summarize, the stringency of antitrust policy in the United States under the Celler-Kefauver amendment was unique to this country. Yet, most other industrialized Western nations experienced diversification merger waves and general movements toward diversification in their largest companies (Chandler (1991)).

#### IV. Conclusion

This paper provides two kinds of evidence on the hypothesis that tough antitrust enforcement caused the diversification of American corporations. First, in a data set of 549 mergers by NYSE firms in 1968, it is found that bidders were as likely to have entered new industries when they made small acquisitions as when they made large acquisitions, and small buyers were as likely to have diversified as large buyers. In addition, the absolute number of diversification acquisitions involving small companies was high. According to the antitrust hypothesis, diversification should have been common primarily in large mergers where same-industry acquisitions were precluded by tough antitrust enforcement. Logit regressions are also reported, indicating that the basic results are robust and that the test has power. Second, survey evidence is assembled showing that diversification took place in many industrialized nations in the 1960s and 1970s, even though tough restrictions against horizontal combinations were unique to the United States. The bulk of the evidence, then, is inconsistent with the antitrust hypothesis, and suggests that other candidate explanations for the rise and fall of corporate diversification should be emphasized in future research.

<sup>7</sup>In principle, since 1958, mergers in Germany and other European Community members were also subject to the competition policies of Article 86 of the Treaty of Rome. However, the first case decided under the treaty was not until 1972, and it does not appear to have been an impediment to horizontal growth (OECD (1974)).

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