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The political economy of strikes

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Abstract:
The macro data for industrial conflicts have a strong pattern, which has a substantial international element, but the theories explaining the pattern are in a poor state. Three macro theories are identified. They deals with three links between strikes and society: (1) Conflicts are explained by the development in real wages. (2) Conflicts cause production losses, and hence they are an important factor is socio-political instability. (3) The large cross-country difference in conflict levels are explained by the structure of labor market organizations and their political parties. The stylized facts reveals that all three are contrary to these facts. (i) Conflicts are closely associated to inflation of prices and wages, but not to real wages. (ii) The production losses due to conflicts are negligible at a national level. (iii) The large cross-country difference in conflict levels have vanished. Consequently, new theory is needed in the field.

Keywords: Strikes, price-wage dynamics, structure of labor markets
Jel code: E31, J52

1. Introduction: Little theory and new facts

This chapter is about the links between the (macro) economy and industrial conflicts. It appears that only three theories exists: The first two are old and have disappeared from the literature, while the third is partial so that strikes is one indicator in an aggregate variable. Due to the state of theory in the field, the survey concentrates on presenting the stylized facts about the macro level of industrial conflict. It appears that the facts contradict all three theories.

On a personal note, I should say that I undertook this survey because I was active in the field 30 years ago and wanted to come back and see what has happened in the meantime. During the work, I was amazed to find that the literature has been largely dormant.

Theory (1) is standard economics. It deals with the link between conflicts and wages; see Ashenfelter and Johnson (1969). Wage agreements are in nominal terms, but economic theory suggests that they have a real basis, and the theory looks at the relation from ***real wages*** to the level of conflicts. The data show that it is not real, but nominal wages that count. Thus, it is a field where money illusion is strong.

Theory (2) is political science. It explains the cross-country pattern of strikes by the political structure of the ***labor markets*** of countries; see Hibbs 1976 and 1978. It stresses the difference between the low strike level under the unified labor movement in Northern Europe and the high strike level under the fragmented unions in Southern Europe. The data show that the said difference in conflict levels has vanished.

Theory (3) is political economy. A literature about the SPI-variable (socio-political instability) show that such instability causes low investments and hence less growth; see Alesina and Perotti (1996). In some later versions (such as Ghate et al. 2003) strikes is taken as an SPI indicator. A key link in the model is that a raising SPI causes a short run ***production loss***, and through lower investments a long-run growth loss. The data show that the conflict levels have a very weak relation to production.

The paper proceeds as follows: Section 2 covers at the data, the techniques used and the (missing link) from the micro theory of strikes to the macro pattern. Section 3 looks at the stylized path of strikes in 22 developed countries, and show that they are closely related the nominal wages and prices, while section 4 considers the real links between conflicts and real wages, growth and unemployment, where theory (1) and (3) predict that the main links should occur. Section 5 discusses the cross-country differences, where the pattern according to theory (2) has changed to make the old theory redundant. Section 6 concludes.

2. The data, the methods used, and the missing link to micro

The strike variables used in the discussion are defined in Table 1. One subsection deals with each of the three subjects of this section.

It is important to keep the ***tininess fact*** in mind: With a labor market participation of 50% and an annual workload per participant of about 240 days, the total days worked per million people are app 120 million days. The mean of the variable *Days* (lost due to conflicts per one million inhabitants) is about 70,000. This is about 0.2% of the days worked. This may still have repercussions in a supply-constrained economy, but if the economy is demand-constrained, it is likely to be of no consequence as argued below.

Table 1. The variables used: their names are in italics with the first letter in capitals

Strike variables, per million inhabitants	Other variables
Numbers of conflicts	*Prices*, rises in % of CPI, consumer price index, from OECD
Workers involved – weakest data	*Wages*, rise in % of wages in manufacturing, from ILO
Days lost to conflict	*Growth,* of real GDP per capita in %, from Maddison Project
Source: ILO, International Labor Organization	*Unemployment,* rate in %, from OECD
	Members, of trade unions in %, from OECD

2.1 The data of Tables 1 and 2

The ILO reports the strike data, which are collected by different agencies in the countries. The data consists of three series: The numbers of conflicts, the workers involved, and the days lost. The first and the last series per 1 million inhabitants are the variables ***Numbers*** and ***Days***.

Numbers counts a big strike as one. *Numbers* become large, when there is a wave of wildcat strikes, even if each strike is small. Thus, *Numbers* is closer to the grassroots on the labor market (nominal link), while *Days* are closer to production (real link). *Days* allow national conflicts to be big, but as they are rare, thus *Days* have sharp occasional peaks. Both variables have the same clear macro-pattern that generalizes across countries, with a ***Big Wave*** of the mid-1970s and a ***large fall*** since then; see section 3.1.

The data have many gaps and quirks as indicated by the copious notes to the tables. Lockouts may or may not be included. Some countries exclude the data for political conflicts; e.g., the events of May 1968 in France is missing in the data. In addition, wildcat strikes are likely to be underreported. After a conflict, both parts may want to forget that it ever happened.

