



Economic Research Paper

First Contract Arbitration: Effects on Bargaining and Work Stoppages

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Abstract

Newly certified unions often have a difficult time negotiating a first agreement. The *Employee Free Choice Act* contains a proposal to reform the *National Labor Relations Act* to provide for First Contract Arbitration (FCA). This article uses a panel of Canadian jurisdictions which have introduced FCA at different times over several decades, to address three questions: (1) How does first contract arbitration (FCA) affect the incidence of first agreement work stoppages? (2) Does FCA encourage or discourage collective bargaining involving first agreements? (3) Does FCA influence the duration of first agreement work stoppages? I find that FCA reduces first agreement work stoppage incidence by at least 50 percent. Despite this, FCA is not accessed frequently and it is even rarer for a first contract (in whole or in part) to be imposed. Together these results suggest that FCA encourages collective bargaining by creating an incentive for the parties to bargain in good faith and negotiate an agreement. Finally, FCA has no statistically significant impact on the duration of first agreement work stoppages.

JEL Codes: J52, J58, K31

Key Words: First contract arbitration, Employee Free Choice Act, work stoppages, collective bargaining, public policy

Overview and Motivation

One challenge facing the union movement in the United States today is the ability to successfully negotiate a first collective agreement. Table 1 provides evidence that from 1996 to 2004 the percent of newly certified private sector unions that had not succeeded in negotiating a first collective agreement two fiscal years after certification ranged from 30 to 45 percent. This is not a new phenomenon, earlier research (Weiler (1984), Cooke (1985), Bronfenbrenner (1994) and Pavy(1994)) also provides evidence that it can be hard for a newly certified bargaining unit to obtain a first agreement.¹

Why is the negotiation of a first collective agreement so difficult? First, the magnitude of the task is large – the parties are negotiating and codifying all the terms and conditions of employment not simply modifying an existing collective agreement. Second, this task occurs in the context of a bargaining relationship that is immature. Third, the negotiators are often inexperienced. Fourth, these problems may be compounded by hostility that developed during organizing that spills over into negotiations. Fifth, bargaining unit members may have unrealistic expectations concerning what the union will be able to achieve in a first agreement. Finally, and perhaps most importantly, even after a union has been certified, an employer determined to prevent unionization may use various strategies, both legal and illegal, at the bargaining table to resist unionization.

¹ Weiler (1984:353) shows the success rate for obtaining first contracts in the U.S. private sector declined from 86% in 1955 to 63% in 1980. Cooke (1985:170) finds that 23 percent of unions certified in Indiana NLRB region 25 in 1979/80 had not succeeded in negotiating a first contract by 1982. Pavy (1994:115): reports the experience of AFL-CIO unions negotiating first agreements based in survey evidence: 22 percent of unions elected in 1970 had no first agreement in 1975, 39 percent of unions elected in 1982 had no first agreement in 1988, and 35 percent of unions elected in 1987 had no first agreement in 1993. Bronfenbrenner (1994:85) finds that 20 percent of a sample of AFL-CIO unions, certified between July 1986 and June 1987 did not succeed in obtaining a first agreement.

*“You haven’t lost until you sign a contract..... Consultants advise management on how to stall.... – bargaining to the point of boredom. Delays in bargaining allow more time for labour turnover, create employee dissatisfaction with the union and prevent signing a contract... One consultant told seminar attendees that bargaining to impasse provided the ‘perfect situation’ for the employer to trigger a decertification campaign, because the frustration, the hopelessness, the failure of the union to win a new contract will lead the workers to vote against their own organization.”*²

There is little to discourage employers from bargaining in bad faith. Bad faith is hard to prove and even if the case is made, the employer is ordered to ‘cease and desist’, return to the bargaining table and bargain in good faith. There are no punitive damages.³ Cooke (1984) and Bronfenbrenner (1994) provide empirical evidence that unfair labour practices have a substantial negative effect on the ability of a union to successfully negotiate a first agreement.⁴ When bargaining reaches an impasse a union has the option of calling a strike. Strikes that occur in this context fundamentally concern union recognition and can be very bitter and protracted disputes. Under these circumstances, in a legal environment that permits employers to hire permanent replacement workers, the risks associated with calling a strike are very high.

Over the years advocates of U.S. labor law reform have proposed first contract arbitration (FCA) be introduced to address the challenges of negotiating a first agreement.⁵ FCA, in essence, provides as an *option* that if an impasse is reached during the negotiation of a *first* agreement the union or employer can request a third party become involved who has the power to determine the terms and conditions of the collective agreement. The most recent call for

² Logan (2002:209).

³ The order to bargain in good faith can be filed with the courts. If it is proved that the employer is continuing to bargain in bad faith the employer can be convicted of contempt of court. A conviction can result in serious damages to the employer. However this is such a difficult, expensive and time-consuming process it is rarely pursued.

⁴ Cooke (1984:175) shows that the refusal to bargain in good faith and discrimination against union activists reduce the probability of successfully negotiating a first agreement by 32-35 percentage points. Bronfenbrenner (1994:85) finds that surface bargaining reduces the probability of achieving a first agreement by 24 percent.

⁵ Recently there has been pressure to introduce FCA in Alberta, a Canadian jurisdiction that currently does not have this legislation (Taras (2006)).

reform of the *National Labor Relations Act*, the *Employee Free Choice Act* (EFCA), contains a provision in Section 3 for facilitating initial collective bargaining agreements. The provision requires the parties meet to negotiate within ten days of the request of the newly certified union and to make every reasonable effort to reach agreement. If, after 90 days, they fail to reach agreement either party may notify the Federal Mediation and Conciliation Services (FMCS) of the dispute and request mediation. If, after 30 days, the FMCS is unable to get the parties to reach agreement the dispute is referred to an arbitration panel to settle the terms and conditions of the first agreement. The agreement is binding for two years. This is an ‘automatic’ form of FCA where arbitration is accessed based on time limits for each stage of negotiation. It is not necessary to prove that bargaining in bad faith has occurred. The EFCA was passed by the House of Representatives on March 1, 2007 and is currently before the Senate.⁶

FCA is expected to create a number of changes in industrial relations. First, it makes it more likely that workers who have chosen unionization achieve a first agreement.⁷ Second, it is expected that the existence of a first agreement will normalize collective bargaining and establish the basis for a long-term collective bargaining relationship. Third, by providing an alternative dispute mechanism FCA is likely to reduce the number of work stoppages involving first agreements. It is unclear whether FCA will encourage or discourage collective bargaining. On the one hand, FCA may encourage bargaining if it acts as a deterrent to bargaining in bad faith by providing the parties with an incentive to reach agreement on their own rather than face the prospect of a third party imposing the terms and conditions of employment. On the other hand,

⁶ To read the full text of Section 3 of the *Employee Free Choice Act* see <http://www.govtrack.us/congress/billtext.xpd?bill=h110-800>

⁷ In general newly certified bargaining units are not guaranteed to obtain a first agreement simply because FCA is available. There are number of different types of FCA – some require evidence of bad faith bargaining or dysfunctional bargaining before a dispute can be referred to arbitration. For example, Weiler (1980, 1984) proposed the introduction of FCA as an exceptional remedy to provide a disincentive to the unfair practice of bargaining in bad faith. There are a number of Canadian jurisdictions with this more restrictive form of FCA.

