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James W. McGuire

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Author:
McGuire, James W., University of California, Berkeley

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James W. McGuire

Permanent Affilliation

Department of Government
Wesleyan University
Middletown, CT 06459

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Institute of Industrial Relations
University of California
2521 Channing Way
Berkeley, CA
94720
(510) 642-5452

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There is a widely-held view that top union leaders in Argentina often call strikes not only in response to bread-and-butter issues like wages, benefits, working conditions, and job security, but also in response to political and organizational factors like electoral considerations, attempts to put the government on the defensive, efforts to influence public policy, conflict between union leaders and base-level militants, and struggles among factions of the national union leadership. The proposition examined here is that these non-economic causes make themselves felt primarily in strikes called by top union leaders, whereas bread-and-butter issues tend to prevail in strikes called by local union leaders. This central thesis concerning the "scope" of strikes is connected, in turn, to a methodological point. It will be argued that the size of strikes is measured more validly by the level of the union leadership at which the strike is called than by the number of workers involved in the strike -- at least in countries, like Argentina, where the trade union movement is organized primarily along industrial rather than craft or enterprise lines.[1]

To flesh out and test these propositions, I compiled a database of 3,116 strikes in Argentina between January 1984 and June 1991. Each strike was coded according to month, site, economic sector (metalworking, public administration, sugar milling, teaching, etc.), scope (national, provincial, municipal, enterprise, workplace, etc.), province, stated cause (if available), number of workers involved, and duration. The data were then aggregated by month and by quarter, and the monthly and quarterly aggregates were regressed on independent variables measuring economic and political factors plausibly related to strike rates. The results of these analyses confirm that economic factors predict monthly and quarterly variation in the number of small strikes better than such variation in the number of big strikes. Political variables, however, appeared to be related only weakly to strike frequencies, perhaps because the instruments used to measure them were too blunt for the task.

1. Research on Strikes and on Argentine Strikes

By distinguishing big strikes from small ones, this analysis can help recast a long-standing debate in the strike literature: whether strikes fluctuate primarily in response to changes in the business cycle (Rees 1952, Ashenfelter and Johnson 1969), or whether organizational and political variables need to be incorporated into the analysis in order to understand how strike rates change over time (Shorter and Tilly 1974; Hibbs 1978, Korpi and Shalev 1979). The theses are not counterpoised quite as sharply as this short summary suggests. Both schools grant that all of these factors probably have some influence on

strike patterns. Moreover, the "economic" school generally intends its propositions to apply to the short-term, whereas the "political" school focuses more on the long-term. If, as hypthesized here, it turns out that small strikes have mainly economic causes whereas big strikes have political ones as well, then both schools will have been partially vindicated: the "economic" school would be correct for small strikes, and the "political" school would be right for big ones. Such a finding, however, would indicate that future analyses of strikes may be better off analyzing small strikes separately from big strikes.

Argentina is a good case with which to test the impact of economic and political factors on strike activity. Between 1984 and 1991, within an overall context of stagnation or decline, Argentina experienced considerable month-to-month and quarter-to-quarter variation in economic conditions thought to influence strikes (Figure 1). But political factors might also be expected to have a strong impact on Argentine strike behavior, because the Argentine trade union movement is highly politicized. The ties between labor and Peronism, a populist political movement organized by Juan Perón in the mid-1940s, have endured into the 1990s. The politicization of the Argentine trade union movement has also stemmed from the state's important role (1) as an employer (a quarter of the country's economically active population is employed by the state; Palomino 1987:116); (2) as a manipulator of exchange rates, interest rates, and other determinants of aggregate wage and employment levels; (3) as an authority charged with recognizing unions, declaring strikes legal or illegal, and regulating collective bargaining (Gaudio and Pilone 1983, Slodky 1988), and (4) as an overseer of union finances and elections. Compared to a country like the United States, strikes in Argentina might well be expected to reflect political as well as economic factors.

The importance of strike activity to the Argentine polity and economy has sparked a host of analyses using quantitative data on strikes. From periodical sources, Korzeniewicz (1989) made an annual count of strikes from 1887 to 1907 and argued that workplace changes, especially in the scale of production, account for a post-1902 upsurge in strike activity. Gaudio and Pilone (1983) used National Labor Department data from 1930 to 1945 to argue that a rise in strike activity in the mid-1930s helped convince provincial and national authorities to involve themselves more closely in collective bargaining and the settlement of labor disputes. Doyon (1977) used government data on strikes from 1946 to 1955 to argue that unions under Perón were more than mere adminstrative agencies for implementing government policies. O'Donnell (1988:289-294) and Smith (1989:133-39) employed a newspaper-based data set to trace monthly variation in the number of strikes from 1955 to 1972; both writers noted that strikes by civil servants and workers in the

interior of the country were important components of the wave of protest that followed the May 1969 uprising in the city of Córdoba. Jelin (1977, 1979) compiled from periodical sources a data set on strikes from 1973 to 1976, and used it to formulate a periodization of this important era in Argentine politics. Finally, Falcón combed the Buenos Aires newspapers to construct a database of approximately 300 factory-level acts of labor protest between 1976 and 1981, demonstrating the "surprising vigor of the Argentine workers in resisting the combined offensive of the state and the capitalists" under the military dictatorship (Falcón 1982:130).

Each of these studies gives important insight into the motivations and circumstances that affect strike activity in Argentina. Even so, an important gap remains in the literature on Argentine strikes. All of the analyses just mentioned use strike data to illustrate historical arguments based on careful readings of events during specific periods of Argentine history. This indispensible undertaking may usefully be complimented by another style of analysis, focused more explicitly on the strike activity itself, which uses quantitative techniques to test hypotheses about the causes of strike fluctuations. Zapata (1986:175) is one of the few scholars to use such techniques to test such hypotheses. His findings for Argentina, that real wage increases are associated with a rise in strike activity and that periods of higher inflation are associated with reduced levels of strikes, seem plausible, but are based on only eighteen data points (years).[2] On the other side, systematic quantitative analyses of strikes have been confined to date almost exclusively to the advanced capitalist countries. If the analysis of strikes in particular contexts is designed to tell us something about strikes in general, it seems fruitful to extend the analysis of strikes beyond these countries to other world regions. One of the major obstacles to such an extension is the difficulty of obtaining basic data on strikes in industrializing countries. Detailed studies have been done on how strike statistics are collected and reported in industrialized capitalist nations (Fisher 1973, Walsh 1983); similar studies are needed for other countries. As a first step toward such a study, the third section of this paper makes a brief comparison of four sources of data on strikes in post-1983 Argentina.

The central aim of this study is to test the hypothesis that small strikes have mainly economic causes whereas big strikes reflect political factors as well. In the only other work on small strikes and big strikes that has come to my attention, Skeels, McGrath, and Arshanapalli, using data from the United States (1957-1981), showed that economic variables in multiple regression equations predicted quarter-to-quarter variation in small strikes "10-15 percent more" than quarter-to-quarter variation in big strikes (1988:585). However, they did not explore what non-economic factors might account for the

unexplained variance in the big strikes. Moreover, these authors followed the standard procedure for measuring strike "size": strikes in which the number of participants exceeded a certain threshold (e.g. 5000) were considered "big," whereas strikes below the threshold were considered small. Ever since Shorter and Tilly (1971) developed the notion of the "shape" of strikes, strike "size" has always been measured in terms of the number of strikers. If, however, the research goal is to ascertain the size and direction of impact of economic and political variables on strike activity, then number of strikers is not the appropriate way to measure the size of strikes, at least in countries where unions are organized by industry. In such countries, aggregate data on number of strikers (in a given month, a given industry, a given country, or whatever) conceals two more meaningful variables: the number of strike decisions, and the level of the union leadership at which the decisions are made.

If the number of strikers varies differently than the number of strikes in response to identical changes in economic and political conditions, it is almost certainly because such conditions trigger strike decisions at the grass-roots but not the national levels, in industries which employ few workers but not in industries that employ many, in industries that are highly unionized but not in industries that are sparsely unionized, and so on. What changing economic and political conditions plausibly affect is the propensity of union leaders to decide to strike, the economic sector in which strikes are likely to take place, and the level of the union leadership at which strike decisions are made. There is no straightforward reason to believe that, apart from these mediating factors, economic and political conditions should influence the number of workers the union leaders happen to bring with them once they make the decision to call a strike. Number of strikers is an important measure of the impact of the strike on the society at large (Skeels 1971:518), but there is no prior reason to believe that it should vary in any straightforward way with changes in economic and political conditions, except insofar as it serves as a clumsy proxy for other factors. For the purposes of the present study, the most useful measure of a strike's size is its scope -- national, provincial, local, etc. Accordingly, big strikes will be defined as strikes called at the national level of a union, and small strikes as those called below this level,with the exceptions noted in Table 1.

The biggest (broadest-scope) strikes in Argentina are the economy-wide general strikes called by the CGT (General Labor Confederation), of which there were 13 during the 1983-89 term of Radical Party president Raúl Alfonsín. Each of the general strikes during the Alfonsín government was overtly political, aimed at forcing the government to change its economic and labor policies. Although organizational motivations for the general

strikes are difficult to pin down, it is interesting to note that each had the effect of giving CGT head Saúl Ubaldini a forum to display the charisma that made him the most popular union leader in many years. The opportunity to use his oratorical skills at rallies associated with the general strikes, and to remind those assembled of his combative stance toward the 1976-1983 dictatorship, helped Ubaldini preserve his power against rivals in the union leadership, without which he would probably have disappeared into obscurity as a minor official in a very small union (McGuire 1992:58). The general strikes are not included in the 3118 analyzed in this study, but the important role that political and perhaps organizational factors played in causing them confirms the proposition advanced at the outset: strikes called at the national level of a union are more likely than strikes called at lower levels to have political and organizational causes intertwined with economic ones. Just as Shorter and Tilly (1974:10) expected the political dimension of French strikes to expand over time as the labor movement grew more national in scope, I expect the political dimension of Argentine strikes to expand -- and, more testably, the economic dimension to contract -- as strikes become more national in scope. And whereas Zapata (1990:389-391) suggested that economic factors played the major role in motivating strikes in Chile and Peru, whereas political factors predominated in Mexico and Venezuela, I suspect that the differential impact of political and economic factors on strike activity pertains less to different countries than to different kinds of strikes (small vs. big) within each country.

3. A Caveat on Method

The attempt to tease out the causes of strikes by means of quantitative analysis of aggregate time-series data has a long and venerable history (Franzosi 1989). One might well ask, however, why aggregate national data should be used to look for insights into causation that takes place at the level of the individual strike. Why not just ask the strikers what caused each strike? For one thing, it would require a formidable number of interviews to get a decent sample. For another, the strikers themselves may disagree as to the cause of the strike, may focus on immediate causes at the expense of underlying ones (or vice-versa), or may be unwilling to discuss the issue at all. A variant on the "ask the striker" strategy would be to analyze the stated causes of strikes as recorded in the accounts of government officials, trade associations, or journalists who followed strikes closely. This fallback strategy fails, however, to resolve the problem of strikers misinterpreting the cause of the strike. It also introduces selection bias and measurement error, but as long as these vary constantly or randomly over time, they should not bias the results of time-series analysis. The main problem with the fallback strategy is a practical one: neither the

government nor trade associations in Argentina have compiled systematic data on the stated causes of strikes for more than a year or two at a time.