Table 2. The 22 countries covered

No	Country	*Numbers* of conflicts	Workers involved	*Days* lost
1	Australia	Gap 2009-12 and 2014	Gap 2009-12 and 2014	Gap 2009-12 and 2014
2	Austria	Many gaps	From 1953 93 later gaps	From 1953 93 later gaps
3	Belgium	Gaps 81-84, 86-87 and from 2001	Gaps 81-84, 86-87 and from 2001	Gaps 81-84, 86-87 and from 2008
4	Canada	Gap in 2007	All	All
5	Denmark	All	All	All
6	Finland		Gap 2009-10	Gap 2009-10
7	France	Gap 1968 and from 2004	Gap 1968 and from 2004	Gap 1968
8	Germany	Start 2009	Ends 1971	Gap 1972-92
9	Greece	Start 1950, gap 1956, 1968-75 and after 1998		
10	Ireland	All	All	All
11	Israel	All	All	All
12	Italy	From 1949-2009	From 1949-2008	From 1949-2008
13	Japan	To 2013	To 2013	To 2013
14	Netherlands	To 2015	To 2015	To 2015
15	New Zealand	Gaps from 2013	Gaps from 2013 and 2008	Gaps from 2013 and 2008
16	Norway	Gaps 2009-12 and 2015		
17	Portugal	From 1977-07 and 2012-14	From 1977, 1979-07 and 2012-14	Missing
18	Spain	From 1963	From 1963	From 1963
19	Sweden	To 2013	To 2013	To 2010
20	Switzerland	Gaps 1961, 73? 93?	Gaps 1961, 73?, 93?, 15	Gaps 1961, 75, 89, 95
21	UK	Ends 2015	Ends 2015	Ends 2015
22	USA	Gap 73, 16 shift 1974	Gap 73, 16 shift 1974	Gap 73, 16 shift 1974

Conflicts often involve organizations of employees and employers. Such organizations are 'friends' of one or more political parties at either side of the left/right divide. Thus, politics often enter the conflicts. Countries have more or less central wage contracts extending one to three years between workers and firms. These contracts have a legal status, making some conflicts illegal, so there is a great deal of labor law involved in conflicts, and law differs between countries.

2.2 Techniques: kernel regressions and correlograms

To display the stylized facts two types of correlation techniques are used. They are carefully discussed in Paldam (2021, Cpt. 2). As the data has many gaps, the paper uses unified data, where all observations are merged into one string, organized by an explanatory variable. The first technique is kernel regression:

(1a) $y = K^y(x, bw)$, which shows if x can explain y

(1b) $x = K^x(y, bw)$, which shows if y can explain x

The kernels are moving averages smoothed by Epanechnikov kernel with the bandwidth *bw*. They use the unified (*y, x)*-data organized (i.e. sorted) by either *x* or *y.* The kernel is surrounded by 95% confidence intervals. The program (stata) calculate a rule-of-thumb estimate of *bw*. It is close to the optimal bandwidth giving the clearest picture. The kernels reported are robust to a range of bandwidths around the ones chosen for the graphs. Thus, for (1a) H0 is that *x* can explain *y*. It is rejected, if a horizontal line can be drawn within the confidence interval.

The two kernels (1a) and (1b) are alike if the relation between the two variables is simultaneous. However, if the main causal direction between the two is one-way, they look quite different, due to the sorting. If the causality is mainly from *x* to *y*, kernel (1a) is easy to interpret, while (1b) gives a weak and confusing picture.

When *x* is time, the kernel shows the path of the variable *y* over time in the average country; see Figures 1, 2 and 12. Here the reverse kernel makes no sense. When both *x* and *y* are variables the kernel shows if *x* can explain *y*; see Figures 3, 5, 8 and 10. Here the result may go both ways: Figure 3 shows that *Numbers* can explain *Wages*, while Figure 8 shows that *Days* have no effect on *Growth*.

The second technique analyzes the observations using the panel representation of the data. It depict average (across country) correlograms between the variables; see Figures 4, 6, 9 and 11. It is calculated for series x and y as:

(2) Correlogram: $\text{cor}(x_t, y_{t+i})$, where $i = -5, \ldots, 0, \ldots, +5$, which is 5 lags and 5 leads

The vertical axis at $i = 0$, where the two series are for the same year, divides the correlogram curve in two parts: The left hand side shows the correlations where variable *x* is 5, 4, 3, 2 and 1 years before variable *y*. The right hand side shows the correlations where *y* is 1, 2, 3 4 and 5 years before *x*. The vertical distance of the correlogram-curve to the x-axis, shows the underlying correlation due to common trends in the two series. The one sided level of significance for the coefficient of the correlation for $N = 50$ to 67 years is about 0.20 to 0.23. The average correlation for 17 to 20 countries has a lower significance level such as 0.10.

If the two variables are perfectly simultaneous, the curve would be symmetrical around the vertical axis at zero. Perfection is rare, so there is normally some asymmetry. To highlight the asymmetry, the part on the curve that is numerically lowest is drawn as the *symline* to the other side. The area between the high part of the curve and the *symline* is the "amount" of asymmetry. The 'excess number on the graphs is a simple sum of the difference. It is a rather crude statistic, as it is arbitrarily truncated at five lags, where the first two are the important

ones. If the excess is to the left-hand side, the strike variable predicts the other variable. If the excess is to the right-hand side, the other variable predicts the strike variable. Both cases points to causality in the Granger sense.