FCA may discourage bargaining if it creates a ‘narcotic’ or ‘chilling’ effect on negotiations whereby the parties rely on FCA to determine their first contract rather than engaging in the difficult process of achieving an agreement on their own. Finally, FCA may reduce the duration of work stoppages involving first agreements because it provides a mechanism for timely resolution to a dispute.⁸

The purpose of this research is to provide empirical evidence to answer three questions: (1) How does FCA affect the incidence of first agreement work stoppages? (2) Does FCA encourage or discourage collective bargaining involving first agreements? (3) Does FCA influence the duration of first agreement work stoppages? The questions are answered using a variety of empirical techniques and Canadian data. Unlike the U.S., Canada has considerable experience with FCA. Currently eight of eleven Canadian jurisdictions, covering more than 80 percent of the labor force, have FCA. There is considerable variation over time and across jurisdictions in the use of FCA. Other researchers (for example Chaison and Rose (1994), Freeman (1988) and Riddell(1993)) have argued that the Industrial Relations System in Canada while not identical to that of the U.S. is similar enough that Canadian experience can inform U.S. policy debate.⁹

Cross-sectional time-series results reveal that FCA reduces first agreement work stoppage incidence by at least 50 percent. Descriptive statistics and time-series plots by jurisdiction indicate that FCA is not accessed frequently and it is even rarer for a first contract (in whole or in part) to be imposed. Since FCA is associated with a substantial decrease in work stoppage

⁸ In Canadian jurisdictions once an application for FCA is filed any work stoppage in progress must stop. This provision is not explicitly included in the EFCA.

⁹ Labor laws concerning industrial relations in Canadian jurisdictions are modeled on U.S. labor law. Bargaining is decentralized. There is an emphasis on economic rather than political objectives in negotiations. Bargaining takes place in the context of a mixed, free enterprise economy. Similar labor market shocks have affected both the U.S. and Canadian economies.

incidence and it is not accessed frequently the results suggest that FCA creates an incentive for the parties to reach agreement and therefore encourages collective bargaining. Hazard analysis (using Kaplan-Meier descriptive plots and estimation of Cox-Proportional Hazard models) reveals that FCA has no statistically significant impact on the duration of first agreement work stoppages.

The remainder of the paper is organized into four sections. Each of the first three sections focuses on one of the empirical questions: (1) How does FCA affect the incidence of work stoppages? (2) Does FCA encourage or discourage bargaining? (3) How does FCA affect the duration of first agreement work stoppages? Within each of these sections, necessary background information is provided, the empirical methodology used to answer the question is discussed, the data are described and the results are presented. The fourth section recaps the results and discusses the ‘lessons learned’ from Canadian experience.

How does FCA affect the incidence of first agreement work stoppages?

Background

This is the first study to provide empirical evidence concerning the affect of first contract arbitration on the incidence of first agreement work stoppages.

In Canada labor law is in the jurisdiction of the provinces. Table 2 shows there is considerable variation over time and across jurisdictions in the use of FCA. British Columbia was the first jurisdiction to introduce FCA in 1973, followed by; Quebec (1977), the federal jurisdiction (1978), Manitoba (1982), Newfoundland (1985), Ontario (1986), Saskatchewan (1994) and Prince Edward Island (1995). Three provinces do not have FCA; Alberta, Nova

Scotia and New Brunswick. The variation in FCA across jurisdictions and over time permits empirical analysis to identify the affect of FCA on first agreement work stoppages.¹⁰

Empirical Methodology

The empirical analysis is not placed within an explicit theoretical framework for a number of reasons. First, there is no generally accepted model of work stoppages. Second, theories that exist, for example the asymmetric information or joint-cost models, do not explicitly include the role of FCA and attempts to incorporate this and other policy variables into these models generally yield ambiguous predictions of their impact on work stoppages. Therefore it is not possible to use these empirical results to test the validity of a particular model. In any case the primary objective of this paper is to provide empirical evidence that will inform the policy debate concerning FCA and not test the validity of a particular theory.

Cross-sectional time-series analysis is used to estimate a reduced form equation that takes the following general form:

$$(1) \quad \text{incidence}_{it} = f(\text{FCA}_{it}, \text{control variables}_{it})$$

where 'i' indicates the jurisdiction, and 't' indicates year. Incidence is defined as:

$$(2) \quad \text{incidence}_{it} = \frac{\text{number of first agreement work stoppages}_{it}}{\text{number of certifications granted}_{it}}$$

Incidence measures the proportion of newly certified bargaining units that experience a work stoppage when negotiating the first collective agreement.¹¹ FCA_{it} is a dummy variable that

¹⁰ There is not enough variation across Canadian jurisdictions in the use of different types of FCA to permit the analysis to estimate the affect of each type of FCA on incidence.

takes a value of one when the legislation is in effect, and zero when it is not. In the year in which the legislation comes into effect the variable indicates the proportion of the year the legislation is in force. If FCA affects certification success rates the coefficient on FCA may be biased. Earlier empirical research finds no statistically significant relationship between FCA and certification success rates (Johnson 2002a:356).

Control variables are included that take into account other legislation that could affect incidence.¹² The first group of legislative control variables concern rules that apply prior to a legal work stoppage occurring; mandatory strike vote, employer-initiated strike vote, compulsory conciliation (all forms) and cool-off period. The second set of legislative control variables concern the laws governing the use of replacement workers during a work stoppage; ban on temporary replacement workers (anti-scab legislation), ban on permanent replacement workers, reinstatement rights and a ban on professional strikebreakers. A final group of legislative variables take into account laws that pertain to difficult bargaining issues that can result in work stoppages; compulsory dues check-off and technological change re-opener clauses. Table 2 presents details concerning when the legislation is in effect for each jurisdiction. The Appendix provides a brief description of each type of labor legislation.

Cross-sectional time-series analysis permits the use of province fixed effects, year effects and province-specific time trends. These variables allow the analysis to control for a wide range of unobserved factors that can affect work stoppage incidence. Province fixed effects control for

¹¹ Incidence takes values between zero and one and there are a substantial number of zeros in the data. This suggests it might be wise to use an empirical technique that takes censoring into account. However it is not possible to estimate a conditional cross-sectional time-series tobit model if it includes fixed effects. Cross-sectional time-series estimation that does not take censoring into account produces predicted values of incidence that lie within the zero-one interval more than 95 percent of the time for all specifications. Grouped logit maximum likelihood estimation confirm that FCA has a negative, statistically significant impact on work stoppage incidence for each specification.

¹² The policy variables included as controls are similar to those used in Gunderson, Kervin and Reid (1985). This study examined of impact of legislation on work stoppage incidence involving re-negotiation of a collective agreement.

any differences across jurisdictions that do not change over time, for example, differences in industry base or attitude toward unions. Year effects take into account differences over years that are similar across jurisdictions, for example, economy-wide changes in macroeconomic conditions. Finally province-specific time trends control for changes that occur linearly over time within a jurisdiction, for example, changes in provincial union density or structural changes in a province's economy.

Data

Data on certifications granted are available on an annual basis in the *Annual Reports* of the Labor Boards (or equivalent) in each jurisdiction. These data, originally available in Martinello (1996) have been updated and extended in Johnson (2007). Data on work stoppages in Canada are available from Human Resources and Social Development Canada (HRSDC) Workplace Information Directorate, *Work Stoppages Database*. The *Database* provides a record of any work stoppage that results in a minimum of 10 person days lost and includes (among other things) information on jurisdiction, province, industry, whether the work stoppage occurred during the negotiation of a first agreement and date the work stoppage began.