Such data can be culled, however, from the monthly newsletter of the Servicio de Documentación e Informacion Laboral (DIL) in Buenos Aires. Founded in 1961 by the late Leonardo Dimase, DIL published from 1961 to 1976 an invaluable monthly newsletter called Informes Laborales, which included a section describing individually all the labor conflicts its researchers found out about each month. DIL was forced to close in the repressive atmosphere of the post-1976 military regime, but reopened in 1982 when the military announced its return to the barracks. From that point until June 1989, when the economic crisis forced DIL to close for lack of funds, the newsletter continued to appear. Although Informes Laborales lacked a systematic format for presenting its accounts of strikes (apart from grouping them by industry), and although the newsletter gave no systematic information on strike duration or number of participants, it provided key information on the stated causes of strikes that is not available elsewhere. The primary sources for the strike information in Informes Laborales were the major Buenos Aires newspapers and the DIL staffers' union and employer contacts around the country (interviews with DIL staffers, April 1985, September 1986, and June 1989). Of 2503 strikes recorded in Tendencias Economicas between January 1984 and May 1989, Informes Laborales reported the stated causes of 1,468. A summary of these causes and of the frequency with which each appeared is given in Table 2.

Five actually stated strike causes may be classified as "political": (1) a demand that the government halt the privatization of a state corporation; (2) a demand that the government change its laws or policies; (3) a demand that the government legalize collective bargaining -- which it did not fully do until early 1988; (4) a demand that the government recognize a union, remove a union from trusteeship, or unfreeze a union's funds; and (5) a demand that the government return social welfare funds (obras sociales) to union control. Using this classification, only 3.4 percent (50 of 1468) of strikes for which information is available were "political." In line with this study's main hypothesis, twice as many big strikes as small strikes involved overtly political causes (5.6 percent vs. 2.8 percent). It is quite possible, however, that some of the strikes overtly over economic (and particularly salary) issues have broader causes behind them, including organizational and political ones. Given the Argentine labor movement's high degree of politicization, its division into competing factions, and tensions within the leaderhship of each union -- together with the fact that the strike can be put to political and organizational as well as economic ends -- it

seems unlikely that only a handful of strikes are motivated by non-economic issues, as the stated cause statistics suggest.

The statistics on stated strike causes indicate that most impressive difference between big strikes and small strikes was along the offensive vs. defensive dimension rather than the political vs. economic one. Nearly 20 percent of small strikes, but less than 4 percent of big strikes, were called to demand the payment of overdue wages. This demand was particularly prevalent among sugar mill workers, meatpackers, teachers, and civil servants in the poorer provinces of the northwest and Patagonia. Likewise, more than 13 percent of small strikes, but less than 2 percent of big strikes, involved layoff issues. Strikes and factory occupations to protest layoffs and plant closings were most frequent in individual sugar mills and meatpacking plants, as well as in textile and metalworking factories. Overall, small strikes involved "defensive" issues more than four times as frequently as big strikes, whereas big strikes involved "offensive" issues almost twice as often as small strikes. More than 70 percent of big strikes had the straightforward stated aim of securing wage hikes, and more than 10 percent involved one group of workers demanding pay proportionality with another group. In effect a disguised bid for a pay hike, the demand for pay proportionality was especially common among public employees where wage scales were well-publicized (employees of the national lottery were scandalously well-paid). The court clerks alone, who demanded wage proportionality with judges, accounted for more than half of all strikes called to achieve wage parity or proportionality.

In our discussion of quantitative studies of strike behavior, we noted considerable disagreement as to the direction of the relationship between strike frequency and such economic factors as production, wages, employment, and inflation. It was suggested that the reason for the contradictory findings may be that bad economic times increase the motivation to strike, whereas good economic times increase the opportunity to strike successfully. If so, then defensive strikes should increase when times are bad and decrease when times are good, whereas offensive strikes should increase when times are good and decrease when times are bad. In other words, production, wages, and employment should all be correlated positively with offensive strikes and negatively with defensive strikes. A preliminary test of this hypothesis using multiple regression analysis on monthly strike figures was, however, inconclusive. Industrial production and real wages both had strong and statistically significant positive effects on the frequency of small offensive strikes, but had no statistically significant effects on the frequency of small defensive strikes. When the same regression models were run on a universe restricted to strikes in industry, the relationship between the economic variables and the offensive strikes disappearead, while

real wages showed a positive (i.e., counter-hypothetical) effect on the frequency of small defensive strikes.

Similarly inconclusive was a study by Shorter and Tilly (1974:88), who found that only high industrial production had the expected effect of boosting offensive strikes and depressing defensive ones. High wages went counter to the hypothesis; they actually boosted the frequency of defensive strikes (as they also did in Argentine industry) and depressed the frequency of offensive ones. High employment in some years had the expected effect of boosting offensive strikes and depressing defensive ones, but in other years it had the opposite effect. Despite these inconclusive results, further research on offensive vs. defensive strikes seems warranted. Because the hypothesis seems so plausible intuitively, consistently negative findings may provide important insights into general principles of strike behavior. Moreover, if strikes are disaggregated into "small" and "big" categories and analysis done with big strikes excluded, then previously inconclusive results may turn out to support (or militate against) the hypothesis.

4. Data on Argentine Strikes

Given the importance of strikes to the Argentine economy and polity, it is unfortunate that attempts to record strike activity have been sporadic, uncoordinated, and incomplete. Statistics compiled by the National Labor Department during the 1920s and 1930s (Gaudio and Pilone 1983) may well constitute the best official strike data ever collected in Argentina. The Labor Ministry collected data on strikes during the 1946-1955 Perón presidency (Doyon 1977), but the politicization of government agencies during this period calls into question their accuracy. Shortly after the 1955 coup, the Labor Ministry resumed its compilation of strike statistics using forms submitted to the Federal Police by the firms in conflict, employers' associations, and unions (Ministerio de Trabajo 1961:18-21). The main deficiencies of the labor ministry's data (Ministerio de Trabajo 1961, 1966, 1972 and Secretaria de Estado de Trabajo 1969), which cover the years 1957 to 1972 and are broken down along several interesting dimensions (including by month), are (1) that the raw data are unavailable, (2) that the years 1962 and 1963 are omitted, and (3) that the statistics cover strikes and stoppages only from the Federal Capital -- omitting even the Greater Buenos Aires area in which much of the country's industry is located. Finally, a team of researchers headed by Guillermo O'Donnell constructed from the newspaper La Razón a monthly count of strikes from 1955 to 1972, disaggregated by location, economic sector, and a rough measure of number of workers involved. Although the raw data is no longer available, and although no figures could be obtained for the duration of strikes,

O'Donnell's data set provides an invaluable resource for students of Argentine strikes and might well be used in a follow-up to the present analysis.[3]

Between December 1973 and September 1975, the Labor Ministry's Statistical Department published a new data series, this time covering the Greater Buenos Aires and Córdoba areas (Jelín 1977:48). This turn for the better was followed by a turn for the worse: no official Argentine agency compiled strike data between September 1975 and January 1987. In that month, however, the Labor Ministry's Human Resources Directorate (Dirección Nacional de Recursos Humanos) began to produce internal documents giving data for strikes in the country as a whole (Ministerio de Trabajo 1987-88). Although the data were said to come from a variety of sources, a perusal of the hand-written coding sheets on which individual strikes were recorded showed that the vast majority of records were taken from the newspapers (which means that journalists are the ultimate source for every set of strike statistics covering post-1983 Argentina). Budgetary difficulties, coupled with the problems of resuming the collection of strike data after twelve years of inactivity, forced the Labor Ministry in August 1988 to begin to restrict its compilation to strikes of national scope and strikes (of any scope) occurring in the Federal Capital and/or Greater Buenos Aires. Precisely when Menem came to power in 1989, the labor ministry stopped collecting strike data altogether. Part of the explanation may lie in a lack of resources. The elevator in the building that houses the Human Resources Directorate was immobilized in July 1991 in the same place it had come to rest in July 1989. As a staff member of the Secretariat pointed out, the collection of strike statistics is not a high priority in a country whose government needs to keep the hospitals going during a period of severe budget cuts.

Because they covered only nineteen months at the national level, the Labor Ministry's data proved to be of limited use in this study. But least three private Buenos Aires institutions began after 1983 to issue monthly counts of strikes in Argentina: the business-oriented weekly newsletter Tendencias Económicas; the now-defunct bimonthly journal Bimestre Político y Económico (Centro de Investigaciones Sobre el Estado y La Administración--CISEA), and Unión Para la Nueva Mayoría. Each of these institutions compiles its statistics by counting reports of strikes in the country's leading periodicals. Figure 2 summarizes the monthly strike counts compiled for the January 1984 to May 1989 period by the Labor Ministry, Tendencias Económicas, the Bimestre Político y Económico, and the Unión Para la Nueva Mayoría, and Figure 3 shows the number of strikes, strikers, and working days lost for that period according to Tendencias Económicas.

The data used in the present study is taken from Tendencias Económicas, whose staff records all strikes reported in any of six Buenos Aires newspapers: Clarín, La Nación, Crónica, Sur, Página 12, and La Cronista Comerical. In the last issue of each month, Tendencias Económicas provides a list of all strikes that came to the attention of its staff, together with the duration of and number of workers involved in each one (the lists are reprinted in the Consejo Técnico de Investigaciones' yearly Anuario: La Economía Argentina). Only strikes (one day or longer) and stoppages (from 15 minutes per shift to 24 hours) are listed; other job actions like work-to-rule, quite de colaboración, trabajo a desgano, etc. are omitted from the count. Tendencias Económicas has several advantages over the other sources. Firstly, it publishes the raw data strike by strike, which permits the aggregation of new information (e.g. scope, the crucial variable in the present analysis) on a strike-by-strike basis. Secondly, the Labor Ministry and Bimestre counts were discontinued in 1990. The strike count of the Unión Para la Nueva Mayoría has continued, but as Figure 2 shows, it is unusually poorly correlated with the other sources. A third advantage of Tendencias Económicas is that it is the only source to include figures for strike duration and number of participants.

These advantages notwithstanding, the strike data in Tendencias Económicas also has problems. Its coverage is incomplete relative even to other counts based on periodical sources: for the January 1984 to May 1989 period, an average of only 38.4 strikes was recorded each month by Tendencias Económicas, as compared to 49.5 for the Unión Para la Nueva Mayoría and 53.2 for the labor ministry. One may further assume that other strikes, particularly small ones, escaped the notice even of the journalists upon whose reports each of the strike counts is built. When a job action calls for a series of successive or escalating strikes or stoppages, each is recorded as a separate strike, although some might prefer a count where the related episodes were recorded as a single event. It is also not clear what month is assigned to strikes that begin in one month and end in the next. Turning from strike frequency to the other measures, some researchers have expressed doubt that the Buenos Aires newspapers really do follow each strike from beginning to end. When pressed with this possibility in an interview, the staff member in charge of collecting strike data insisted that one can indeed trace every strike from beginning to end through the newspapers, although not necessarily through a single newspaper. For example, the informant suggested, one paper might say "the workers in Ingenio Las Palmas went on strike today," another might say a few days later that "the workers in Ingenio Las Palmas have been on strike for three days," and finally another would say that "the workers in Ingenio Las Palmas havé finally settled their strike."