2.3 The missing micro foundations

It is an ideal that the macro theories can be reached by an aggregation of micro theory, but this ideal is rarely attainable, and it is certainly not attained is the case of industrial conflict.

Almost the whole of the meager literature on industrial conflict are micro-models of an individual conflict between a worker and a firm; see Kennan (1986) and Card (1990). It normally assumes that the worker is the aggressive part, who wants an increase in the wage contract. In a growing economy, this is a realistic assumption. In the ***primal*** model, the worker knows that that the strike costs are his wages during the conflict. The benefits are expected future wage gain resulting from the conflict. The employer has to minimize the sum of two losses: lost production during the conflict versus increased future wage costs. Thus, the primal model is an asymmetrical game around a cost-benefit calculation on the two sides. The calculations have to consider how wages would have developed in any case.

The game quickly becomes more complex as the firm has many workers. The costs for the individual from striking is often less than the costs of being a strikebreaker (a scab!). In addition, workers are often compensated from the union conflict fund, and if everybody in the union contributes to the fund, the marginal contribution of each worker is much the same, whether or not he strikes. Hence, the calculations of the individual worker are quite complex, and in many cases he becomes a marginal player in a much bigger game.

The employer may have accumulated inventories in expectation of a conflict and perhaps have other production facilities that may or may not strike in sympathy so perhaps his losses is smaller than it looks at first. In addition, few producers are so close to the capacity limit that a production loss of one to two weeks cannot be made up in the next few months.

Furthermore, there is the rational expectations view on conflicts going back to Zeuthen (1930). Why would two monopoly organizations engage in costly conflict, if they have rational expectations about each other, so that they know in advance, where the compromise will end? Thus, conflicts are due to faulty information on the two sides about each other. The process of negotiations is then a game of information exchange and a conflict is a signal in the game.

The top negotiators of the two sides actually know a lot about the other side, and if they were free to negotiate, they would probably be able to agree quite quickly. However, both parts have an organization they have to satisfy. Experienced negotiators have strong roots into their

member-base and know where their people wants them to bargain especially hard, and where they may be less tough. The rank and file members are surely much less informed. The negotiations of wage contracts take some time, and at the start, the organizations make an effort to heat up their members to stand strong on their highly justified claims and grievances. Later as the compromise is getting closer, it may be difficult to cool down the members. Sometimes a conflict is a necessary part of the cooling process.

In addition, both parts often brings in additional players, or such players may enter on their own accord. Unions of both employees and employers have connections to political parties and the press. These connections are used to put pressures on the other part. Both sides may also have competing organizations, or fractions within organizations, which are more or less moderate. The extreme want to signal that they can obtain more for their members than the more moderate ones can. In countries where wage negotiations are fully or partly centralized many tries to put pressures on the negotiators. At the workers side there is the old socialist rhetoric about class-conflict and exploitation. This rhetoric may be strong and emotional, supported by red banners at demonstrations or even riots. The emotions are pushed by reports about the income and life-style of 'capitalists' and their 'lackeys', i.e. owners and managers.

This all means that strike frequencies have a strong factor of *mass level political economy*, just as the popularity of political parties and governments. A large literature looks at vote and popularity functions; see Lewis-Beck and Paldam (2000). Here it appears that while the movements of the macro-variables explain something there is great deal the researchers have not been able to give rational explanations. To some extent, voters are behaving expressively sending signals to their leaders. The basic logic of expressive voting is that the individual voter (union member) has only an infinitesimal influence on a vote outcome. Thus, the individual can be much more idealistic, when she votes than in her private decisions.

Finally, many conflicts are also due to wage rises in other firms. If the workers of one firm or in one union get a wage hike, others will fight to get the same.

Consequently, strikes contains a large element that is difficult to catch with the logic of the rationality of the primal model. Once aggregate strike frequencies are analyzed, the rational elements in each conflict are likely to become less prominent. Therefore, what comes to dominate becomes a story where the micro theory is largely irrelevant. Close observers of the labor markets in their country often claim that an important element is the *mood* of the market that is another word for the *expressive* component in wage formation.

3. The pattern of strikes and the inflation of prices and wages

Before we turn to the three theories, the stylized facts of the conflict levels will be considered. The key observation is that strike data contains a big wave. The wave corresponds closely to the parallel wave in nominal prices and wages.

Section 3.1 looks at the cross-country development in strikes over time, while section 3.2 compares with the series for inflation of *Prices* and *Wages*. Section 3.3 asks if conflicts can explain price-wage inflation. Section 3.4 analyzes the lead-lag structure of strikes and inflation.

3.1 The Big Wave and the Large Fall

Figure 1 report the path of over time in the average data for industrial conflicts, per 1 million inhabitants, for the 22 countries. Figure 1a covers the *Numbers* of strikes and Figure 1b covers the *Days* lost due to conflicts.

Missing observations are disregarded, but there are still over 1,300 observations behind each curve. The curves for *Numbers* and *Days* show roughly the same pattern. The average is a bit erratic for *Days* due to large conflicts in one country or another, but the kernel-curve tracks the main pattern rather well, and it has confidence intervals – especially for *Numbers* – that are so narrow that their form is well determined.