The cross-sectional time-series analysis uses data at the province-year level of aggregation. In order to create the measure of incidence used in the analysis it is necessary to determine the number of first agreement work stoppages that occur in each jurisdiction and year. The first step in this process is to select individual work stoppages involving first agreements from the *Work Stoppages Database* that match the coverage of the data available from the *Annual Reports* of the Labor Boards. Therefore work stoppages involving workers covered by the Public Service Staff Relations Act are not included. Work stoppages listed as being in

‘other’, ‘Canada-wide’, or ‘multiple locations’ that are not in the federal jurisdiction are dropped because it is impossible to determine what legislation applies to these stoppages or to match these work stoppages with data on certifications granted. Work stoppages in Prince Edward Island, the Yukon or the Territories are dropped because no information on certifications granted is available from Martinello (1996) or Johnson (2007) - these are extremely small jurisdictions. First agreement work stoppages that began before January 1, 1976 are also dropped. The second step is to sum the number of first agreement work stoppages that occur in each jurisdiction during the 12-month period covered by the *Annual Reports*.¹³ The last year that data are available on certifications granted for all jurisdictions is 2005 and that determines the last year included in the analysis. In the end the data cover 10 Canadian jurisdictions over the thirty year period from 1976 to 2005. The number of work stoppages by jurisdiction and year based on these data include the private and quasi-public sectors and correspond as closely as is possible to the coverage of certifications granted in the *Annual Reports*.¹⁴

There are limitations on the right-to-strike in the quasi-public sector (health, education and public administration) that could influence the results. In the quasi-public sector there are regulations regarding ‘essential workers’ who are not allowed to strike and workers in these sectors are more likely to be ‘legislated back to work’. In order to see how sensitive the results are to the inclusion of the quasi-public sector another measure of incidence is constructed using only first agreement work stoppages that occur in the private sector. Unfortunately it is not possible to remove the quasi-public sector from the data on certifications granted. Results are presented for ‘Private and Quasi-Public Sectors’ and for the ‘Private Sector’.

¹³ Some Labor Boards report on a calendar year basis others report on a fiscal year basis.

¹⁴ It is interesting to note that from 1976 to 2005 first agreement work stoppages comprise, on average, 15 percent of work stoppages.

Results

Specifications are first estimated using Ordinary Least Squares (OLS). Diagnostic tests are performed on the residuals of the OLS regressions to check for the presence of possible error-relationships that can exist in cross-sectional time-series data. The tests reveal that groupwise heteroskedasticity exists in all specifications. There is no evidence of common autocorrelation. In some specifications there is evidence of panel-specific autocorrelation. The specifications are estimated again using Feasible Generalized Least Squares. This estimation technique allows any error-relationships to be taken into account and, as a result, provides more accurate standard errors on the coefficients. For all specifications, Wald tests reveal province-specific time trends are jointly significant, however the hypothesis that the trends are equal cannot be rejected. This evidence suggests the influence of the province-specific time trends can be adequately captured by either a common time trend or by year effects. Year effects provide a more flexible specification, however the inclusion of year effects substantially reduces the degrees of freedom compared to a specification that uses a common time trend. Specifications that include either a time trend or year effects are estimated. Province fixed effects and a common set of legal control variables are included in all specifications.

Table 3 presents the results for the ‘Private and Quasi-Public Sectors’ and the ‘Private Sector’. The coefficient on FCA is negative and statistically significant at at least the 95 percent level in all specifications. The magnitude of the coefficient suggests that FCA reduces the incidence of first agreement work stoppages by a substantial amount – 65 percent in the ‘Private and Quasi-Public’ sectors and by 50 percent in the ‘Private Sector’

These results are based on the critical assumption that the introduction of first agreement arbitration is ‘exogenous’. To provide an informal test of this assumption the model is estimated

again including an indicator variable for the two years prior to FCA taking effect. These results are presented in Table 4. None of the coefficients on the variable for the two years prior to FCA taking effect is statistically significant. In contrast the coefficient on the period when FCA is in effect is negative, substantial and statistically significant in three of four specifications. This evidence suggests there is no systematic change in incidence in the two years prior to the introduction of FCA. However, once FCA is in effect, the legislation is associated with a reduction in work stoppage incidence. While these results do not prove FCA is exogenous they provide circumstantial evidence that is consistent with this assumption.

Does FCA encourage or discourage collective bargaining?

The cross-sectional time-series results show that FCA reduces the incidence of first agreement work stoppages by a substantial amount. Is the reduction in work stoppages due to the parties bargaining more seriously to reach agreement or are they relying on arbitration? This section provides objective evidence, concerning whether or not the availability of FCA encourages or discourages collective bargaining in Canada.

Background

As discussed in the *Introduction*, the negotiation of a first agreement is inherently difficult and particularly vulnerable to bad faith bargaining by an employer who wants to resist unionization. Much of the policy debate in Canada and the United States concerning the desirability of introducing FCA has revolved around the issue of whether or not FCA encourages or discourages collective bargaining (Weiler (1980, 1984), Sexton(1987)). FCA supports and encourages collective bargaining if, by providing the threat that a third party may impose a collective agreement, it deters bargaining in bad faith and creates the incentive for the parties to

negotiate. However the availability of FCA also has the potential to undermine collective bargaining for two reasons. First, FCA may create a ‘chilling effect’ if the parties refuse to negotiate because they expect an agreement to be imposed and believe negotiating may harm their position in the arbitration process. Second, FCA may create a ‘narcotic effect’ if the parties avoid the hard work and difficult trade-offs involved in bargaining and instead rely on arbitration. If FCA encourages bargaining it will not be accessed very often – the parties will reach agreement without applying for arbitration. If FCA discourages collective bargaining it will be accessed frequently and the first collective agreement will more likely be imposed.

Empirical Methodology

The empirical analysis examines the behavior of two measures that describe the use of FCA over time for each jurisdiction when FCA is in effect. The ‘application rate’, defined as:

$$(3) \quad \text{application rate}_{it} = \frac{\text{FCA applications filed}_{it}}{\text{certifications granted}_{it}}$$

measures the proportion of newly certified units that apply for first agreement arbitration. The application rate provides information on how frequently parties in newly certified environments attempt to use FCA as a method for settling their first collective agreement.

The ‘imposition rate’, defined as:

$$(4) \quad \text{imposition rate}_{it} = \frac{\text{FCA granted}_{it}}{\text{certifications granted}_{it}}$$

measures the proportion of newly certified units where some, or all of, the first contract is settled through the process of FCA. The ‘imposition’ rate reveals how often a third party is directly

involved in determining the actual terms and conditions of employment of a first contract (in whole or in part).

Data for constructing these measures are from the *Annual Reports* of the various Labor Boards (or equivalent) and have been compiled in Johnson (2007). Great care has been taken to ensure that within a jurisdiction the coverage and reporting procedures are consistent over time. The data cover all activity, private and quasi-public, within each jurisdiction.¹⁵

Results

Figure 1a presents plots of the ‘application rate’ for the period from 1976 to 2005, for each jurisdiction when FCA legislation is in effect and consistent data are available.¹⁶ Table 5a provides some basic descriptive statistics for the application rate for each jurisdiction. It is readily apparent in Figure 1a and Table 5a that the application rate is low for all jurisdictions. The mean application rate ranges from .01 in the federal jurisdiction to .17 in Manitoba.

There are differences in the level and variability of the application rate across jurisdictions and over time. Some of this variability simply reflects the size of the jurisdiction – Saskatchewan, Manitoba and Newfoundland are much smaller jurisdictions and consequently the application rate is more variable. However some of differences in the level and variability can be explained, in part, by differences in the type of FCA legislation in force across jurisdictions or changes in FCA legislation within a jurisdiction over time.¹⁷

‘Automatic’ FCA has been in effect in Manitoba since 1985.¹⁸ This type of FCA permits either the employer or union to apply for FCA once certain time limits have been exceeded in the

¹⁵ Data are not available separately for the private sector.

¹⁶ Due to a change in reporting procedure data are available only to 2000 for Quebec. I am in the process of determining if it is possible to obtain consistent information on FCA for Quebec for the longer period, 1976 to 2005.