The most problematic statistic in the Tendencias Económicas compilation of strikes is the one for workers involved. The staff member in charge of collecting strike data reported that the figures for number of strike participatnts were taken either from contemporary newspaper accounts or from the Consejo de Investigaciones Técnicas' archive of information about union membership and employment in workplaces, provincial administrations, and other units in which strikes take place. For some strikes, however, figures for the number of strikers were completely unobtainable, and in these cases that part of the strike record was left blank. Because missing values on this variable would have prevented its inclusion in this analysis, a decision was made, in cases where Tendencias did not indicate the number of strike participants, to estimate that number by systematic rules based on the number of strikers involved in comparable strikes for which Tendencias did record the number of strike participants. In the database with the raw strike records recorded participants and estimated participants were kept in separate columns, but in the present analysis all figures for number of strikers and working days lost to strikes make use of the estimated data where the recorded figure is not available.

Even where Tendencias Económicas gives a figure for number of participants, there is some question as to its accuracy. The statistics for participants in smaller strikes look reasonably accurate, but those for larger strikes are, in some cases, obviously inflated. For example, a strike by civil servants in the province of Salta in June 1989 is recorded as having involved 85,000 workers, but according to a report in the newspaper Clarín (19 July 1991, p. 14), provincial employment in Salta amounts only to 37,302. Shortly after this report was published, Tendencias Económicas began to record much lower numbers of participants in strikes by provincial administrations, and did so in exact rather than round numbers. The problem of overestimation of the number of strikers also seemed acute in certain nation-wide strikes by court clerks, railway workers, dock workers, and hotel and restaurant employees. For example, a May 1988 national strike by the railway workers' Unión Ferroviaria is said to have involved 143,000 workers. The labor ministry did in fact certify that 142,345 workers were eligible to vote in the union's December 1984 election, but this number included 62,682 retirees (Informes Laborales January 1985:2.374) who could not have taken part in the strike. By way of comparison, the 1985 Census of Persons in the National Public Administration -- Argentina's railways are part of the public sector, although the Menem government plans to privatize them -- found that the railways employed only 108,866 persons (García de Fanelli 1988:58). About a quarter of these employees belong, moreover, not to the Unión Ferroviaria, but rather to separate unions for locomotive drivers, signal-switchers, and supervisory personnel.

Problematic as these measurement issues may be for some purposes, they cause no undue hardship for the present study. For one thing, the most problematic figures, those for number of strikers, are important for the methodological point involving how to measure strike size, but not for the basic issue of whether economic variables predict small strikes better than big strikes. Indeed, using a scope apporach to strike size rather than one based on number of workers involved obviates this measurement problem. For another thing, there is no reason to suspect that any of the measurement problems, such as the probable failure of the newspapers to pick up many smaller strikes in the interior of the country, was anything but constant or random with respect to time. In other words, strikes may be undercounted over the entire period in question, but there is no reason to suspect that the undercount is systematically worse in some months than in others. A cynic might wonder whether the drop-off in strikes during January and February reflects the fact that journalists or strike coders, rather than workers or employers, may be taking a vacation, but there is a comforting spike downward in industrial production every year during those months. Whatever its source, moreover, seasonality is easily corrected for by means of a dummy variable. It is obvious that the newspapers record a much higher proportion of big strikes than small strikes, but as long as they miss roughly the same proportion of each kind of strike each month, the results of time-series analysis should not be biased. If the proportion of strikes missed each month is random rather than constant, however, the standard errors of the parameter estimates will be larger, and the coefficients of multiple determination (R^2) smaller, than if all of the information were collected.

5. Hypotheses and Research Design

If small strikes have mainly economic causes, whereas big strikes reflect the impact of political and organizational factors as well, economic variables should predict the frequency of small strikes better than the frequency of big strikes, whereas political variables, to the extent that they can be measured, should predict the frequency of big strikes better than small strikes. To test this hypothesis, the 3,116 strikes in the data set were aggregated by month and subjected to time-series multiple regression analysis. Separate sets of analyses were run on four dependent variables: (a) number of strikes per month, (b) number of participants in strikes per month, (c) number of big strikes per month, and (d) number of small strikes per month. The independent variables representing economic factors were index numbers for industrial production, real wages in manufacturing, workers employed in manufacturing, and retail prices.[4] In addition, a dummy variable ("vacation") was constructed to represent the months January and January and February, when many Argentines go on vacation and production takes a seasonal dip

(see Figure 1). Using these variables, each of which has a long history of inclusion in quantitative analyses of strikes, the best fit was obtained with a three-month moving average of industrial production ending in the current month, a one-month lag applied to real wages and to retail prices, and the current month's index of industrial employment. Hence, it was in these forms that these economic variables were included in the regression models.

Previous research has been inconclusive as to whether these and other economic variables have positive or negative effects on strike frequency. In his study of annual strike rates in the United States, Edwards (1981:69) found that each of the four economic variables employed in the present study switched signs (from positive to negative, or vice-versa) according to the subset of years being analyzed. Rees (1952) found that strikes were most frequent just before the peak of the business cycle, but Levitt (1953) found an inverse relationship between prosperity and the incidence of strikes. Shorter and Tilly (1974:93-103) found the annual frequency of strikes in France to be positively associated with industrial production but negatively associated with real wages. These inconclusive findings are not altogether surprising. It seems reasonable to assert that when times are good, workers will be less motivated to strike (because wages and job security are likely to be better than when times are bad), but will have more opportunity to strike (because workers are likely to have more resources with which to endure a strike, because a tight labor market makes finding strikebreakers harder, because inventories tend to be lower, and because employers want to take advantage of high demand to reap profits before the next downturn) (Levitt 1953). On the other hand, when times are bad, the motivation to strike should be higher but the opportunity lower, for the opposite reasons. Whether opportunity will prevail over motivation, or motivation over opportunity, probably depends on context. For the present purpose, it is not necessary to have a definite prediction as to whether production, wages, employment, and price stability will be positively or negatively associated with strike frequency. The hypothesis simply predicts that the economic variables in aggregate will explain a higher proportion of the variance in small strikes than in big strikes.

To determine the effects of political variables on strikes, it was necessary first to decide what sorts of political effects were to be expected. It was hypothesized (a) that national union leaders would not want to harm the electoral chances of Peronist candidates by antagonizing the public with strikes in the months leading up to elections (Skeels 1971:520 makes an analogous hypothesis for the United States); (b) that national union leaders would want to send a message that appointing a Peronist union leader to serve as

labor minister was a good way for a Radical president to reduce strikes; and (c) that national union leaders would want to refrain from strikes out of solidarity with Peronist president Menem. To test these hypotheses, three dummy variables were constructed. The first indicated the two months immediately preceding the national elections of November 1985, September 1987, and May 1989 respectively; the second indicated the five months (April 1987 - September 1987) during which Carlos Alderete, a Peronist union leader, served as labor minister in the cabinet of Radical president Raúl Alfonsín; and the third indicated the eighteen months (July 1989 - December 1990) during which Peronist Carlos Menem was president of Argentina. Dummy variables are blunt instruments for teasing out the subtleties of the relationship between politics and strikes, but until an alternative emerges, their use seems inescapable. Using dummy variables is a standard technique for modelling the effect of political factors on strikes (see e.g. Skeels 1971).

Ordinary least squares regressions run with the above-mentioned variables indicated the presence of serial correlation when the Durbin-Watson test was applied, so the maximum likelihood iterative technique was substituted. Sixteen regression models were tested, four on each of the four dependent variables: number of strikes, number of strikers, number of big strikes, and number of small strikes. The first two regression models in each set contained exclusively economic independent variables. One included vacation, industrial production, real wages, and inflation, the other included the same variables but substituted employment for real wages (it was inadvisable to include real wages and employment in the same equation because the high correlation between the two (Table 3) suggested a serious collinearity problem). The second two equations in each set were the same as the first two, except that the three dummy variables for political factors were included along with the economic variables. The set of sixteen regressions was run on four universes of data: strikes throughout the economy aggregated by month, strikes in industry aggregated by month, strikes throughout the economy aggregated by quarter, and strikes in industry aggregated by quarter.

The following results were expected. (1) For the models including only economic variables, it was thought that the adjusted coefficient of multiple determination (adjusted R^2) would be highest, and the parameter estimates of the economic variables most substantively and statistically significant, when the dependent variable was small strikes. The next-best result would be obtained when the dependent variable was total strikes, and the third-best when the dependent variable was big strikes. (2) It was also expected that the equations including only economic variables would predict the number of strikes in industry better than the number of strikes across the whole economy, because the

production, real wages, and workers employed measures used in the analysis pertain specifically to industry. (3) For the models including both economic and political variables, it was thought that the adjusted R^2 would be highest, and the parameter estimates of the economic variables most substantively and statistically significant, when the dependent variable was big strikes. The next-best result would be obtained when the dependent variable was total strikes, and the third-best when the dependent variable was small strikes. (4) Finally, if it is true that scope is a more valid measure of strike size than number of workers involved, all equations, including those incorporating political variables, should predict the number of big strikes per month better than the number of workers involved in strikes per month.

Results

The regression results may be found in Table 4. Hypothesis (1), that economic variables taken alone would predict small strikes better than big strikes, was confirmed in every analysis. The adjusted R^2 was invariably higher in the small strike than in the big strike equations, and the parameter estimates were invariably more substantively and statistically significant in the small strike than in the big strike models (except for those found to be insignificant in both models). Economic variables predicted small strikes better than big strikes regardless of whether political variables were included or excluded, regardless of whether the data was aggregated on a monthly or quarterly basis, and regardless of whether the regression was run on all strikes or only on strikes in industry. The hypothesis that economic variables would predict small strikes better than total strikes was not, however, supported by the data. In only four of the sixteen regression sets was the adjusted R^2 higher in the small strike than the total strike model, whereas in ten of the sixteen in was higher in the total strike than the small strike equation. Generally speaking, however, the R^2 and parameter estimates did not differ much in the small strike and total strike equation. That is to be expected, because most total strikes are small strikes, and the two series vary closely together (Figure 3).

