Real and nominal wage rigidities in collective bargaining agreements☆

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Abstract

An earlier study of wage agreements, reached in the Canadian unionized sector between 1976–99, found that wage adjustment is characterized by downward nominal rigidity and significant spikes at zero. We extend this earlier approach to encompass the possibility of real as well as nominal wage rigidity. The addition of real wage rigidity variables enhances earlier results and suggests that real rigidity increases significantly the mass in the histogram bin containing the mean anticipated rate of inflation, as well as in adjacent bins. Downward nominal wage rigidities and spikes at zero remain important.

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1. Introduction

Monetary policies in a number of countries have, at least until the current oil price shocks, succeeded in limiting price inflation. A by-product of this success has been concern with the extent to which this inflation record has been achieved at a cost. In a low inflation
environment, downward nominal wage rigidity (DNWR) may mean that nominal-wage reductions, called for by bargaining pair-specific productivity shocks, do not occur, thereby compromising the efficiency of the labour market. Indeed, some studies go as far as to look for the unemployment consequences of such low-inflation mechanisms. If inflation greases the wheels of the labor market, then its absence may lead to costs. An expanding literature covering a number of countries takes advantage of the recent periods of low price inflation and attempts to measure the extent and consequences of DNWR. This literature has been further energized by the International Wage Flexibility Project (IWFP), led by William Dickens and Erica Groshen.

An important concern of studies in this literature should be the extent to which real rigidities can be treated as part and parcel of the more general wage adjustment process. Naturally, the extent to which price inflation and particularly anticipated price inflation feed into nominal-wage adjustment is a subject that goes at least as far back as Friedman (1968). While nominal-wage adjustment is clearly conditioned by price inflation effects, the extent to which downward real wage rigidity (DRWR) exists, its implied impact on the shape of the wage adjustment distribution in the neighborhood of the anticipated rate of inflation, and possible interactions of this process with DNWR are issues that deserve further attention.

A particularly good data set for studying these effects is the Human Resources Development Canada (HRDC) record of the provisions of collective bargaining agreements reached in the Canadian unionised sector. The data is thought to be very accurate because it refers to legally binding provisions, it covers all industries over all of Canada, and it covers high as well as low inflation periods since 1976. In an earlier paper by Christofides and Leung (2003), the HRDC data were used to examine DNWR and menu cost behaviour in the period 1976–1999 using parametric techniques inspired by Kahn (1997). In this paper, we extend the earlier study to more explicitly encompass DRWR and its interaction with DNWR. A strength of the HRDC data for current purposes is that the diverse inflation experience that it encompasses makes it possible to differentiate DNWR from DRWR processes. The results obtained indicate significant and substantial nominal and real wage rigidity in the contract data.

Our approach is distinctively different from other recent studies that also test for the presence of both types of rigidity, including, among others, those of Bauer et al. (2003) for Germany and Barwell and Schweitzer (2004) for the UK. Both studies find evidence for the presence of both types of rigidity, with real rigidity being more pervasive. Their approach builds upon the maximum-likelihood methodology originally proposed by Altonji and Devereux (2000) for the testing of DNWR alone, and requires parametric assumptions about the family of the rigidity-free nominal-wage-growth distribution. In contrast to them, we make no such assumptions, nor do we impose a symmetric structure, as it has often been done in studies that examine the presence of DNWR. For the identification of the shape of the rigidity-free distribution and the size of the distortions due to the presence of rigidity we exploit the fact that we have several yearly samples from nominal-wage-growth distributions whose shape is affected by Downward Wage Rigidity (DWR) differently from year to year.

The rest of the paper is organised as follows: In Section 2, we consider the effect of the presence of each type of rigidity on the wage-growth distribution and in Section 3 we present more details on the data and sources. The empirical specification and estimation issues are

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2 An extensive review of the literature is contained in Christofides and Leung (2003).
3 Much more information is provided in the proceedings of the project’s Final Conference in Dickens and Groshen (2004).
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