¹⁷ O’Brien (2001) and Rose (2006) provide excellent overviews of FCA legislation in Canadian jurisdictions. O’Brien provides detail and evaluates the operation of FCA in British Columbia. Rose provides detail and evaluates the operation of FCA in the Ontario.

¹⁸ From 1982 to 1984 Manitoba had the more restrictive form ‘fault’ form of FCA (described below).

negotiation process. There is no need to provide evidence of dysfunctional bargaining, access is ‘automatic’. Manitoba is the only jurisdiction that permits such unfettered access to FCA.

Therefore it comes as no surprise that Manitoba has a much higher application rate, on average.¹⁹

Other jurisdictions have much more restrictive forms of FCA. ‘Fault’ FAA has a ‘double screen’ whereby the Minister of Labor must refer the application to the Labor Board. This introduces a ‘political’ element to the process that does not exist in other forms of FCA. Under ‘fault’ FCA there must also be evidence of bargaining in bad faith or that bargaining has become dysfunctional to access FCA. Therefore it is more difficult to obtain FCA. ‘Fault’ FAA was in effect in British Columbia from 1974 to 1993, the federal jurisdiction from 1978 and Newfoundland from 1985. Quebec has similar legislation but there is no involvement by the Quebec Labour Court (the analog to the Labor Board in this jurisdiction) only the Ministère du Travail is involved. ‘Fault’ FCA seems to be associated with extremely low application rates in B.C. (to 1992), the federal jurisdiction, and Quebec. However it is interesting to note that although Newfoundland has virtually identical ‘fault’ FCA legislation to that of B.C. and the federal jurisdiction it has higher application rates.

‘No-fault’ FCA is similar to ‘fault’ FCA except there is no double screen – the application is made directly to the Labor Board and there must be some evidence of dysfunctional bargaining (not necessarily bargaining in bad faith). This legislation has been in effect in Ontario from 1989 to 1991 and from 1996 to 2005 and Saskatchewan since 1994. This

¹⁹ Ontario had ‘automatic’ FAA for a brief period from 1992 to 1995. The plot of the application rate for Ontario shows a slight increase during this time period.

type of legislation is associated with very low application rates in Ontario and somewhat higher rates in Saskatchewan.²⁰

‘Mediation-supported’ FCA has been in effect in British Columbia since 1993. This type of FCA does not require a double screen. There is also no need to show evidence of dysfunctional bargaining or bargaining in bad faith. If the parties have reached an impasse and a strike vote has been held (and received majority support) either party may apply to the Labor Board for ‘mediation-supported’ FCA. A mediator is appointed who encourages the parties to reach agreement. If an agreement is not reached within 20 days the mediator can recommend; further mediation by a person with the power to arbitrate any unresolved issues, arbitration, or the parties proceed to a work stoppage. The plot of the application rate for B.C. shows an increase in the application rate during the period (1993-2005) when ‘mediation-supported’ FCA is in effect.

Though not a rigorous statistical analysis, this descriptive evidence suggests that access to FCA, as measured by the application rate, is associated with the form the FCA legislation takes. It appears application rates for jurisdictions and time periods with ‘fault’ and ‘no fault’ FCA are low relative to jurisdictions with ‘mediation-supported’ or ‘automatic’ FCA. The level of the application rate under ‘mediation-supported’ FCA, while generally higher than in jurisdictions with ‘fault’ or ‘no-fault’ FCA, is lower than in Manitoba when ‘automatic’ FCA is in effect.

Figure 1b presents plots of the ‘imposition rate’ for each jurisdiction from 1976 to 2005 when the legislation is in effect and consistent data are available. Table 5b presents basic summary descriptive statistics of the ‘Imposition Rate’. It is evident that imposition rates are

²⁰ Saskatchewan has traditionally had a very supportive attitude toward collective bargaining compared to Ontario. This may explain why the FCA application rate is higher in Saskatchewan than in Ontario. The higher variability in Saskatchewan is likely due to the fact that this is a very small jurisdiction relative to Ontario.

much lower than application rates for all jurisdictions and years. It appears the terms and conditions of a first agreement (either in whole or in part) are rarely imposed by a third party.²¹ In general the imposition rate is higher for those jurisdictions and time periods where the FCA application rate is relatively high. However it is interesting to note that this is not true for British Columbia. In this jurisdiction, when mediation-supported FCA is in effect, the imposition rate is very low even though the application rate is higher than average in other jurisdictions. This suggests that mediation-supported FCA is less likely to result in an imposed agreement than other forms of FCA perhaps because the presence of the mediator facilitates the direct negotiation of an agreement, or because the option of a work stoppage remains available.

Earlier Canadian research presents similar, though less detailed, descriptive evidence that confirms low application rates and impositions rates in Canadian jurisdictions and variability in these rates across jurisdictions (Rose(2006)²² and O'Brien (2001)²³

The cross-sectional time-series analysis shows that FCA reduces the incidence of first agreement work stoppages. Is work stoppage incidence reduced because FCA is used frequently to resolve disputes involving first agreements? The descriptive measures show this is not the case: Application rates for FCA are very low and imposition rates even lower. The evidence suggests the reduction in work stoppages involving first agreements is likely because FCA

²¹ Once an arbitrator is involved in the negotiations the parties may be more likely to come to agreement on their own – either through the help of the arbitrator or because the threat of an imposed agreement forces the parties to reach agreement. Legislation in most jurisdictions limits the amount of discretion an arbitrator has in determining a first collective agreement. The following is a general description of the typical restrictions placed on an arbitrator when awarding a first agreement. The arbitrator is directed to settle only the outstanding issues. The imposed agreement is not to contain any ‘breakthrough’ clauses nor should it be based on a ‘standard’ agreement for an industry. The arbitrator is usually instructed to explicitly consider the particular economic environment in which the employer is operating.

²² Rose(2006: page in book??) reports that from 1974 to 2000 ,in all jurisdictions with FCA, first agreement applications as a percentage of certifications granted is 5.9 percent. There was variability across jurisdictions from 17.5 percent in Manitoba to less than 1 percent in the federal jurisdiction. Contracts imposed as a percent of certifications granted was 1.4 percent and varies from .13 in the federal jurisdiction to 7.5 percent in Manitoba.

²³ O'Brien (2001:46) presents evidence by jurisdiction on application rates and imposition rates over the entire period FCA was in effect in each jurisdiction between 1974 and 2000 (except for BC where two periods, 1974-1992 and 1993 to 2000 are examined).

provides an incentive for the parties to reach agreement rather than risk the possibility of a third party imposing the terms and conditions of the contract. FCA appears to encourage collective bargaining.²⁴

Does FCA influence the duration of work stoppages involving first agreements?

Background

In Canada, any first agreement strike or lockout in progress must stop once FCA is accessed. Therefore FCA may reduce the duration of first agreement work stoppages. This is the first Canadian study to examine the impact of FCA on the duration of first agreement work stoppages.

Empirical Methodology

Kaplan-Meier Survival Plots of survival rates are presented. A Kaplan-Meier curve provides a visual description of the probability that a first agreement work stoppage lasts at least 't' days. Separate curves are drawn to show the survival rates of first agreement work stoppages for jurisdictions that have FCA when the work stoppage begins and those that do not have FCA. The overall curves are compared to see if survival rates are different in the presence of FCA.

