

FORMATION DES SALAIRES ET INDEXATION AUTOMATIQUE

Analyse comparative
de quatre pays européens



LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de l'Économie

Observatoire de la compétitivité

Executive summary

The problem

Automatic indexation mechanisms are often criticized for being a key source of inflexibility of real wages and thus responsible for a lack of adjustment in the labour market and for a deterioration of cost-competiveness. The aim of this study is to empirically assess whether this point of view is well founded. The Statistical and econometric research relates to four countries: two with institutionalized indexation of wages to consumer prices (Luxembourg and Belgium) and two without institutionalized indexation (Germany and France). This comparative approach is appropriate for detecting potential contrasts in terms of wage setting between countries with or without automatic indexation mechanisms of wages to consumer prices.

In the absence of automatic indexation, the adjustment of nominal wages to price changes may of course be obtained as part of wage negotiations, but such adjustments then depend more on workers' negotiating powers and those of their trade unions. Recent economic theory takes into account the relatively complex influence of indexation on the transmission of economic shocks and fluctuations. These developments underline the necessity to avoid simplistic conclusions regarding the effects of wage indexation on prices and encourage empirical work on wage setting to be pursued.

Wage setting and trends in four countries

Even if some procedures differ, Luxembourg and Belgium have in common an automatic indexation of wages to consumer prices that first appeared in the early 1920s and since then, for several decades now, has been extended to all economic sectors. On the other hand in Germany, an aversion to any potentially inflationary system led to a ban on indexation in 1948. In France, since 1983, collective bargaining agreements must no longer refer to indexation. Only the minimum wage is still indexed.

Changes in real hourly wages and hourly productivity in the tradable sector seem to have been strongly related since the early 1980s in France, Luxembourg, and to a lesser extent Belgium. While all countries saw a shift in real wage increases in the early 1980s, Germany clearly stands out as a result of wage austerity put in place in the mid-1990s. In each country these trends have led to a more or less pronounced reduction in the wage share of income. However, simply observing these trends does not allow to detect any specific issues related to the existence or absence of automatic indexation mechanisms.

A theoretical wage-setting model

Building a precise theoretical model for wage negotiations can allow us to understand how the various key variables may impact wage setting. The model provides a wage equation wherein the bargained wage depends positively on a reservation wage (a basic wage acceptable to workers and depending in particular on replacement income and consumer prices), on company profits

and on workers' bargaining power, and depends negatively on the unemployment rate. These different variables are approximated in the econometric study by indicators that can be observed over a long period.

Initial empirical work concerning a study by the European Commission (2011)

In a recent report (EC 2011) including an econometric analysis of 28 countries, the Directorate-General for Economic and Financial Affairs (DG ECFIN) attempted to show that countries with indexation had wage setting practices that were more inflexible and in particular were insensitive to determining factors as essential as the unemployment rate. This econometric analysis was re-estimated for all countries, and subsequently individually, extending the period of observation with more recent data. A number of issues merit mention:

- Panel estimation brings together countries with very different economic structures whose only assumed common point is the presence or absence of wage indexation mechanisms. This procedure may lead to significant estimation bias.
- Taking into account more recent observations considerably alters the results obtained by DG ECFIN. This problem of a lack of robustness is fairly common due to the small sample size, but suggests great care when interpreting results.
- The DG ECFIN study relates to economies in their entirety. However, this type of econometric analysis is usually applied to the tradable sector alone, where competitiveness plays a much more significant role, and where productivity measures are more meaningful than in the non-tradable sector.
- It is important to take into account the differences observed in the development of working hours in each country, and thus to examine the relationship between hourly wages and hourly productivity rather than per worker. Over a long period, the reduction in working time may differ from one country to another.
- Lastly, the endogeneity of some explanatory variables can also be the source of serious bias when using the DG ECFIN method. Indeed, our theoretical model suggests that variables such as productivity or the unemployment rate are probably not exogenous with respect to wages.

Consequently, it seems difficult to confirm conclusions on the effects of indexation by means of the econometric analysis undertaken in the DG ECFIN study.

Empirical results using a VAR (Vector Autoregressive) method for four countries, with and without indexation

Taking into account the issue of endogeneity described above, a VAR model was set up and estimated for the four countries involved. A VAR (Vector Autoregressive) model is a system of

equations in which all variables are considered at the outset to be endogenous. Each variable is explained by its own previous values and the previous values for all other variables in the model.

We have estimated a VAR model for each country (Luxembourg, Belgium, Germany, and France) for the period 1976-2011 and for various levels of aggregation: total economy, the tradable sector, and, for Luxembourg, a disaggregation into the manufacturing industry and business services sectors. The models are in terms of hourly wages and hourly productivity.