The two graphs on Figure 1 look as one complete cycle. During the World War, labor markets were heavily controlled, so there was a small wave of pent up conflicts in the early post-war years followed by a downswing from 1948-59. The labor markets stabilized during the 1950s, and conflicts bottomed out 1959-61. Then followed a large rise that turns into the Big Wave of conflicts that reached a peak in 1975/77. It is followed by an almost symmetrical downturn. By now, conflicts have fallen to a low level. The large fall in the level of conflicts provides an explanation why the literature on industrial conflicts has vanished.

The confidence intervals on Figure 1a become a little narrower if extreme values are omitted, but they are so narrow anyhow that if the missing observations had been available, they would probably give marginal changes only. Figure 1b is a bit more uncertain, but still rather well determined. Note that the peak of the Big Wave is one year later on Figure 1b. It also shows a dubious peak in 1987 that is due to Greece.

When the two curves is drawn for the 22 individual countries, the pattern shown is visible in all of them, though it is stronger in some than in other countries. In addition, there is a small second wave around year 2000, but it came to nothing.

Figure 1a. *Numbers* in the average country

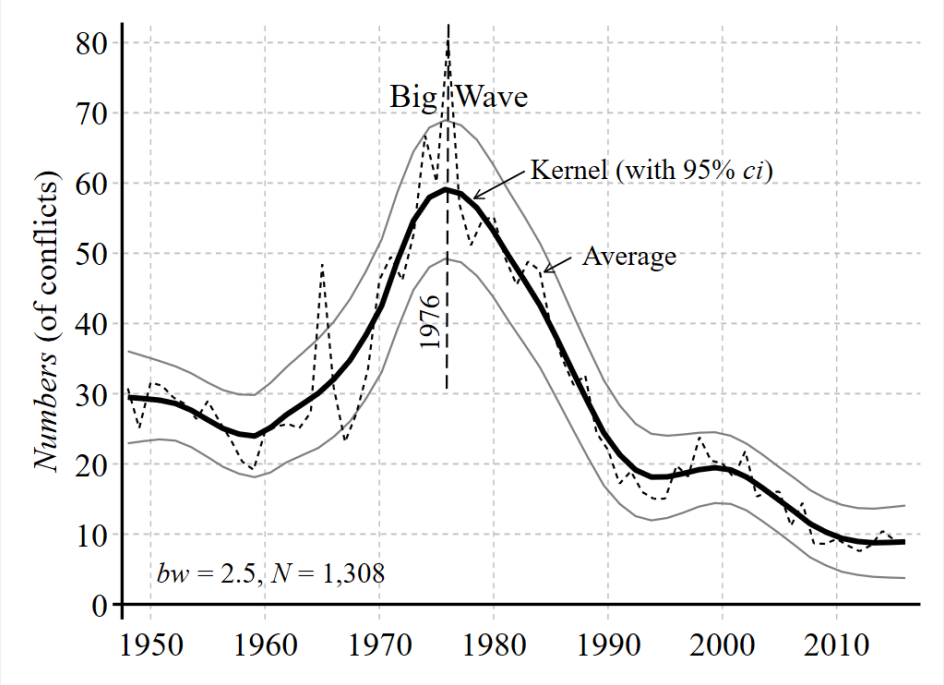
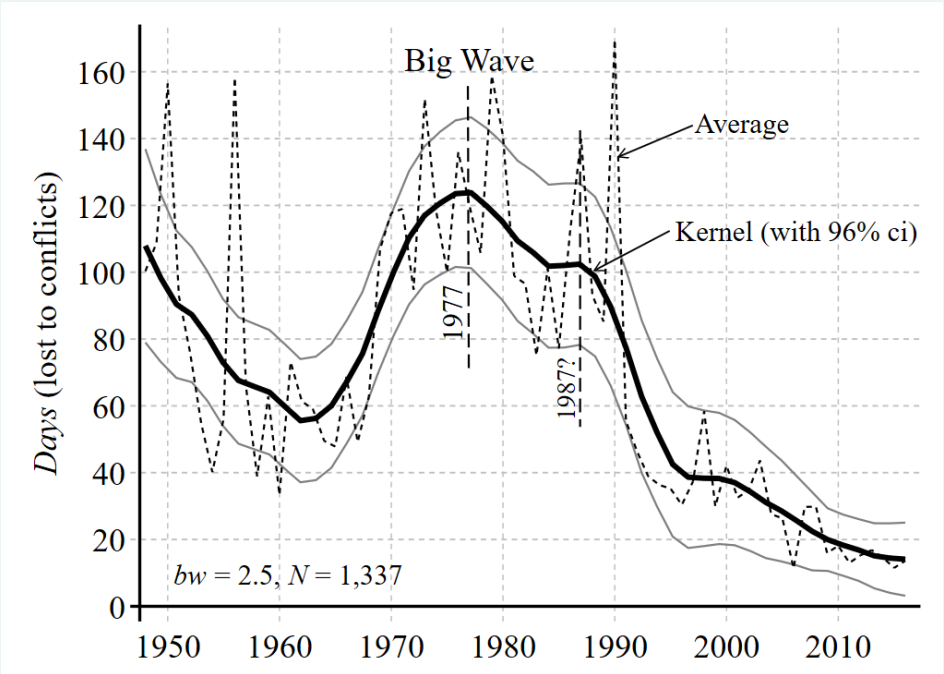


Figure 1b. *Days* in the average country



Note: *ci* is confidence interval, *bw* is bandwidth. If the data were available for all 69 x 22 = 1,518 cells in the panel, it would have given 16% more observations for Figure 1a. The data are per one million inhabitants in the countries. For Figure 1b, only 14% of the potential observations are missing. The questionable peak in 1987 is due to Greece.