A Cox-proportional hazard model is also estimated. The model is estimated using information at the level of the individual work stoppage, 'j'. This methodology has an advantage over plotting Kaplan-Meier curves because it provides evidence of the affect of FCA on the duration first agreement work stoppages that controls for the influence of other factors (x_j). The

²⁴ It is possible that the reduction in work stoppage activity is because newly organized units are decertified. Data available on decertification activity in Canadian jurisdictions do not distinguish between the decertification of newly formed bargaining units and other units. Therefore the data do not permit a direct empirical examination of this possibility. Evidence based on decertification data that are available show that decertification rates are extremely low and there has been no trend over the time period studied (Martinello (1996:9), Johnson (2002:338)). It is also the case that decertification prior to attaining a first agreement does not necessarily preclude a work stoppage. Given the magnitude of the reduction of work stoppage activity associated with FCA it is highly unlikely that the reduction in work stoppages involving first agreements is due to decertification – it is more likely that the threat of FCA is encouraging the parties to reach agreement through collective bargaining.

dependent variable in this model is the hazard rate, $h(t)$. The hazard rate is measured using the number of days a first agreement work stoppages lasts. The hazard rate is interpreted as the probability that a first agreement work stoppage ends at time 't' given that it has lasted until 't'. The Cox-proportional hazard model has a semi-parametric specification that allows for a flexible baseline hazard, $h_0(t)$. Therefore it does not require that strong assumptions be made about the nature of the hazard function.

$$(4) \quad h(t|x_j) = h_0(t) \exp(\beta_{FCA} FCA_j, \beta_x x_j)$$

In this model the critical explanatory variable is FCA, a dummy variable that indicates if first contract arbitration legislation is in effect when the work stoppage begins. If the coefficient on FCA is statistically significant and of sufficient magnitude this would provide empirical evidence that FCA affects the duration of first agreement work stoppages. Additional non-time varying covariates are included in the analysis to control for elements of the bargaining environment that may influence the hazard rate. Control variables include other legislation that may affect duration, bargaining unit size, industry, province, season (quarter), year, union affiliation, strike/lockout and issue.²⁵

²⁵ The variables included in this analysis are similar to those used in Gunderson and Melino's (1990) analysis of the impact of replacement worker legislation on the duration of work stoppages that involve the re-negotiation of a collective agreement. Other legislation includes; ban on temporary replacements, ban on permanent replacements, reinstatement rights, ban on professional strikebreakers, mandatory strike vote, employer initiated strike vote, compulsory conciliation, cool-off period, dues check-off, and technological re-opener. Bargaining unit size is measured as number of workers/100. There are either nine or 11 industry dummies depending on the sample used. Union dummies are Teamsters, Carpenters and Joiners, United Steel Workers, United Auto Workers, United Food and Commercial Workers and Other. Issues are wages, other and not recorded.

Data

Work stoppage level data from the *Work Stoppages Database* are used.²⁶ Work stoppages are restricted to those involving first agreements that began January 1, 1976 through March 31, 2007. The last date a work stoppage is observed is June 30, 2007.²⁷

Two samples are created that are analogous to those used in the cross-sectional time-series analysis: a sample that includes ‘all’ first agreement work stoppages in the private and quasi-public sector (n=1965); and a sample that includes only ‘private’ sector first agreement work stoppages (n=1698).

Results

Figure 2 presents plots of the Kaplan-Meier Survival Curves. The top figure is for the private and quasi-public sector sample. The bottom figure is for the private sector sample. Visual inspection of the plots reveals little difference between the survival curve for first agreement work stoppages when FCA is in effect compared to the survival curve in jurisdictions when it is not in effect. This is true for each sample. Tests are performed to determine if there is any statistical difference between the curves. These results are inconclusive. Log rank tests, performed for each sample, cannot reject that the two survival curves are equal. However other tests, Wilcoxon and Peto-Peto-Prentice, which put more weight on information from shorter durations reject the equality of the two survival functions. The reason it is difficult to determine if the curves are different is that they cross. Therefore the results of the tests are sensitive to the weight placed on different portions of the curve.

²⁶ The *Work Stoppages Database* includes any work stoppage that lasts at least half a day and results in a minimum of 10 person days of work lost. There are a number of work stoppages that begin and end on the same day in the dataset. I assign a value of .5 days duration to these work stoppages.

²⁷ Two first agreement work stoppages are censored because they had not ended by June 30, 2007. Eighteen work stoppages last more than 750 days. Officials at the Workplace Information Directorate indicate that sometimes it is difficult to determine when a work stoppage ends. Since duration analysis is sensitive to the inclusion of outliers any work stoppage that lasts more than 750 days has been censored. Gunderson and Melino (1990) also censored outlier duration observations.

Table 6 presents the results from the estimation of the Cox-Proportional Hazard model. The coefficient on first contract arbitration is not statistically significant in either sample. There appears to be no evidence that FCA affects the duration of first agreement work stoppages when other factors that can influence the duration of first agreement work stoppages are taken into account. It is perhaps not surprising that FCA has no apparent impact on the duration of first agreement work stoppages given that applications for FCA rarely occur.

Recap: Lessons Learned from Canadian experience

This empirical analysis of Canadian experience with First Contract Arbitration yields the following ‘lessons’. First, cross-sectional time-series analysis shows that the introduction of First Contract Arbitration reduces the incidence of work stoppages associated with the negotiation of first agreements by a substantial, statistically significant amount. Second, there is no evidence to suggest that the parties involved in the negotiation of a first agreement rely on arbitration to settle their differences – application rates and imposition rates are low across all jurisdictions. It appears the reduction in first agreement work stoppages is likely due to the fact that the threat of having a first agreement imposed creates an incentive for the parties to reach agreement on their own. Therefore FCA supports and encourages the collective bargaining process and is not a substitute for it. Although application rates and imposition rates are low across all jurisdictions there is some evidence that: Parties are more likely to apply for FCA in jurisdictions where there are less stringent requirements to access FCA - where ‘automatic’ or ‘mediation-supported’ FCA is in effect; Parties are less likely to apply for FCA in jurisdictions where it is more difficult to access FCA – where ‘fault’ or ‘no-fault’ FCA is in effect. There is no empirical evidence that FCA affects the duration of first agreement work stoppages.

References

- Bronfenbrenner, Kate (1994), "Employer Behavior in Certification Elections and First Contract Campaigns: Implications for Labor Law Reform," in *Restoring the Promise of American Labor Law* edited by Sheldon Friedman *et al.* Ithaca, New York: ILR Press: 75-89.
- Chaison, Gary and Joseph Rose (1994), "The Canadian Perspective on Workers' Rights to Form a Union and Bargain Collectively," in *Restoring the Promise of American Labor Law* edited by Sheldon Friedman *et al.*, Ithaca, New York: ILR Press: 241- 249.
- Cooke, William (1985), "The Failure to Negotiate First Contracts: Determinants and Policy Implications." *Industrial and Labor Relations Review* vol. 38, no.2: 163-178.
- Cramton, P., Gunderson, Morely and J. Tracy (1999), "The Effect of Collective Bargaining Legislation on Strikes and Wages." *Review of Economics and Statistics* vol. 81, no. 3: 475-487.
- Employee Free Choice Act of 2007* GovTrack.us. H.R. 800--110th Congress (2007): Employee Free Choice Act of 2007, *GovTrack.us (database of federal legislation)* <<http://www.govtrack.us/congress/bill.xpd?bill=h110-800>> (accessed Sep 4, 2008)
- Freeman, Richard (1988), "Contraction and Expansion: The Divergence of Private Sector and Public Sector Unionism in the United States," *Journal of Economic Perspectives* vol. 2, no. 2 (Spring):63-88.
- Gunderson, Morley, John Kervin and Frank Reid (1989), "The Effect of Labour Relations Legislation on Strike Incidence," *Canadian Journal of Economics* vol. 22, no. 4 (November): 779-794.
- Johnson, Susan (2007), *Canadian Industrial Relations Dataset* (preliminary).
- Johnson, Susan (2002a), "Card Check or Mandatory Vote? How the Type of Union Recognition Procedure Affects Union Certification Success," *Economic Journal* vol.112 no.479:344-361.
- Johnson, Susan (2002b), "Canadian Union Density 1980 to 1998 and Prospects for the Future: An Empirical Analysis," *Canadian Public Policy* vol. 36, no.3: 333-347.
- Logan, John(2002), "Consultants, lawyers and the union-free movement in the USA since the 1970s," *Industrial Relations Journal* vol. 33 no.3:197-214.
- Martinello, Felice (1996), *Certification and Decertification Activity in Canadian Jurisdictions*. Kingston, Ontario: Industrial Relations Centre, Queen's University.
- O'Brien, Jan (2001), *First Collective Agreement Legislation: From Exceptional Remedy to Routine Solution*. Project submitted in partial fulfillment of the requirements for the degree of Master of Business Administration. Simon Fraser University, August 2001.