Our analysis has a certain fragility due to a relatively small number of observations for VAR modelling. Moreover, significant changes in the data series took place in the mid-1990s, and data on working hours appear to be subject to structural breaks. Despite these reservations, this econometric analysis provides certain interesting results:

- Long-term relationships are obtained between traditional explanatory variables and hourly remuneration in the four countries in question, with or without wage indexation mechanisms. In general, the various coefficients show more similarities than differences between countries. There are no systematic differences between countries with or without automatic indexation. This overall result is a sign that the presence of an indexation system does not cause a radical change in the way in which wages are set in the long term.
- For the four countries, and whatever the level of disaggregation, the econometric estimations imply that hourly remunerations have an elasticity which is not significantly different from one with respect to the consumer price index. In the long term, indexation, even if it has not been institutionalized, seems to be a valid proposition in all four economies.
- As regards the effect of the unemployment rate on hourly remuneration, the coefficients for the four countries exhibit some differences, but are still quite close. The coefficients are negative throughout, and significantly different from zero. This is a major difference with regard to the Commission study, which obtained non-significant results for the group of countries with indexation.
- The other variables, namely productivity, competitiveness indicators, or real exchange rate terms have the expected sign and are significant in all of our estimations.
- Estimating a VAR system also allows for a comparative analysis of the dynamic effects of exogenous economic shocks in economies with or without automatic indexation. For the four countries in question, we have calculated the short- and long-term effects of an exogenous increase in consumer prices. The impact is comparable in the four countries. Nevertheless, in Germany, the effect of the shock is dissipated more quickly than in the other countries. In France, in contrast, the wage-price spiral is the most significant. Price and wage dynamics are similar in Belgium and Luxembourg, and midway between the

German and French dynamics. There is thus no reason to conclude, on this basis, that automatic mechanisms for indexing wages significantly change the dynamics of wage adjustments.

Hence this comparative econometric study, applied to four countries with or without indexation mechanisms, shows that the presence of institutionalized indexation does not significantly alter the process through which hourly wages are set, as revealed by the long-term relationships or dynamic reactions to an exogenous shock. In other words, whilst differences in wage flexibility exist, their causes may be found elsewhere and not necessarily in automatic indexation mechanisms. Beyond the perimeter of this study, factors for the adjustment or inflexibility of wages might rather be sought in other directions, such as wages upon recruitment, inter-sector flexibility, the variable portion of remuneration, or changes in the composition of the labour force by sector, for example.

Introduction

Au cours des dernières années, le Luxembourg a connu un taux d'inflation généralement supérieur à la moyenne de l'Union européenne (UE) et de nos pays voisins.

L'indexation automatique des salaires a souvent été suspectée d'être la principale cause de l'évolution plus rapide de l'inflation au Luxembourg. L'indexation des salaires a suscité une série d'études au cours des dernières années, chaque adoptant un point d'attaque différent, que ce soit en terme de méthodologie, de données ou de niveau d'analyse. Un bref aperçu des études récentes a été présenté dans le Bilan Compétitivité 2010¹. La Banque Nationale de Belgique a publié en 2012 une étude analysant l'ampleur, la nature et les conséquences de l'indexation pour l'économie belge et a étudié des alternatives possibles². Récemment, dans le cadre des travaux de l'Observatoire de la formation des prix du ministère de l'Economie, une étude juridique s'est plus particulièrement intéressée aux mécanismes conventionnels et automatiques d'adaptation du prix des relations contractuelles³. De plus, sur base d'entretiens réalisés au sein d'entreprises artisanales et commerciales localisées au Luxembourg, une étude micro-économique a analysé les mécanismes d'adaptations de prix par les entreprises au Luxembourg⁴.

La présente étude est motivée par les doutes méthodologiques autour d'une étude de la Commission européenne publiée en 2011⁵ qui a trouvé que les pays avec un système d'indexation des salaires avaient un comportement de formation des salaires plus rigide que les pays sans adaptation automatique des salaires.

L'Observatoire de la compétitivité du ministère de l'Economie a commandité en 2013 auprès de l'Université du Luxembourg une étude analysant plus en profondeur les effets potentiels de l'indexation automatique sur la formation des salaires au Luxembourg en comparaison à ses pays voisins. Cette étude a été réalisée par Henri Sneessens et Arnaud Bourgain du CREA de l'Université du Luxembourg et par Fatemeh Shadman et Kirti Mehta de MeSh Analytics. Cette étude s'est avérée d'autant plus importante que maintes organisations internationales comme l'OCDE, le FMI et la Commission européenne n'ont cessé de recommander au Luxembourg d'abandonner au moins partiellement le mécanisme d'indexation traditionnel auquel les salariés et les organisations syndicales sont attachées.

L'objectif de la présente étude a été d'analyser la méthodologie ainsi que les principaux résultats de l'étude de la Commission européenne citée ci-dessus et d'autre part, de procéder à une analyse avec les données les plus récentes et les méthodes économétriques les plus adéquates. Le Luxembourg et la Belgique disposent d'un mécanisme d'indexation automatique des salaires tandis que la France et l'Allemagne ne connaissent pas un tel système. Cette étude montre qu'un

¹ "Bilan Compétitivité 2010", *Perspectives de politique économique N°16*, octobre 2010.

² "Indexation en Belgique: ampleur, nature et conséquences pour l'économie et alternatives possibles", Banque Nationale de Belgique, juin 2012.

³ "Modalités de la réglementation des clauses d'indexation de prix en France, Allemagne, Belgique et Luxembourg", *Perspectives de politique économique N°19*, mai 2012.

⁴ "Etude des adaptations de prix des entreprises au Luxembourg", *Perspectives de politique économique N°26*, juillet 2013.

⁵ "Labour Market Developments in Europe", 2011, European Commission.

mécanisme d'indexation institutionnalisée ne modifie pas significativement le processus de formation des salaires. Les auteurs concluent : « *En d'autres termes, si des différences de rigidité salariale existent, leurs causes seraient à trouver ailleurs que dans les mécanismes d'indexation automatique* ».

Ce travail d'envergure vise à nourrir les réflexions engagées sur les clauses d'indexation automatiques et complétera l'ensemble des études dédiées à la formation des prix et des salaires au Luxembourg.