3.2 The parallel pattern in price-wage inflation

Figure 2 reports the path of price-wage inflation in the countries. It has much the same cycle as *Numbers*, and it is close to the curve for *Days*. Thus, the graphs demonstrate three points that

will be further analyzed in the following sections: (i) Conflicts have a strong relation to nominal price-wage rise. (ii) Once inflation took off, it did so rather dramatically. (iii) The confidence intervals on Figure 2a became very narrow just before year 2000 and have stayed narrow. The reader should note the kernel curve for *real wages* – it is discussed in section 4, but it is obvious that it has a much smaller relation to the conflict series.

Figure 2a. Inflation of *Prices* in the average country

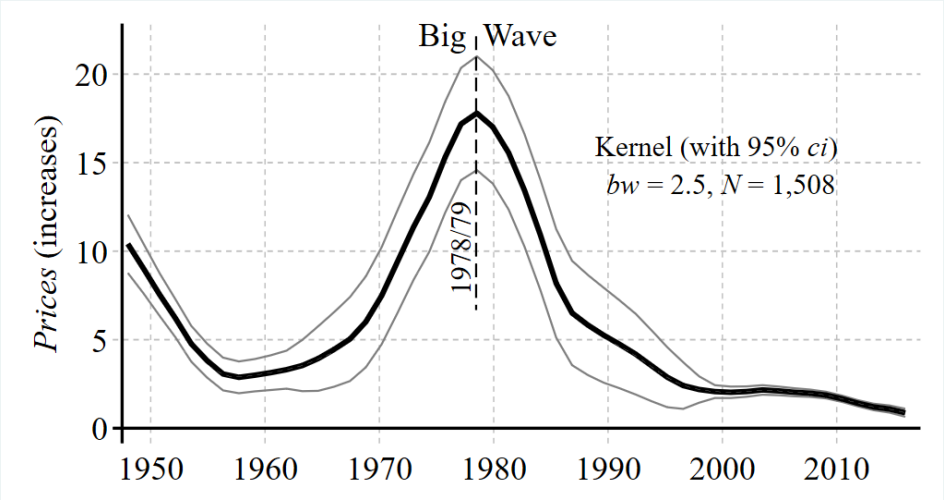
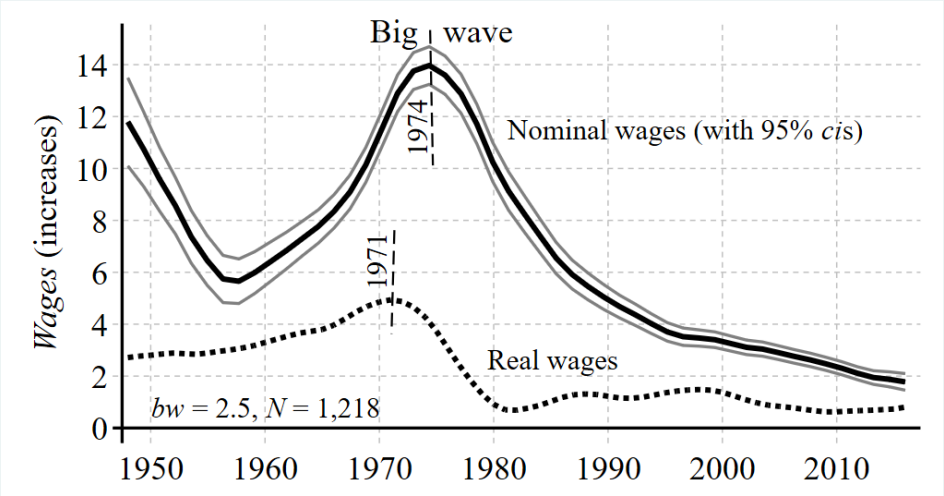


Figure 2b. Inflation of (manufacturing) *Wages* in the average country



Note: See Figure 1. Inflation is in percent. Several countries have gaps in the wage data, especially for periods of high inflation. Thus, the confidence intervals become narrower on Figure 2 than on Figure 1.

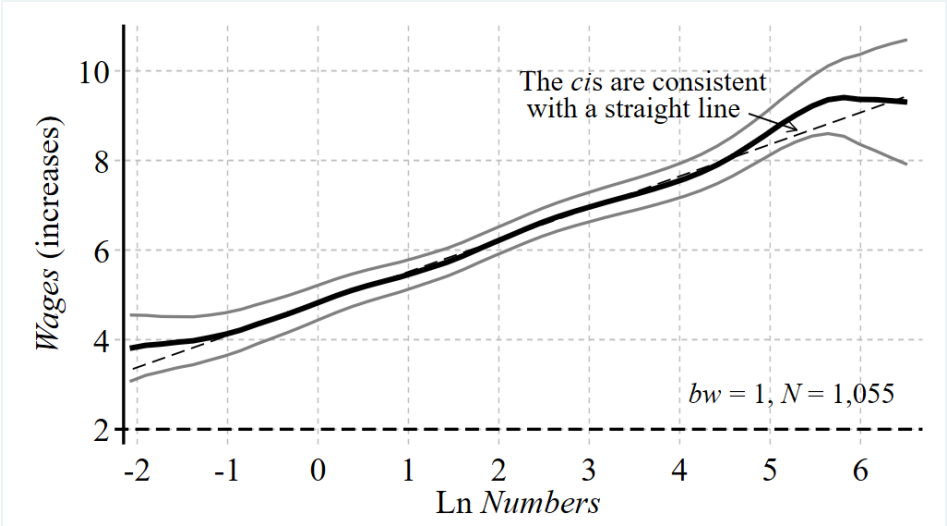
Most conflicts are about wage rates. Thus, it is not so strange that conflicts are linked to nominal wages and inflation. This link deals with mass level political economy. The mood of the labor market and the economic policies such as they play out. The plain number of