Pavy, Gordon(1994), “Winning NLRB Elections and Establishing Collective Bargaining Relationships,” in *Restoring the Promise of American Labor Law* edited by Sheldon Friedman *et al*, Ithaca, New York: ILR Press:110-121.

Riddell, W.Craig (1993), “Unionization in Canada and the United States: A Tale of Two Countries,” in *Small Differences that Matter*. Edited by David Card and Richard Freeman, Chicago: University of Chicago Press: 109-148.

Rose, Joseph B. (2006), “Collective Bargaining performance of newly certified unions in Canada: Process and outcomes,” in *Union Recognition: Organising and Bargaining Outcomes*. Edited by Gregor Gall, New York: Routledge: 198-214.

Sexton, Jean (1987), “First Contract Arbitration in Canada.” *Labor Law Journal*, Industrial Relations Research Association Spring Meeting: 508-518.

Taras, Daphne(2006), “First Contract Arbitration: Alberta requires an amendment to the Alberta Labour Code,” Institute for Advanced Policy Research, Policy Brief 06002, January.

Weiler, Paul(1984), “Striking a New Balance: Freedom of Contract and the Prospects for Union Representation,” *Harvard Law Review* vol.98: 351-420.

Weiler, Paul(1980), *Reconcilable Differences*. Toronto: The Carswell Company Limited.

Table 1: Percent of all private-sector first contract negotiations, closed without agreement after two fiscal years

Year	Percent
1996	40
1997	30
1998	34
1999	42
2000	44
2001	45
2002	42
2003	44
2004	45

Notes:

1. Calculations by the author based on data available from the *Federal Mediation and Conciliation Services Annual Report 2000* (pp. 35) and *2004* (pp.18-19).

$$\text{Percent} = \frac{\text{number of mediated and non-mediated initial negotiations closed without agreement after 2 years}}{\text{total number of mediated and non-mediated initial negotiations closed after 2 years}} \times 100$$

2. The FMCS receives notification from the National Labor Relations Board of certifications each month. All first contract cases are assigned for mediation. Once assigned the file remains open for two fiscal years.
3. No data are available from this source before 1996 or after 2005.

Province	First Contract Arbitration	Anti-Temporary Replacement	Ban on Permanent Replacements	Reinstatement Rights	Ban on Strike-breakers	Dues Check-off	Mandatory Strike Vote	Employer Initiated Vote	Compulsory Conciliation	Cool Off Period	Tech Re-opener
British Columbia	73:11	93:01			73:11	77:09	67	87:08		67-68:3(2) 68:4(3)	74:03
Alberta				88:11			67	88:12	68:1-81:2 88:12	67-81:2(14) 81:3-88:11(3) 88:12(14)	
Saskatchewan	94:10			94:10		72:05	67	83:07		83:7(2)	72:05
Manitoba	82:02		85:01	85:01	85:01	72:11	85:01	97:02-00:10			72:11
Ontario	86:05	83:01-95:11		70:11-92:12 95:11	83:06	80:07	95:11	80:07	67-86:12	67(14)	
Quebec	77:12	78:02		78:02		78:04	78:04	02:11	67-78:1	77:12(2)	
New Brunswick							72:04		67	67(7)	89:04
Nova Scotia							67	94:05	67	67(14)	
Newfoundland	85:06					85:07			67	67(14)	
Prince Edward Island	95:05		87:05	87:05			67		67	67(14)	
Federal	78:04			99:01	99:01	84:07	99:01	93:06	67	67(7)	72:01

Notes:

1. The numbers in the table refer to the year:month the legislation is in effect. If the legislation is repealed the year:month is provided. If the legislation was already in effect in 1967 only the year is listed. The cool-off period legislation includes the number of days of the cool-off period in brackets.
2. Compulsory Conciliation refers to either a conciliation board or officer.

Sources:

Information on Replacement worker legislation to 1993 are from Budd (2000) pp.227-229. Information on compulsory conciliation, mandatory strike vote, employer-initiated strike vote, cooling-off period and technological re-openers to 1993 are from Cramton, Gunderson and Tracy (1999) pp.478. Data on first agreement arbitration and dues check-off to 1997 are from Johnson (2002) pp.349. The information has been updated to 2006 using *Highlights of Major Developments in Labour Legislation* available from Human Resources and Social Development Canada .

http://www.hrsdc.gc.ca/en/lp/spila/cli/dllc/01Developments_in_Labour_Legislation_in_Canada.shtml

**Table 3: First Contract Work Stoppage Incidence
Cross-sectional Time-Series Analysis (FGLS)**

	Private and Quasi-Public		Private Sector	
	(1)	(2)	(3)	(4)
First Contract Arbitration	-.015** (.006)	-.020** (.005)	-.010* (.005)	-.013** (.005)
Legal Controls	Yes**	Yes**	Yes**	Yes**
Province Fixed Effects	Yes**	Yes**	Yes**	Yes**
Year Effects	Yes**	No	Yes**	No
Time Trend	No	Yes**	No	Yes**
Error Structure	hetero	hetero psar1 (BC .42 *)	hetero psar1 (NF .39*)	hetero psar1 (BC .41*) (NF .37*)
Mean Incidence	.023		.020	
Number of Observations	298		298	

Notes:

1. Standard Errors are in parentheses.
2. ** indicates significance at the 99 percent level. * indicates significance at the 95 percent level.
3. There are 298 observations because data on certifications granted are not available for two years in Alberta due to a computer problem at the Alberta Labour Relations Board.
4. Diagnostic tests reveal heteroskedascity across provinces (hetero) and panel-specific autocorrelation in some provinces (psar1, province, rho and significance).
5. Results of Wald Tests on the joint significance of province fixed effects, year effects and legal control variables are shown for each specification.

**Table 4: First Contract Work Stoppage Incidence
Cross-sectional time-series Analysis (FGLS)
Informal Test of Exogeneity of FAA**

	Private and Quasi-Public Sectors		Private Sector	
	(1)	(2)	(3)	(4)
FCA	-.017** (.006)	-.012* (.006)	-.013** (.005)	-.009 (.005)
Two-years Before FCA	.008 (.007)	.009 (.006)	-.0005 (.005)	.002 (.005)
Legal Controls	Yes**	Yes**	Yes**	Yes**
Province Fixed Effects	Yes**	Yes**	Yes**	Yes**
Year Effects	No	Yes**	No	Yes**
Time Trend	Yes**	No	Yes**	No
Error Structure	hetero psar1 (BC .44*)	hetero	hetero psar1 (BC .41*)	hetero psar1 (NF.37*)
Mean Incidence	.023		.020	
Number of Observations	298		298	

Notes:

1. Standard Errors are in parentheses.
2. ** indicates significance at the 99 percent level. * indicates significance at the 95 percent level.
3. There are 298 observations because data on certifications granted are not available for two years in Alberta due to a computer problem at the Alberta Labour Relations Board.
4. Diagnostic tests reveal heteroskedascity across provinces (hetero) and panel-specific autocorrelation in some provinces (psar1, province, rho, significance).
5. Results of Wald Tests on the joint significance of province fixed effects, year effects and legal controls are shown for each specification.