Only in the case of quarterly-aggregated small strikes and total strikes was there confirmation of hypothesis (2), that economic variables would predict strikes better in industry than in the economy as a whole. The rationale behind the hypothesis was that the economic variables were specifically concerned with industrial production, employment, and wages, so to the extent that they influenced strike behavior, they would be more likely to do so strongly in industrial than in non-industrial sectors. In most cases, the economic variables did a better job of predicting strike frequency in the economy as a whole than in

industry alone. It may well be that these variables are good proxies for trends in the economy as a whole. Alternatively, it could be argued that the better predictive power in the whole-economy equations simply derives from the higher number of strikes in that universe, which tends to make the data series smoother and thus more predictable. That would be a particularly worrisome explanation, for a similar argument could be made about small strikes and big strikes. That argument would be, in effect, that economic variables predict small strikes better than big strikes simply because the dearth of big strikes makes the series more erratic, not because there is any substantive difference between the susceptibility of each type of strike to economic influences. Fortunately, the industry - whole economy comparison provides a good check on this possible deficiency in the small strike - big strike comparison, for the mean monthly number and standard deviation of industrial strikes are very close to those of big strikes. It is easily seen that the difference in the adjusted R^2s is much greater when the big strike equations are juxtaposed to the small strike equations than when the industrial strike equations are compared to the whole economy equations. Moreover, if it were true that the powerful big strike/small strike finding was an artifact of the scarcity of big strikes, then the difference in the R^2s should decline when the data was aggregated by quarter rather than month, putting more big strikes into each unit of observation. In fact, however, no such decline takes place. The big strike/small strike finding is very robust.

Turning to hypothesis (3), the dummy variables devised to proxy for hypothesized political factors turned out to have virtually no effect on strikes. Only twice in the thirty-two models that included political variables did (a) the model as a whole pass F-Test at more than a .05 level of significance and (b) the parameter estimate for one of the political variables turn out to be statistically significant. That is not much different from what one would expect from chance error if one adopts the .05 cut-off, which will generate a false positive on average once every twenty times. Reinforcing the suspicion that the two positive findings were flukes, they both appeared in equations where the adjusted R^2 was only .10. If one looks only at the sign of the parameter estimate, disregarding both substantive and statistical significance, it is interesting to note that, very much counter to what was predicted, big strikes seemed to increase under Menem while small strikes decreased. It is unfortunate that owing to the limitations of the independent variables the last data point was December 1990, because the strike data runs through May 1991 and there was a sharp drop in strike activity in the first few months of that year. Until a better way is found to measure political variables, or until more data is in hand, we must remain

skeptical of the argument that political variables influence big strikes more than small strikes.

The fourth hypothesis involved a comparison between equations in which the dependent variable was number of big strikes and those in which the dependent variable was number of workers involved in strikes. What economic and political factors are thought to be causing is strike <u>decisions</u>, of which number of strikes is a more valid measure than number of strikers. The latter measure, in the Argentine case, is simply a clumsy proxy for number of strike decisions at the upper levels of the union leadership, with a lot of other noise thrown in. If one is interested in what causes strikes that have a major impact on the whole society, one is better off using number of big strikes than number of workers involved, because the former measure bears more heavily on the strike decision whereas the latter simply reflects how many workers the decision-makers are able to bring along with them. Consequently it was thought that economic variables taken alone, and economic and political variables together, would both predict big strike frequency better than they would predict number of workers involved in strikes. The findings were inconclusive; neither dependent variable was predicted very well by any of the regression models.

Conclusion

This study's major finding is that economic variables influence small strikes more than they influence big strikes. The chief implication of the finding is that students of strike research need to take more seriously the possibility that the causes of strikes change not only as the labor movement evolves over time or as the observer passes from country to country, but also as a function of the level of the union leadership at which the strike is called. It remains for future research to assess the findings of this study in other contexts, to devise better ways of measuring hypothesized political causes of strikes, and to begin to look into methods of operationalizing organizational variables (e.g. conflicts among union leaders) that can be employed in the analysis of short-term fluctuations in strike activity. Apart from these specific findings and recommendations, this paper will have served its purpose if it stimulates industrial relations scholars to look more closely at the labor movements outside the advanced industrial countries, if it encourages Latin Americanists to take more seriously the concepts and methods used in the industrial relations literature on strikes, and if it provokes new efforts to compile and assess the quality of data in countries where strike research remains in its infancy.

[1] Since 1945, the legal framework for unions in Argentina has permitted only "one union per sector." This rule, however, leaves plenty of room for debate about what constitutes a sector. For example, the metalworkers have different unions for supervisory personnel (28,000 members) and ordinary workers (267,000 members). The textile and tobacco workers have different unions for white-collar and blue-collar workers. The railway workers have different unions for ordinary workers, locomotive drivers, signal switchers, and supervisory personnel. In the Labor Ministry itself, 4000 or so employees are split between the state workers' ATE and the civil servants' UPCN (interviews with workers in the Labor Ministry). Several shipyards include workers represented by the metalworkers, construction workers, naval workers, and state workers unions. Car plants are represented by both the auto workers and metalworkers unions, and a few near Córdoba even have enterprise unions (Evans et al. 1984). The maritime industry is perhaps the most fragmented at all, undoubtedly because of the important legacy of craft unionism in this sector. The task of docking and unloading ships is entrusted to workers belonging to seventeen different unions (interview with Labor Undersecretary Armando Caro Figueroa, September 1986).

[2] Zapata's figures for strikes, strikers, and working days lost in strikes are identified in his Appendix 2 (pp. 196-97) as pertaining to the province of Buenos Aires. Actually, they are identical to the figures in the labor ministry publication Conflictos del Trabajo (Ministerio de Trabajo, 1966, 1972), in which it is stated explicitly that the figures pertain only to the city of Buenos Aires, i.e. the Federal Capital, a district administratively and sociologically distinct from the province of Buenos Aires. (The population of the province of Buenos Aires is three times as large as the population of the Federal Capital.) Zapata then uses these figures to compute (p. 194) Argentina's tasa de conflicto (ratio of the number of strikers to number of union members), even though the numerator of this quotient contains figures for the Federal Capital whereas the denominator contains figures for the country as a whole. Both the numerator (number of strikers) and denominator (number of unionized workers) is given for each year between 1946 and 1972. Unaware that any such figures existed on a yearly basis for the number of unionized workers, I checked Zapata's source, Ducatenzeiler 1980. It contained figures only for 1957, 1960, 1963, 1966, 1969/71, and 1972. Zapata, computation revealed, had interpolated the data for the intervening years. Interpolation would have been a reasonable solution except that (a) Zapata neglected to mention that he had used this technique and (b) it has been shown (Torre 1972:4-8; McGuire 1989:314-323) that the figures reprinted in Ducatenzeiler's book exaggerate the number of union members in 1960 and 1963 (Ducatenzeiler's union membership figures come from DIL 1972, which reprinted exaggerated figures submitted to the government by the CGT).

[3] O'Donnell's data set is stored on a computer tape at the University of Michigan's Inter-University Consortium for Political and Social Research. For a description of the collection and coding procedures see O'Donnell 1988:299-294, 327-28.

[4] The index numbers for industrial production (1977=100) were taken from Consejo Técnico de Inversiones, Anuario: La economia Argentina, various issues. Those for real wages in manufacturing (salario total media mensual, 1983=100) and for workers employed in manufacturing (1983=100), as well as the absolute figures for the monthly increase in retail prices, are taken from Argentina, Instituto Nacional de Estadística y Censos, Estadística Mensual, various issues.

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TABLE 1
Big and Small Strikes: Coding Key

Abbr	Scope of Job Action	English Equivalent	Size	Exceptions to Size, Other Notes
NACI	Pais, Nación	Whole Country	BIG	NACI strikes in the radio industry coded SMALL
PROS	Provincias Multiples	Multiple Provinces	BIG	PROS strikes with ≤15,000 particip coded SMALL
PROV	Provincia	Province	SMALL	PROV strikes by FOTIA (sugar) ≥7000 coded BIG
GRAN	Gran Buenos Aires	Greater Buenos Aires	SMALL	GRAN strikes with ≥12,000 strikers coded BIG
MUNI	Municipalidad, Ciudad	Municipality, City	SMALL	MUNI strikes in CAPI coded BIG
RAMA	Rama	Branch of Economic Sector	SMALL	RAMA strikes with ≥10,000 strikers coded BIG
DESC	Desconocido	Unknown	SMALL	One Luz y Fuerza strike w/17000 particip coded BIG
RAMP	Rama en Provincia	Branch within a province	SMALL	(Many strikes that should be RAMP still RAMA)
RAMM	Rama en Municipalidad	Branch within a city	SMALL	(Many strikes that should be RAMM still RAMA)
EMPM	Empresas	Multiple Firms	SMALL	None
EMPR	Empresa	Single Firm	SMALL	None
PLAN	Planta, Sitio	Single Plant or Work Site	SMALL	None

Key to Tables 3 and 4

Vacat = Dummy variable for January and February
InPro = Industrial production (3 mo. moving average in monthly table)
RWg = Real wage in manufacturing (1 mo. lag in monthly table)
Empl = Workers employed in industry
Prices = Change in retail prices over previous month (1 mo. lag in monthly table)
Elec = Dummy variable for two months preceding each of three elections
Ald = Dummy variable for five months in 1987 when Alderete was labor minister
Men = Dummy variable for Menem's eighteen months as president in 1989 and 1990
TTot = Number of total strikes per month
TSma = Number of small strikes per month
TBig = Number of big strikes per month
TPar = Number of participants in strikes per month
ITot = Number of total strikes per month in industry
ISma = Number of small strikes per month in industry
IBig = Number of big strikes per month in industry
IPar = Number of participants in strikes per month in industry

TABLE 2

The Stated Causes of Argentine Strikes, January 1984 to May 1989

Abbr	Aim	Total	Smll	Big	Total(%)	Small(%)	Big(%)	Cause (in DIL)	English Equivalent
SINF	Excl.	985	954	31		44.7*	8.4**	Sin Información	No information on strike found in DIL, Informes Laborales
DESC	Excl.	50	35	15		1.6*	4.1**	Desconocido	DIL mentions strike but not its causes, or describes causes ambiguously
ATRA	DEF	236	224	12	16.1	19.5	3.7	Pago Atrasado	Demand for overdue wages owed by employer
DESP	DEF	158	152	6	10.8	13.3	1.9	Despedidos	Layoffs (except PERS), fear of layoffs, failure to issue severance pay
COMP	DEF	21	17	4	1.4	1.5	1.2	Cumpliam. Contr.	Demand employer comply w/contract or that prev. cont. be respected
PERS	DEF	19	19	0	1.3	1.7	0.0	Persecución	Protest vs. persec. of union, refusal to recog. factory delegates, etc.
SEGU	DEF	16	13	3	1.1	1.1	0.9	Segur. del trabajo	Safety
PRIV	DEF	7	5	2	0.5	0.4	0.6	Privatización	Protest against government plans/efforts to privatize a state corp.
HORI	DEF	5	5	0	0.3	0.4	0.0	Horas Insuficientes	Not enough work
Subtotal Def.		462	435	27	31.5	37.9	8.4		
SALA	OFF	735	508	227	50.1	44.3	70.7	Salarios	Demand for higher wages
ESCA	OFF	140	105	35	9.5	9.2	10.9	Escalafón	Dem. for pay proport. w/other workers, job reclassif., promot. rules
VENT	OFF	31	27	4	2.1	2.4	1.2	Ventajas	Fringe benefits (medical insu. etc.) except retirement benefits (JUBI)
POLI	OFF	26	21	5	1.8	1.8	1.6	Política	Protest against government laws or policies
PARI	OFF	12	4	8	0.8	0.3	2.5	Paritarias	Demand for return to collective bargaining
COND	OFF	9	8	1	0.6	0.7	0.3	Condic. de trabajo	Protest vs. poor working cond., poor raw mater., high produc. speeds
JUBI	OFF	9	2	7	0.6	0.2	2.2	Jubilación	Retirement benefits
ABAR	OFF	9	9	0	0.6	0.8	0.0	Abarc. del contrato	Demand that new categ. of wrkrs (e.g. temps) be covered by contract
REPU	OFF	8	8	0	0.5	0.7	0.0	Repud. la gerencia	Repudiation of management
SOLI	OFF	8	7	1	0.5	0.6	0.3	Solidaridad	Job action to show support of another group of strikers
DEMA	OFF	6	6	0	0.4	0.5	0.0	Demarcación	Demarcation dispute between unions about job categ. each will repre.
PART	OFF	3	1	2	0.2	0.1	0.6	Participación	Demand for more participation in running of enterprise
RECO	OFF	3	2	1	0.2	0.2	0.3	Recognición	Rcgnit. of union, vs. imposit. of trustees, halt embargo of union funds
TRAS	OFF	3	2	1	0.2	0.2	0.3	Traslados	Protest against company decision to move workers or workplace
OBSO	OFF	2	0	2	0.1	0.0	0.6	Obra Social	Demand for return of social security funds to union control
HORE	OFF	2	2	0	0.1	0.2	0.0	Horas Excesivas	Working day too long
Subt Off.		1006	712	294	68.5	62.1	91.6		
Subt. Known		1468	1147	321	100.0	100.0	100.0		
Total		2503	2136	367					