conflict – the variable *Numbers* (see Table 1) – is the relevant measure to study this link. In addition, it has an international element. Strikes lead nominal price-wage increases, so strikes are a ***proxy for something bigger***, such as the 'mood' on the labor market, which is an unobserved mass-political economy factor. The findings in this section confirm that strikes is a nominal variable, as already shown in Paldam (1983).

3.3 Explaining Wages by Numbers (of conflicts)

Figure 3 is a first specimen of the 'can explain' kernel regression discussed in section 2.3. The figure confirms that *Numbers* can explain *Wages*. The (natural) logarithm to *Numbers* is consistent with a perfectly straight line that rises from 4% wage rises to almost 10%, which is a large part of the range of wage rises under normal conditions. However, the reverse choice of axes gives a curve, which is almost equally fine. These results generalize to *Days* and *Prices.* Thus, conflicts and price/wage inflation interact. The correlogram technique analyze how the interaction works over time.

Figure 3. Can *Numbers* explain *Wages*?



Note: The horizontal axis does not go through zero, but two. Hence, it is dashed.

3.4 Correlograms analyzing the lead/lag structure of strikes, Prices and Wages

Figure 4 gives four specimens of the correlogram graph introduced in section 2.3. It is an average of such correlograms for each country with more than 50 observations for both series. The correlogram curves on the four graphs show the same two points:

(1) All 11 points on all four correlograms are significant, as expected from Figures 1 to

3. It support the claim that strikes is a nominal phenomenon.

(2) On all four graphs, the excess is to the left, indicating that conflicts lead the development in price/wage rises more than vice versa. The lead is small for *Days*, but for the grassroot variable *Numbers* the lead is substantial. Note that the peak in the correlations is for the lead of one years. This will be the case if the strike giving a wage increase happens in mid-year so that the inflation it causes is mostly accounted for next year.