Table 5a: Application Rate

	Mean*	Minimum	Maximum
British Columbia	.04	0	.16
Saskatchewan	.10	0	.22
Manitoba	.17	.05	.36
Ontario	.03	.01	.09
Quebec	.05	.03	.09
Newfoundland	.07	0	.3
Federal	.01	0	.06

*Calculated over years the legislation is in effect.

**Quebec data cover period from 1976 to 2000.

Table 5b: The Imposition Rate

	Mean*	Minimum	Maximum
British Columbia	.005	0	.04
Saskatchewan	.05	0	.20
Manitoba	.08	0	.19
Ontario	.01	0	.06
Quebec	.03	.01	.04
Newfoundland	.02	0	.10
Federal	.003	0	.03

*Calculated over the years the legislation is in effect.

** Quebec data cover the period from 1976 to 2000.

***BC data on imposition rate not available in 2004, 2005 because change in classification of cases.

Table 6: Cox-Proportional Hazard Model Results

	Private and Quasi-Public			Private		
	coefficient	hazard ratio	p-value	coefficient	hazard ratio	p-value
FCA	-.070	.932	(.671)	-.016	.984	(.928)

Notes:

1. All specifications include controls for industry, bargaining unit size, union, strike/lockout, issue, province, year, quarter and other legislation.
2. Estimated with robust standard errors.
3. Private and Quasi-Public sample size is 1965. Private sample size is 1698.