Note: Most strikes which should have been coded "DESC" were coded "SINF" before March 1985

Source: Documentación e Información Laboral, Informes Laborales, Various Issues

* Denominator is total number of total small strikes. ** Denominator is total number of big strikes.

TABLE 3

Correlations Among Independent Variables: Monthly

	Vacat	InPro	RWg	Empl	Prices
Vacat	1.00				
InPro	.18	1.00			
RWg	.26	.34	1.00		
Empl	.42	.21	.85	1.00	
Prices	-.03	-.31	.34	-.26	1.00
Elec	.00	-.03	-.01	-.11	
Ald	.31	.03	-.02	-.12	
Men	-.46	-.73	-.79	.41	

Correlations Among Independent Variables: Quarterly

	Vacat	InPro	RWg	Empl	Prices
Vacat	1.00				
InPro	-.38	1.00			
RWg	.13	.27	1.00		
Empl	.40	-.01	.85	1.00	
Prices	.07	-.49	-.52	-.22	1.00
Elec	.15	-.11	-.08	.17	
Ald	.47	.02	-.04	-.14	
Men	-.10	-.35	-.72	-.79	.38

Correlations Between Independent and Dependent Variables: Monthly

	TTot	TSma	TBig	TPar	ITot	ISma	IBig	IPar
Vacat	-.37	-.35	-.30	-.34	-.10	-.05	-.14	-.13
InPro	.27	.30	.04	-.05	-.03	.05	-.17	-.20
RWg	.16	.15	.15	-.09	.49	.54	.06	-.11
Empl	.11	.10	.10	-.11	.42	.48	.02	-.18
Prices	.05	.01	.05	-.01	-.15	-.13	-.11	-.16
Elec	.04	.02	.11	-.11	.04	.02	.03	-.06
Ald	.02	.15	-.10	-.10	.02	.03	-.03	-.10
Men	-.34	-.28	.10	.10	-.34	-.43	.08	.22

Correlations Between Independent and Dependent Variables: Quarterly

	TTot	TSma	TBig	TPar	ITot	ISma	IBig	IPar
Vacat	-.39	-.38	-.28	-.39	.09	.16	-.20	-.25
InPro	.44	.45	.25	.22	-.19	-.20	-.03	-.03
RWg	.20	.17	.27	-.07	.69	.68	.23	-.09
Empl	.14	.12	.14	-.23	.62	.66	.01	-.31
Prices	.11	.12	.04	.06	-.25	-.20	-.23	-.24
Elec	.12	.13	.04	-.05	.00	-.03	.11	-.02
Ald	.21	.26	-.07	-.15	.00	.03	-.10	-.17
Men	-.33	-.35	-.15	.16	-.40	-.48	.13	.38

TABLE 4.1
Regression Results: Monthly, Whole Economy

Dep Var	Const	Vacat	InPro	RWg	Empl	Prices	Elec	Ald	Men	Adj. R^2	F
TTot	-23.7 (25.0)	-15.1*** (3.87)	.388* (.230)	.203 (.138)		.083 (.057)				.46	4.49**
TSma	-23.5 (22.1)	-11.6*** (3.43)	.368* (.204)	.165 (.122)		.070 (.051)				.45	3.47*
TBig	-1.06 (5.91)	-3.71*** (1.08)	.020 (.054)	.047 (.032)		.015 (.016)				.21	3.31*
TPar	809000 (839000)	-438000** (162000)	413 (7570)	-629 (4560)		-838 (2350)				.13	2.26
TTot	-47.6 (38.8)	-14.3*** (3.99)	.451 (.229)		.518 (.445)	.068 (.056)				.44	3.85**
TSma	-38.5 (34.3)	-10.7*** (3.54)	.422* (.203)		.355 (.393)	.056 (.050)				.42	2.88*
TBig	-8.88 (8.68)	-3.61*** (1.12)	.031 (.053)		.158 (.099)	.012 (.015)				.20	3.08*
TPar	918000 (1210000)	-452000*** (169000)	333 (7450)		-2290 (13700)	-770 (2280)				.12	2.19
TTot	-5.37 (31.3)	-13.7*** (4.18)	.312 (.249)	.110 (.170)		.085 (.058)	-.927 (5.60)	1.99 (7.98)	-6.79 (7.01)	.42	1.90
TSma	-8.24 (27.6)	-10.5** (3.70)	.308 (.219)	.084 (.150)		.071 (.052)	-1.47 (4.97)	1.14 (7.04)	-5.85 (6.17)	.43	2.08
TBig	-.737 (7.88)	-.364*** (1.17)	.021 (.060)	.043 (.043)		.016 (.016)	.507 (1.60)	-.379 (2.05)	-.263 (1.73)	.18	1.84
TPar	197000 (1070000)	525000*** (171000)	3680 (7920)	2160 (5810)		-1050 (2320)	-156000 (237000)	-194000 (282000)	175000 (233000)	.11	1.67
TTot	14.2 (65.7)	-12.6*** (4.29)	.296 (.267)		-.095 (.705)	.077 (.058)	-1.31 (5.63)	2.08 (8.13)	-10.9 (9.46)	.43	2.33*
TSma	22.8 (57.5)	-9.17** (3.80)	.277 (.233)		-.264 (.616)	.066 (.051)	-1.86 (4.99)	.968 (7.14)	-11.0 (8.28)	.42	1.90
TBig	-15.1 (15.8)	-3.78*** (1.21)	.048 (.063)		.219 (.167)	.011 (.016)	.564 (1.61)	-.318 (2.05)	1.05 (2.30)	.17	1.75
TPar	499000 (2150000)	537000*** (180000)	4880 (8550)		10800 (22600)	-1280 (2290)	-150000 (239000)	-191000 (284000)	237000 (314000)	.11	1.60

Table 4.2

Regression Results: Monthly, Industry Only

Dep Var	Const	Vacat	lnPro	RWg	Empl	Prices	Elec	Ald	Men	Adj. R^2	F
Itot	1.08 (4.78)	-2.49** (1.02)	-.073* (.043)	.141*** (.026)		.007 (.014)				.34	8.58***
ISma	-3.24 (4.03)	-1.88* (.855)	-.035 (.036)	.129*** (.022)		.013 (.012)				.33	9.47***
IBig	4.31* (2.28)	-.598 (.488)	.037* (.020)	.011 (.012)		-.007 (.007)				.04	1.60
IPar	1060000*** (339000)	-438000** (162000)	-6360** (3010)	-2070 (1820)		-2670** (1070)				.07	2.89*
Itot	-12.9 (8.20)	-1.58 (1.17)	-.031 (.051)		.325*** (.093)	-.005 (.016)				.22	3.77**
ISma	-16.7** (6.97)	-1.12 (.979)	.003 (.043)		.306*** (.079)	.002 (.013)				.26	4.29**
IBig	-3.96 (3.26)	-.488 (5.13)	-.034* (.020)		.016 (.037)	.009 (.007)				.03	1.32*
IPar	1540000*** (466000)	-41600 (78600)	-6600* (2910)		-9330* (5280)	-2670 (1010)				.09	3.41*
Itot	-2.12 (6.67)	-2.37* (1.11)	-.080* (.049)	.138** (.036)		.007 (.015)	.130 (1.54)	.568 (1.76)	-.221 (1.45)	.28	4.74
ISma	.410 (5.60)	-1.56* (.924)	-.051 (.041)	.110 (.030)		.014 (.012)	-.161 (1.29)	-.539 (1.48)	-1.11 (1.21)	.32	5.36
IBig	1.68 (3.07)	-.812 (.516)	-.028 (.022)	.027 (.017)		.007 (.007)	.232 (.719)	.024 (.809)	-.900 (664)	.03	1.23
IPar	482000 (444000)	-122000 (78000)	-3960 (3200)	1060 (2400)		-2950** (1030)	-49100 (109000)	-57200 (117000)	188000* (96200)	.10	2.66*
Itot	-10.6 (15.6)	-1.50 (1.28)	-.041 (.062)		.308* (.165)	.005 (.016)	-.438 (1.69)	.604 (2.06)	-.324 (2.28)	.19	2.08
ISma	-7.85 (13.3)	.838 (1.07)	.020 (.053)		-.220 (.140)	.004 (.014)	-867 (1.42)	.543 (1.75)	-1.47 (1.94)	.24	2.42
IBig	-3.62 (6.11)	-.782 (.549)	-.017 (.024)		.094 (.064)	-.011 (.006)	.262 (.729)	-.008 (.815)	1.33 (8.98)	.02	1.12
IPar	300000 (868000)	-109000 (82500)	-4880 (8550)		-3360 (3410)	-3220*** (999)	-46500 (109000)	-61100 (116000)	213000* (128000)*	.10	2.83*