Figure 4. Correlograms between strikes and inflation

Figure 4a. *Numbers* and *Prices*

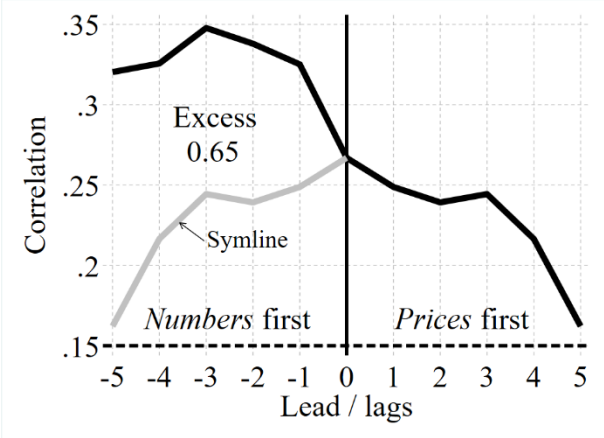


Figure 4b. *Days* and *Prices*

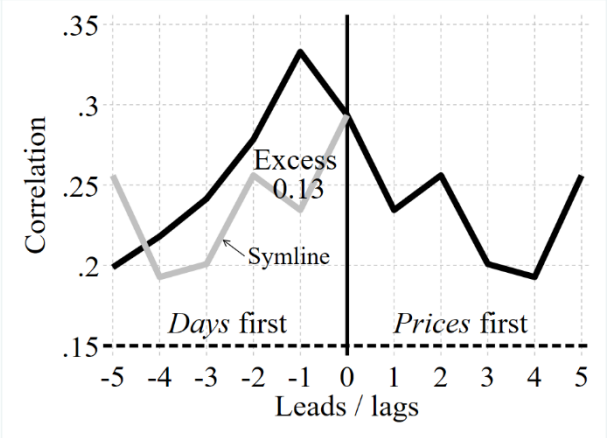


Figure 4c. *Numbers* and *Wages*

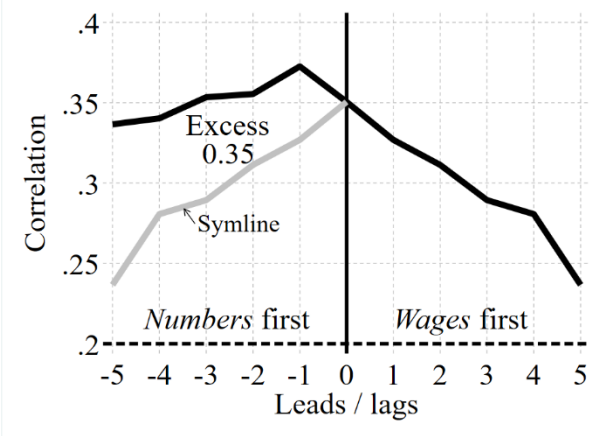


Figure 4d. *Days* and *Wages*

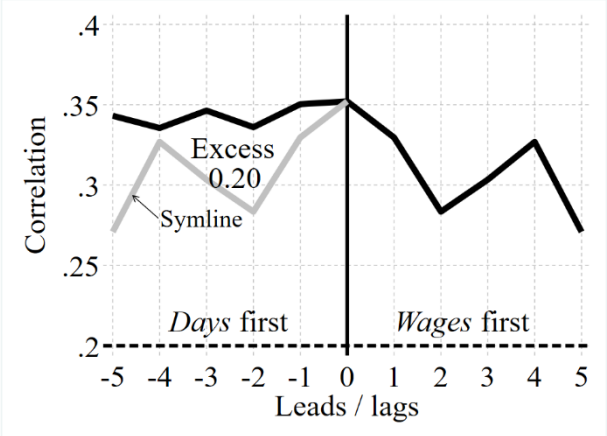
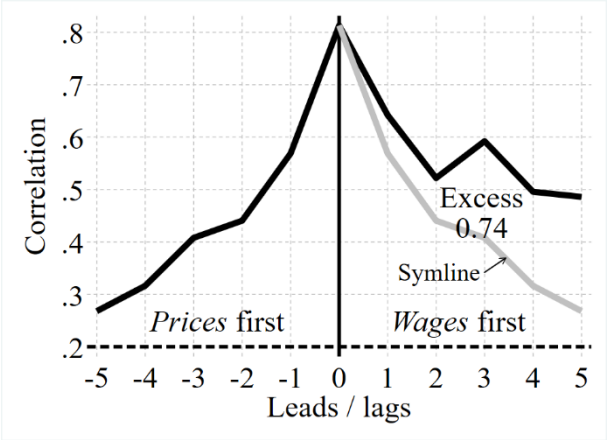


Figure 4e complete the picture of Figure 4 by showing the average correlogram between *Prices* and *Wages.* It show the high degree of simultaneity between the two inflation series. All 11 average correlations on Figure 4e are significantly positive, and the unlagged correlation is no less than 0.81. However, even when the simultaneity is strong there is still excess correlation for *Wages* leading *Prices*, but the lead is small the first two years, so it is not a clean causal relation.

Figure 4e. Correlogram of *Prices* and *Wages*



Note: The horizontal axis is dashed on all four graphs to make the reader note that the axis is not at zero correlation. The true x-axis is thus 0.15 and 0.2 correlation points lower. *Symline* is the line of symmetry for perfect simultaneity. All correlations are positive and most are significant.

The strong correlation of *Prices* and *Wages* with all 11 lags explains, why it so difficult to reach price-wage models, where the lags are well determined. Also, with the high simultaneity comes high autocorrelation in the price-wage series. For the purpose of the paper, it is important that strikes do predict inflation.

4. Real link: *Days*, *Growth* and *Unemployment*

The introduction argued that two links between strikes and the real economy is possible. Section 4.1 looks at a theory argue that it is real not nominal wages that are linked to conflicts, while sections 4.2-4 looks at the links via the production loss caused by conflicts.

4.1 Real vs nominal wages

It seems that only one macro model is available. It is the Ashenfelter and Johnson model from 1969. It considers strikes in a real perspective. Card (1990) stress the micro foundation of the model, but it hard to see how it leads to the estimated operational model. It explains the level of conflicts by the development in *real* wages relative to expectations. If real wage rises exceed expectations, workers are happy, but if the rises are below expectations, strikes occur. This model has fared poorly outside the dataset on which it was estimated. Paldam and Pedersen (1982) show that the pattern found in the USA data is an exception.

Figure 2b included the path of *real wages*. It peaked in 1971, five/six years before the

peaks in strikes. In addition, *real wages* have been almost stationary since 1980, rising with only about 1% p.a. However, as seen on Figures 1 and 2, this has not caused strikes, but a large fall in strike activity. Thus, it is difficult to see any connection between *real wages* and strikes. Consequently, the Ashenfelter and Johnson model fits the data poorly. This probably explains why it has disappeared. The figures (reported in the net-appendix) parallel to Figure 3, where *Days* or *Numbers* are used explain *real wages* looks much like Figure 5.

4.2 Real links due to the production loss due to conflicts

A conflict is an interruption of production, and there may be repercussions in other firms. Thus, conflicts should have real effects on production and growth. Days lost due to conflict – the variable *Days* (see Table 1) – is the relevant measure to study this link.

Figure 5. Can *Days* explain *Growth*?