Figure 1a: Application Rate

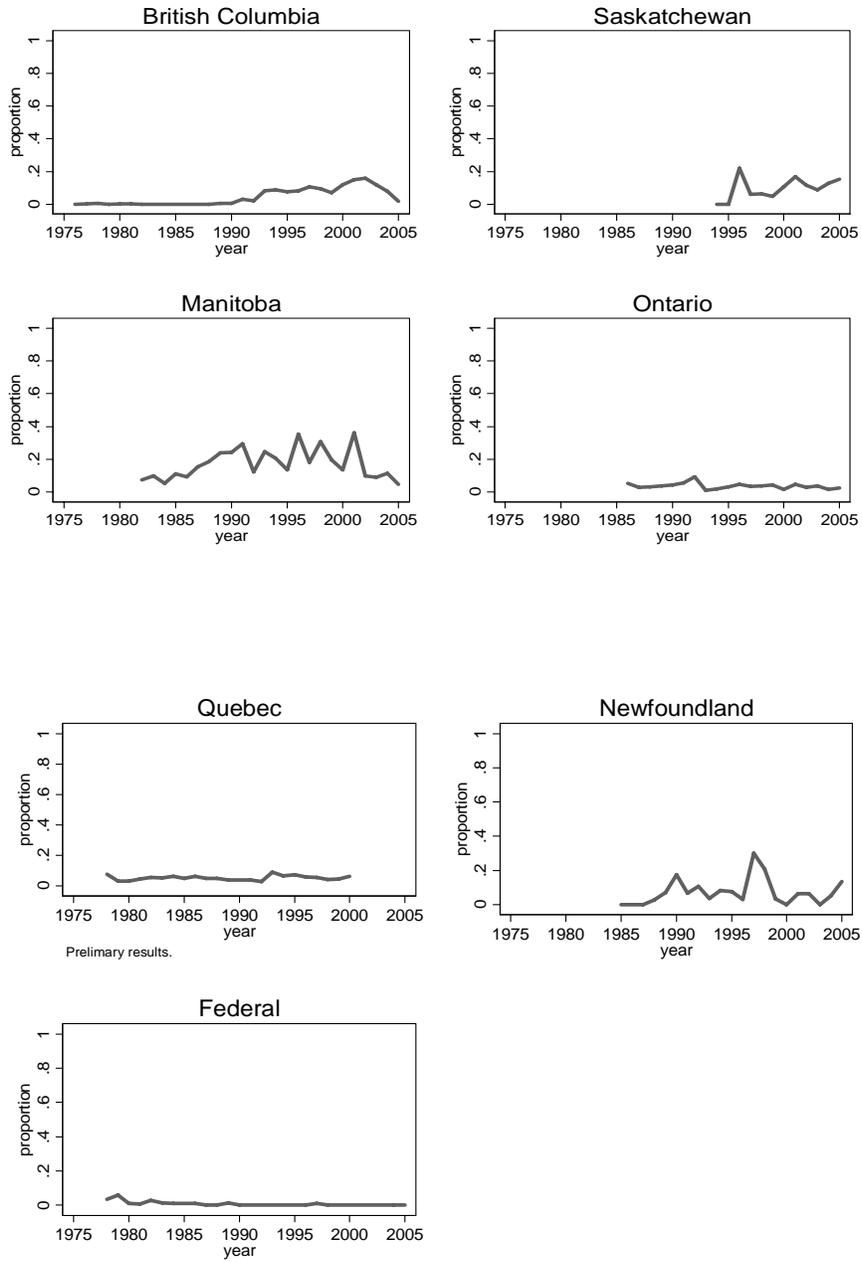
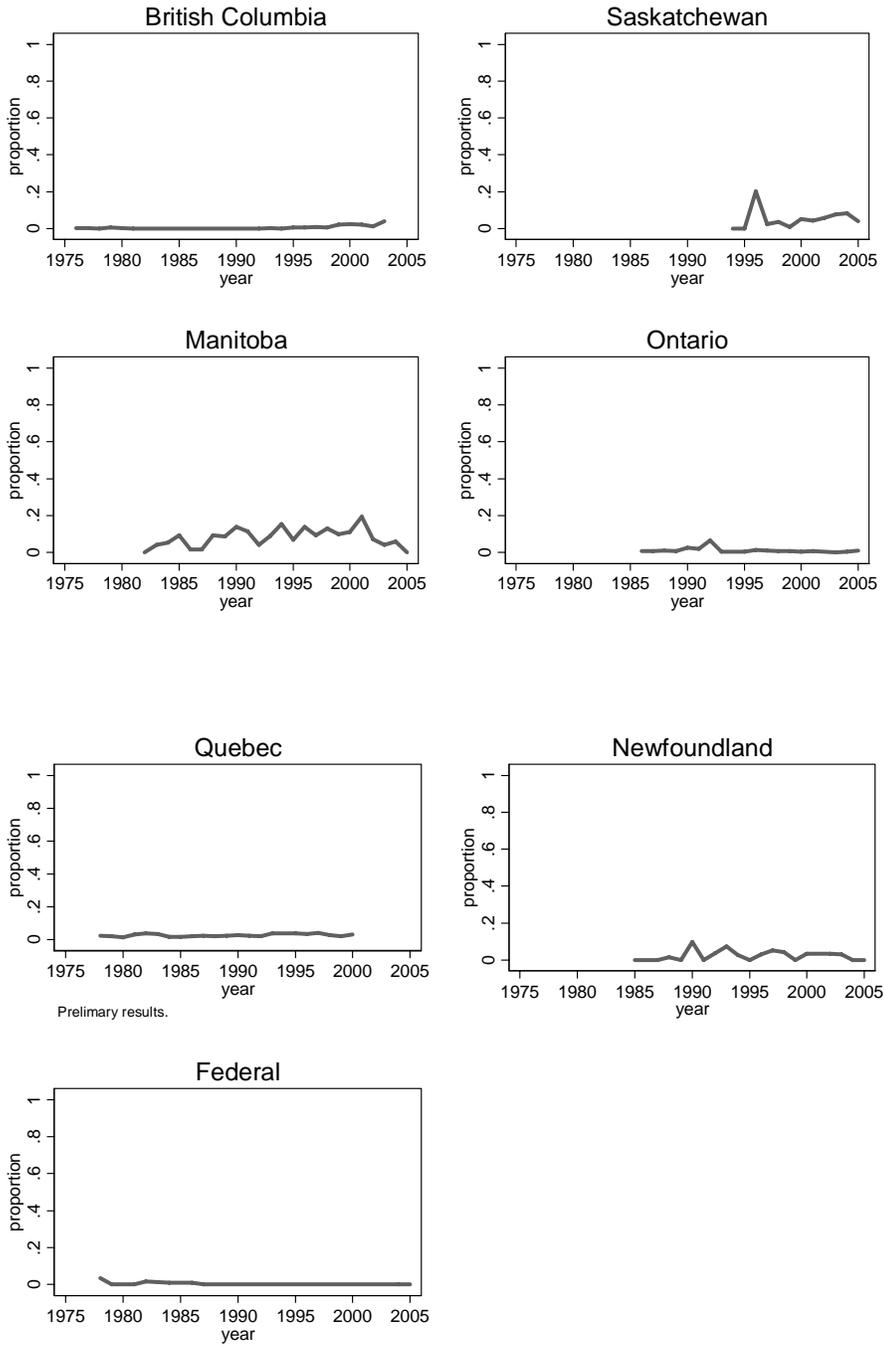
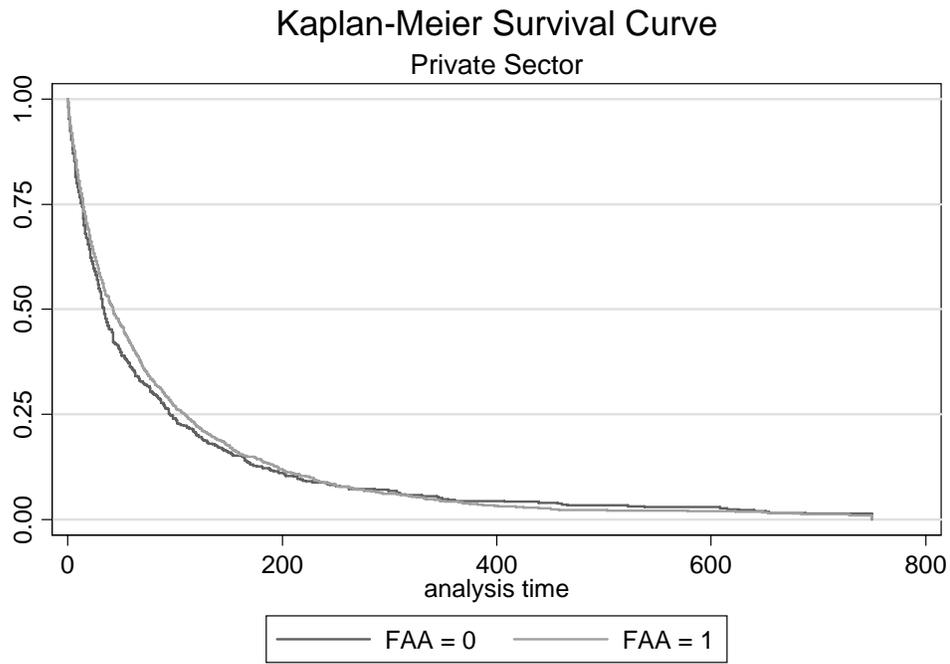
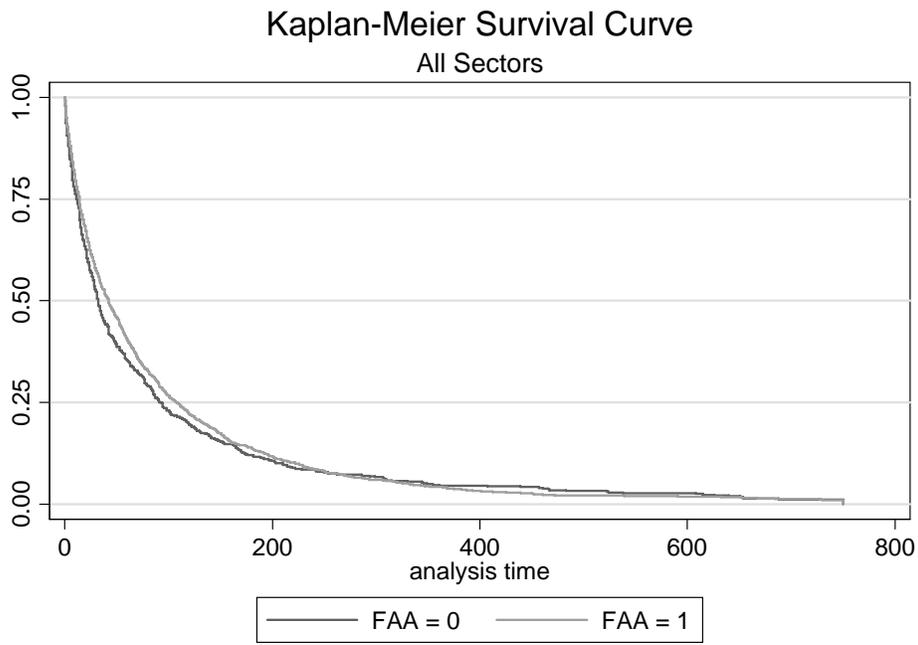


Figure 1b: Imposition Rate



Preliminary results.

Figure 2 – Kaplan Meier Survival Curves



Appendix: Description of Labor Legislation Control Variables

Possible requirements before a legal work stoppage

Mandatory Strike Vote: Requires that before a strike can occur the union show it has the majority support of the bargaining unit in a secret ballot.

Employer-Initiated Strike Vote: Permits the employer to request a secret ballot of the bargaining unit to determine if the unit is prepared to accept their last offer.

Compulsory Conciliation: Requires some form of third party intervention before a legal work stoppage can occur. The purpose of conciliation is to ensure no miscommunication has occurred between union and management and to encourage a settlement. In some provinces a conciliation officer is involved, in others there is an additional level of conciliation involving a Board.

Cool-Off Period: Mandates a number of days after other legal requirements for a work stoppage have been fulfilled before it can begin. The number of days varies from 2 to 14 (depending on the jurisdiction and year).

Regulations involving the use of replacement workers during a work stoppage

Anti-Temporary Replacement Workers (Anti-scab legislation): Prohibits the employer from hiring temporary replacement workers during a work stoppage and limits the use of existing employees.

Ban on Permanent Replacement Workers: Prohibits the employer from hiring permanent replacement workers during a work stoppage.

Reinstatement Rights: Guarantees striking workers their jobs back if they return to work within a given time period.

Ban on Professional Strikebreakers: Prohibits the employer from hiring professional strikebreakers during a work stoppage. A professional strikebreaker is a worker hired with the sole purpose of undermining the strike.

Legislation concerning difficult bargaining issues

Compulsory Dues Check-off: Permits, at the union's request, that a clause be included in a collective agreement that automatically deducts union dues from an employee's pay and remits them to the union.

Technological Change Re-opener: Permits, at the union's request, that a clause be included in a collective agreement which allows the contract to be re-opened before it expires to address technological change.