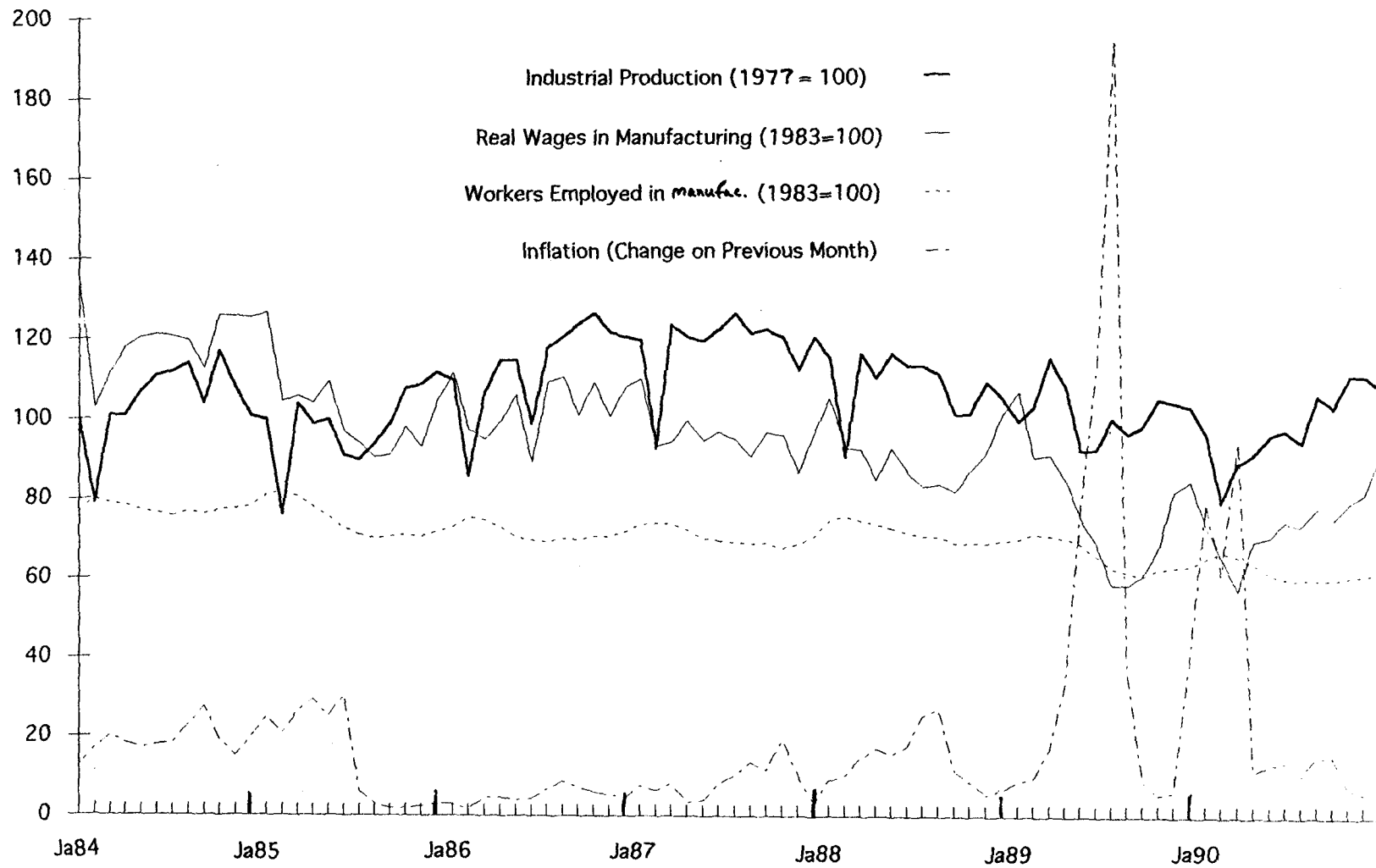## Table 4.3
Regression Results: Quarterly, Whole Economy

Dep Var	Const	Vacat	InPro	RWg	Empl	Prices	Elec	Aid	Men	Adj. R^2	F
TTot	-157* (89.6)	-24.6* (12.5)	1.58* (.753)	.904* (.442)		.309** (.103)				.41	4.92**
TSma	-152* (74.8)	-18.4 (11.4)	1.59* (.621)	.678* (.355)		.267* (.091)				.38	4.78**
TBig	-21.0 (23.1)	-5.19* (2.83)	.131 (.200)	.226* (.126)		-.040 (.024)				.27	2.39
TPar	-252000 (3560000)	-851000 (506000)	-20500 (29800)	1690 (17400)		3090 (4120)				.07	1.23
TTot	-273* (118)	-30.6* (13.4)	1.77* (.735)		2.63* (1.23)	.252** (.093)				.42	5.06**
TSma	-245** (95.3)	-24.0* (12.0)	1.71** (.600)		2.11* (.98)	.227* (.082)				.40	5.21**
TBig	-42.6 (34.0)	-5.88* (3.15)	.203 (.202)		.516 (.372)	.024 (.022)				.23	2.04
TPar	474000 (4690000)	-798000 (544000)	-21100 (29300)		-8800 (3770)	-2800 (3770)				.07	1.24
TTot	-50 (113)	-29.3* (12.6)	1.17 (.873)	.335 (.640)		.304** (.107)	-17.6 (17.6)	14.9 (24.5)	-35.5 (23.3)	.41	3.18*
TSma	-33.9 (96.9)	-24.0* (.11.2)	1.08 (.732)	.118 (.519)		.267** (.093)	-18.9 (15.9)	17.5 (21.3)	-34.6 (19.2)	.40	3.24*
TBig	-26.8 (28.1)	-4.92 (3.02)	.183 (.222)	.229 (.168)		.039 (.026)	1.37 (4.17)	-4.81 (5.99)	.910 (6.02)	.19	1.31
TPar	-5100000 (3980000)	-720000 (543000)	-53700* (29000)	14100 (19000)		3910 (3980)	-116000 (793000)	-1450000 (909000)	870000 (747000)	.08	1.59
TTot	.053 (227)	-28.0* (14.2)	1.17 (90.5)		-.200 (2.54)	.282* (.100)	-19.0 (17.8)	14.7 (24.6)	-46.1 (32.5)	.40	3.13*
TSma	32.9 (191)	-22.3* (12.2)	.993 (.765)		-.627 (2.08)	.259** (.087)	-20.6 (16.0)	18.0 (21.3)	-44.8 (27.1)	.40	3.25
TBig	-60.5 (57.5)	-6.01* (3.53)	.271 (.228)		.663 (.655)	.024 (.024)	1.53 (4.29)	-5.59 (.6.07)	2.54 (8.27)	.15	1.16
TPar	-7470000 (7810000)	-823000 (570000)	57700 (31600)		46900 (80000)	2900 (3830)	-71200 (826000)	-1500000 (.924000)	1020000 (1100000)*	.07	1.48

Table 4.4.
Regression Results: Quarterly, Industry Only

Dep Var	Const	Vacat	InPro	RWg	Empl	Prices	Elec	Ald	Men	Adj. R^2	F
ITot	27.1 (17.3)	-5.38 (3.31)	-.536*** (.141)	.547*** (.077)		.005 (.023)				.61	14.8***
ISma	12.9 (16.3)	-3.29 (3.24)	-.413*** (.132)	.508*** (.072)		.007 (.022)				.56	13.3***
IBig	9.47 (8.98)	-1.90 (1.24)	-.078 (.076)	.036 (.045)		-.011 (.010)				.09	1.14
IPar	2910000* (1470000)	-318000 (213000)	-15100 (12300)	-6700 (7150)		-3890 (1730)				.11	1.80
ITot	-13.0 (33.5)	-7.50* (4.00)	-.512* (.210)		1.31* (.348)	-.053* (.028)				.47	6.49***
ISma	-32.5 (26.9)	-6.19 (3.85)	-.397** (.170)		1.34*** (.272)	-.032 (.025)				.47	7.62***
IBig	9.60 (12.5)	-1.75 (1.35)	-.065 (.077)		.028 (.132)	-.014 (.009)				.07	0.95
IPar	4460000** (1780000)	-230000 (225000)	-16700 (11200)		-29200 (18400)	-3460 (1520)				.16	2,22
ITot	25 (18.5)	-5.65* (2.99)	-.606*** (.132)	.629*** (.083)		-.008 (.019)	6.07 (4.38)	7.20 (4.32)	3.82 (3.45)	.62	15.4***
ISma	31.0* (17.4)	-4.65 (2.85)	-.565*** (.124)	.486*** (.078)		.006 (.018)	2.55 (4.17)	8.67* (4.08)	-2.14 (3.26	.55	14.1***
IBig	-2.42 (9.70)	-1.29 (1.20)	-.051 (.072)	.117* (.049)		-.013 (.010)	3.52* (1.73)	-1.55 (2.17)	4.64** (1.86)	.23	2.00
IPar	-205000 (1480000)	-202000 (208000)	-2470 (10700)	9070 (6980)		-3140* (1480)	390000 (304000)	-431000 (339000)	868000*** (276000)	.27	2.79
ITot	-62.9 (57.9)	-8.73* (4.22)	-.498* (.234)		1.96*** (.593)	-.060* (.028)	5.34 (6.13)	5.94 (6.85)	9.36 (8.13)	.46	4.64***
ISma	32.9 (191)	-22.3* (12.2)	.993 (.765)		-.627 (2.08)	.259** (.087)	-20.6 (16.0)	18.0 (21.3)	-44.8 (27.1)	.40	3.25
IBig	-26.9 (19.3)	-2.16 (1.30)	-.004 (.078)		.437* (.205)	-.020* (.009)	3.90* (1.77)	-2.09 (2.22)	6.58* (2.72)	.21	1.81
IPar	-2150000 (2930000)	-277000 (217000)	839 (11800)		35000 (29900)	-3910** (1440)	443000 (317000)	-474000 (348000)	1030000** (412000)	.27	2.62

FIGURE 1

Industrial Production (1977 = 100) ——

Real Wages in Manufacturing (1983=100) ——

Workers Employed in manufac. (1983=100) - - -

Inflation (Change on Previous Month) — -

Argentina: Main Economic Indicators 1984-1990

FIGURE 2

Number of Strikes: A Comparison of Four Data Sources

	Months Rcrded	Mean # Strikes	Range (lo/hi)	Stndrd Devtn	rTend	rBime	rMini	rUniu
Tendencias	65	38.4	12/73	14.9	1.00	.81	.81	.68
Bimestre	54	38.7	11/71	16.6	.81	1.00	.59	.74
Ministerio	19	53.2	31/78	12.8	.81	.59	1.00	57
Union Nueva	60	49.5	6/121	28.1	.68	.74	.57	1.00

Legend: -- Bimestre   — Unión Nueva Mayoría   ■ Ministerio de Trabajo   □ Tendencias Económicas
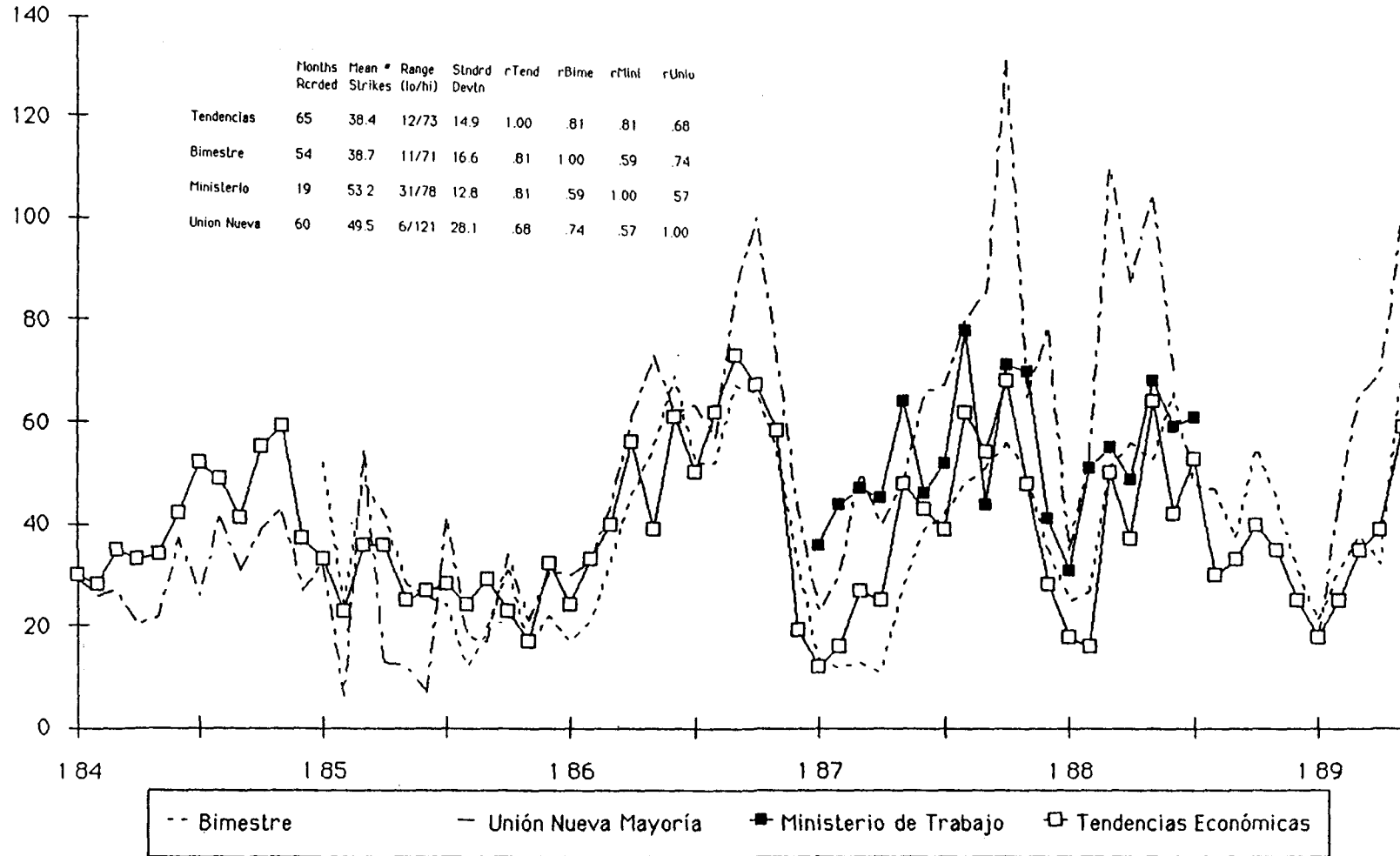
Number of Total, Big, and Small Strikes in Argentina, January 1984 to June 1991

FIGURE 3
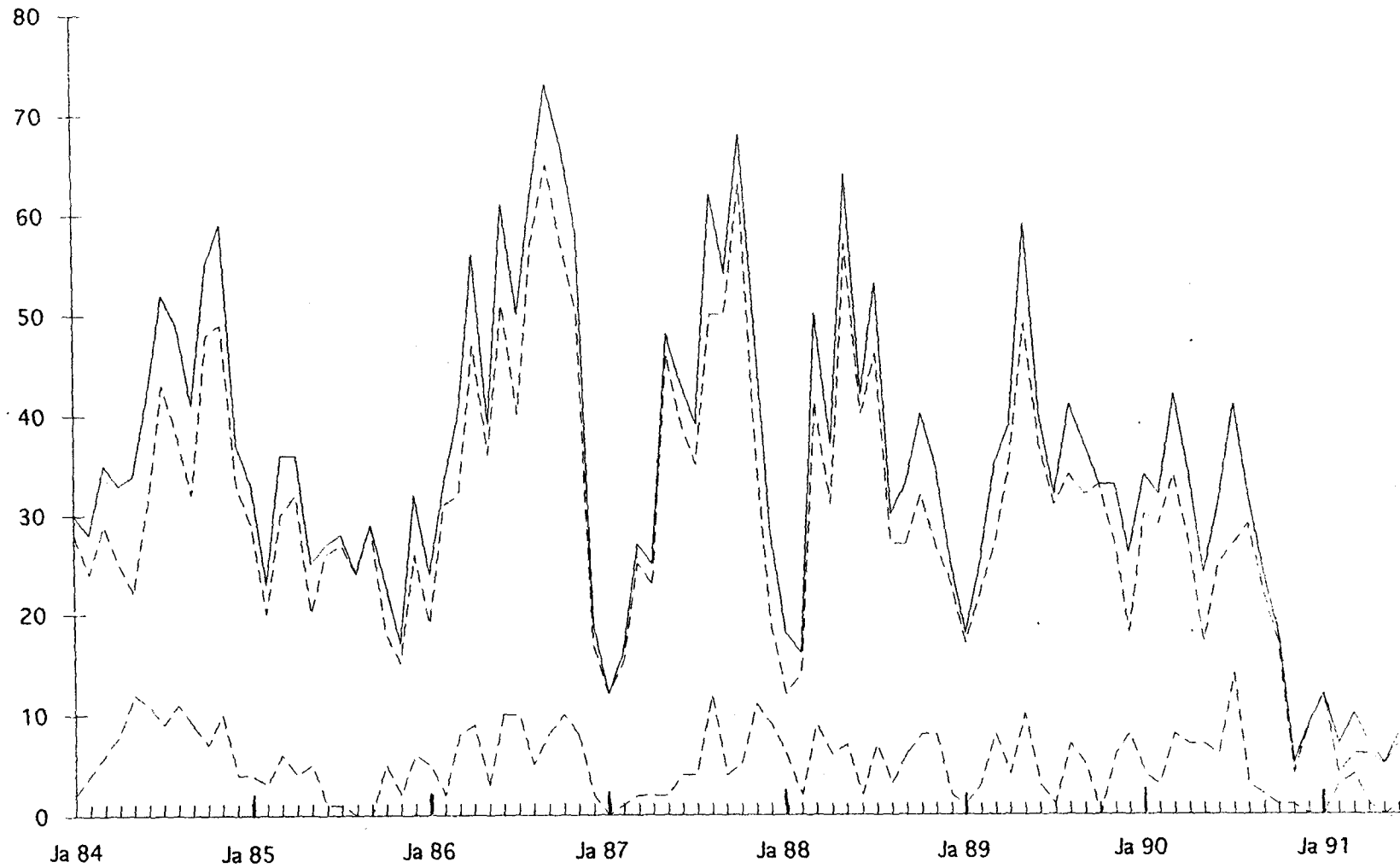
Appendix 1

Descriptive Statistics: Strikes in Argentina, April 1984 - December 1990

Monthly

	Number	Mean	Range	Standard Deviation
Total (Whole Economy)	2974	36.7	5/73	14.6
Small (Whole Economy)	2542	31.4	4/65	12.8
Big (Whole Economy)	432	5.3	0/14	3.5
Strikers (Whole Economy)	57,625,785	711,429	59,901/2,439,525	510,263
Total (Industry)	515	6.4	0/17	3.8
Small (Industry)	420	5.2	0/13	3.8
Big (Industry)	95	1.2	0/8	1.6
Strikers (Industry)	9,729,216	120,114	0/1,428,080	261,388

Note: Descriptive statistics for monthly data do not include January - March 1984 because these months could not be incorporated into the moving average for industrial production.

Quarterly (includes Jan - March 1984)

	Number	Mean	Range	Standard Deviation
Total (Whole Economy)	3116	103.9	20/185	39.7
Small (Whole Economy)	2663	88.8	18/162	34.4
Big (Whole Economy)	453	15.1	1/ 31	10.4
Strikers (Whole Economy)	59,562,112	19,85,404	432,557/4,379,366	1,122,251
Total (Industry)	579	19.3	3/56	11.2
Small (Industry)	477	15.9	1/53	10.4
Big (Industry)	102	3.4	0/ 8	2.7
Strikers (Industry)	10,017,838	1,465,510	4,800/1,465,510	462,962

Appendix 2

Number of Strikes in Argentina, 1984-1989
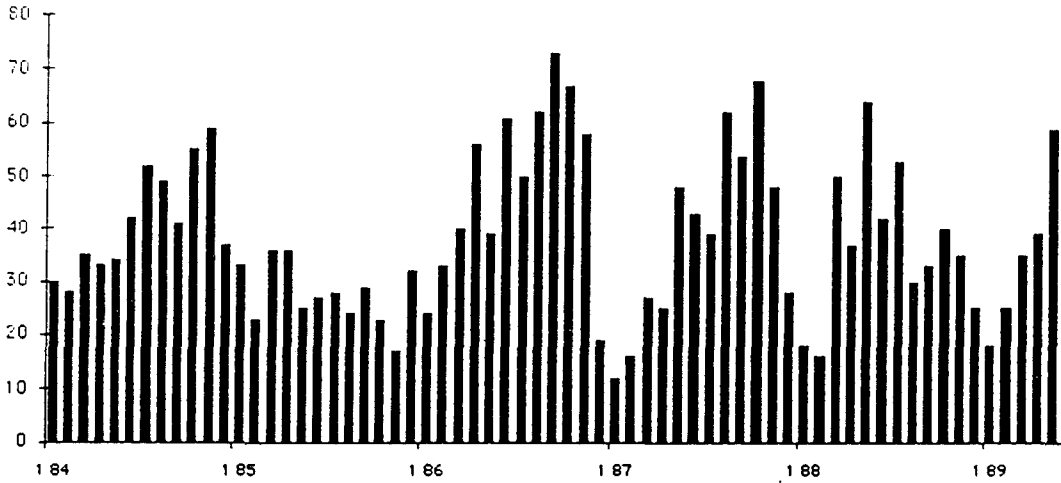
Number of Strikers in Argentina, 1984-1989

CGT General Strikes
(not included in count,
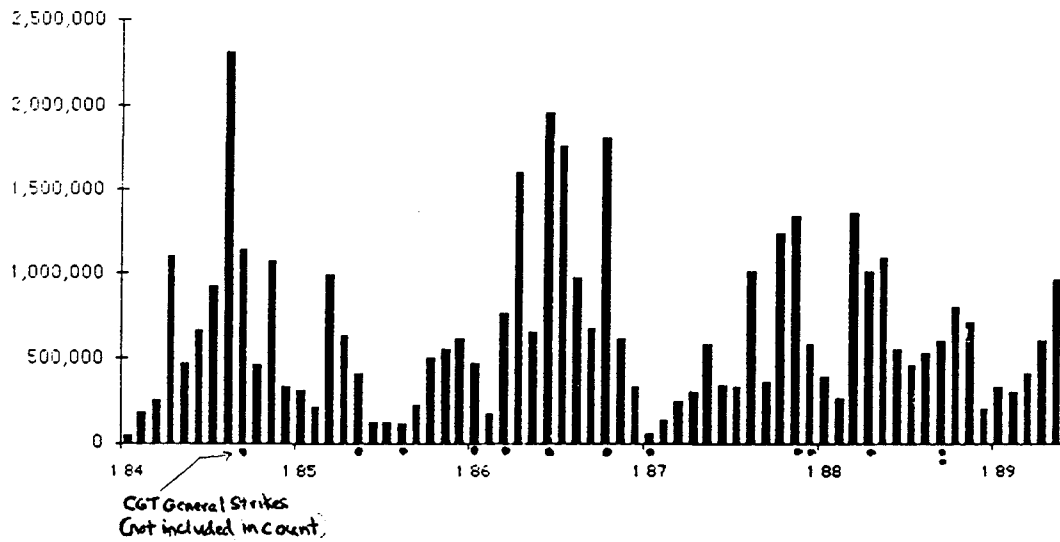
Number of Days Lost to Strikes in Argentina, 1984-1989
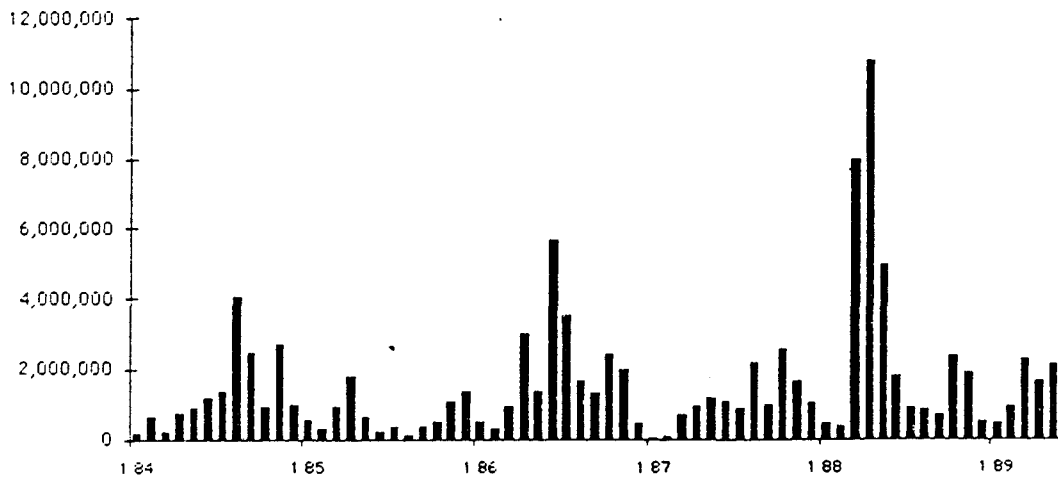
Appendix 3

Strikes By Economic Sector, January 1984-May 1989

Abbr.	Sector	Strikes	Strikers	Av. Dur.	Industry	Industry (Eng.)
DOCE	SEPU	220	8,314,600	5.67	Docentes	Teachers
ESTA	ADMI	356	7,119,850	3.50	Estatales	Public Admin.
BANC	FINA	110	3,725,270	1.73	Bancarios	Bank Clerks
META	MANU	158	2,892,714	7.02	Metalúrgicos	Metal Workers
FERR	TRPU	96	2,137,775	1.67	Ferroviarios	Railway Workers
SANI	SEPR	106	2,104,880	3.65	Sanidad	Priv. Hospitals
CONS	CONS	85	1,556,343	6.49	Construcción	Construction
MUNI	ADMI	143	1,413,890	3.97	Muncipales	Municipal Empl
JUDI	ADMI	80	1,132,000	2.10	Judiciales	Court Clerks
TELF	COMM	27	892,300	1.70	Telefónicos	Telephones
NODO	SEPU	40	864,010	3.33	No Docentes	School Staff
ALIM	MANU	23	752,315	7.10	Alimentación	Food Packaging
CORR	SEPU	26	592,800	2.55	Correos y Telecom.	Post Office
TRAN	TRPR	100	538,698	2.90	Transporte	Bus Drivers
TEXT	MANU	28	525,042	5.37	Textiles	Textiles
ESTS	SEPU	35	431,590	3.10	Estatales	Public Services
LUZY	SEPU	16	378,220	2.09	Luz y Fuerza	Light and Power
MARI	TRMX	56	354,096	5.06	Marítimos	Sailors
MECA	MANU	22	312,740	2.60	Mecánicos	Auto Workers
ESTI	INPU	62	292,440	3.52	Estatales	Public Industry
PETR	MANU	24	215,720	2.00	Petrol. del Estado	Petroleum (State)
PAPE	MANU	40	202,126	4.07	Papeleros	Paper Workers
SEGU	FINA	6	185,000	0.81	Seguros	Insurance
GAST	SEPR	4	172,000	1.25	Gastronomicos	Hotel/Restaurant
PORT	SEMX	41	160,800	2.54	Portuarios	Dock Workers
CARN	MANU	49	150,379	10.85	Carne	Meatpackers
AZUC	MANU	43	146,780	6.42	Azucareros	Sugar Workers
OBRA	SEPU	21	146,000	1.73	Obras Sanitarias	Water Works
VITI	MANU	13	125,354	8.00	Vitivinicolas	Winery Workers
COME	SEPR	4	122,600	1.25	Comercio	Retail Clerks
CALZ	MANU	8	108,750	3.91	Calzado	Footwear
MEDI	SEPR	50	108,300	2.53	Médicos	Doctors
VIAL	SEPU	14	105,900	3.20	Vialidad	Road Workers
MINE	EXTR	18	104,280	6.32	Mineros	Miners
PETP	MANU	9	87,940	3.90	Petrol. Privados	Petroleum (Priv.)
GRAF	MANU	16	79,460	3.67	Graficos	Typesetters
QUIM	MANU	16	77,385	3.53	Quimicos	Chemical Workers
GASD	SEPU	9	72,600	2.93	Gas del Estado	Gas Works
CAMI	SEPR	17	68,180	4.31	Camioneros	Truckers
GARA	SEPR	5	63,400	1.00	Garajistas	Parking Lots
POLI	MANU	40	53,600	2.99	Policia	Police
PANA	MANU	4	53,500	2.75	Panaderos	Bakers
PLAS	MANU	9	51,760	6.83	Plasticos	Plastics Workers
TELG	COMM	5	46,000	0.93	Telegrafos	Telegraphs
AERO	TRMX	33	42,861	1.80	Aeronauticos	Airlines
TAXI	TRPR	6	42,100	1.06	Taxistas	Taxi Drivers

Abbr.	Sector	Strikes	Strikers	Av. Dur.	Industry	Industry (Eng.)
FRUT	MANU	5	38,000	4.90	Fruticolas	Fruit Packers
MADE	MANU	2	33,400	0.94	Madereros	Carpenters
VIDR	MANU	14	30,200	4.02	Vidrio	Glass Workers
FARM	MANU	3	29,000	1.00	Farmacia	Pharmaceuticals
CERV	MANU	4	27,000	1.19	Cerveceros	Beer Workers
RADI	COMX	21	25,160	1.61	Radiodifusión	Radio Employees
DESC		33	23,825	3.41	Desconocido	Sector Unknown
JERA	ESTA	9	18,600	1.93	Jerarquicos	Pub. Sect. Supv
PREN	SEPR	16	18,460	4.55	Prensa	Journalists
TABA	MANU	2	16,000	1.00	Tabaco	Tobacco
AUTO	SEPR	6	14,310	1.83	Automovil Club	Auto Club Emp
ADUA	SEPU	3	11,500	5.00	Aduanas	Customs Agents
AGUE	SEPU	9	9,700	1.42	Agua y Energia	Water and Energy
PESC	EXTR	8	7,940	7.25	Pescadores	Fishing Fleet
ACTO	SEPR	1	6,000	1.00	Actores	Actors
TELV	COMM	7	4,450	1.98	Televisión	Television
NAVA	MANU	6	4,100	4.08	Navales	Shipyard Workers
FORE	EXTR	1	3,600	1.00	Forestales	Loggers
CUER	MANU	8	3,007	9.38	Cueros	Leather Workers
TURF	SEPR	3	2,800	2.83	Turf	Turf
CERA	MANU	8	2,745	9.88	Ceramistas	Ceramics
LADR	CONS	1	2,300	2.00	Ladrilleros	Bricklayers
CINE	SEPR	7	2,240	1.11	Cinematograficos	Film Industry
MAIZ	MANU	1	2,000	2.50	Maiz (Refinerias)	Cornflour
GRAN	MANU	1	1,600	0.75	Recib. de Granos	Grain Silos
JABO	MANU	2	1,600	1.75	Jaboneros	Soap/Detergent
NEUM	MANU	1	1,000	0.13	Neumaticos	Tire Workers
GUAR	SEPR	3	900	3.33	Guardavidas	Lifeguards
MUSI	SEPR	1	800	0.63	Musicos	Musicians
AGEN	MANU	5	611	2.40	Agentes Prop. Medic	??
VEST	MANU	1	600	8.00	Vestido	Garment Workers
FUTB	SEPR	1	500	5.00	Futbolistas	Prof. Soccer
AGUA	MANU	3	450	3.33	Aguas Gaseosas	Carbonated Bevs.
BURS	FINA	2	395	3.05	Bursatiles	Stock Exch. Empl.
LOCU	SEMX	1	250	1.00	Locutores	Newscasters
TANI	EXTR	1	250	20.00	Tanino	Tannin
FOSF	MANU	1	120	1.00	Fosforos	Match Workers
Totals		2,496	39,469,761	3.52 (Avg.)		

Appendix 4

NUMBER OF STRIKES

	Private	Public	Mixed	Unknown	Total
1984	237	166	82	9	494
1985	170	104	54	3	331
1986	190	240	142	9	581
1987	157	181	118	7	463
1988	117	203	118	4	442
Total	871	894	514	32	2,311

NUMBER OF STRIKERS

	Private	Public	Mixed	Unknown	Total
1984	3,216,062	3,115,170	2,110,640	15,320	8,457,192
1985	1,265,448	1,763,245	1,215,920	335	4,244,948
1986	3,876,389	3,225,150	4,128,721	4,510	11,234,770
1987	976,131	1,726,950	3,007,556	2,670	5,713,307
1988	988,284	3,790,960	2,641,790	810	7,421,844
Total	10,322,314	13,621,475	13,104,627	23,645	37,072,061

AVERAGE DURATION IN DAYS OF STRIKES AND STOPPAGES

	Private	Public	Mixed	Unknown	Average
1984	5.48	2.89	3.26	2.64	4.19
1985	5.39	2.61	3.08	6.33	4.12
1986	5.37	3.37	3.60	3.11	4.07
1987	4.35	3.11	3.78	2.96	3.67
1988	4.85	2.97	4.57	4.00	3.90
Average	5.09	2.99	3.66	3.81	3.99

WORKING DAYS LOST TO STRIKES AND STOPPAGES

	Private	Public	Mixed	Unknown	Total
1984	5,589,776	5,585,891	5,284,545	9,470	16,469,682
1985	2,161,138	3,238,125	2,891,440	2,215	8,292,918
1986	10,122,502	5,958,610	7,054,561	18,420	23,154,093
1987	1,645,434	3,582,253	7,862,923	5,168	13,095,778
1988	1,674,685	11,447,021	20,425,650	3,430	33,550,786
Total	21,193,534	29,811,900	43,519,120	38,703	94,563,257

Calculated From : McGuire, James W. "Strikes in Argentina: A Research Note"