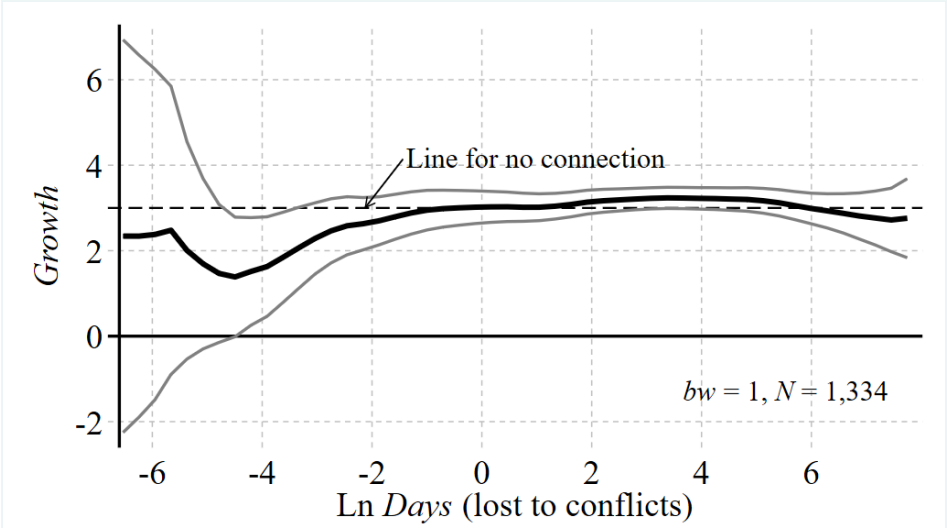


Figure 6. Correlograms between strikes and *Growth*

Figure 6a. *Numbers* and *Growth*

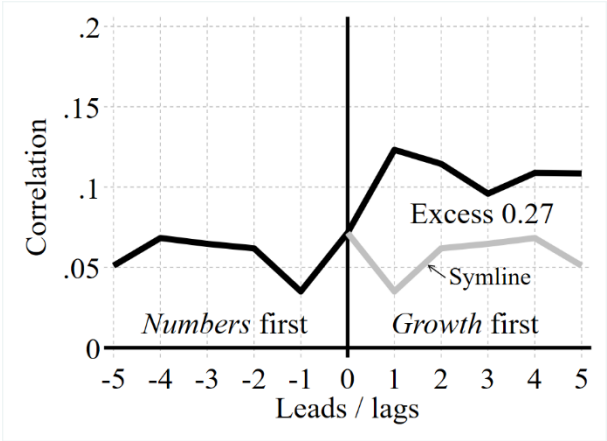
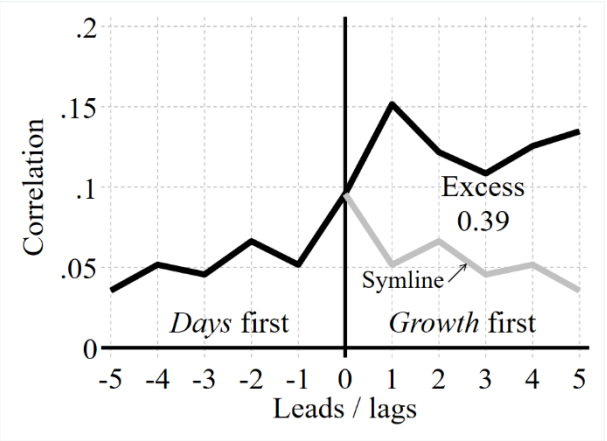


Figure 6b. *Days* and *Growth*



Figures 5 and 6 analyze if *Days* can explain *Growth* by the two techniques presented above.

Figure 5 shows that a horizontal line can be drawn (almost) within the confidence interval. Thus, cannot be rejected that the effect of strikes on the real product is zero. This is not surprising given the tininess fact (from the introduction). There is a small literature showing that conflicts have a negligible effect on the GDP even at the sectoral level, see Newman and Reder (1984).

Figures 6a and b confirm that strikes do a poor job explaining *Growth*, i.e. the correlations to the left of the axis are around 0.05 only, but there is a small peak to the right of the axis. That is, *Growth* in one year might give a bit more strike activity the next year, but it is borderline significant only.

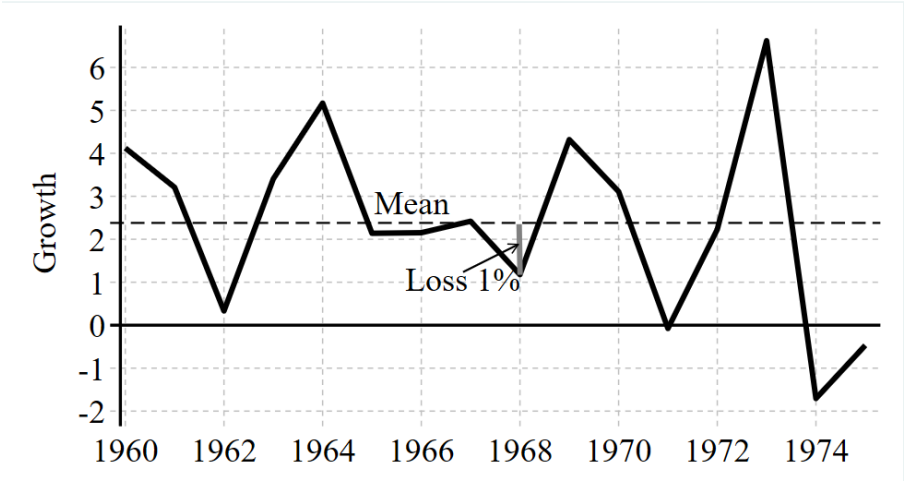
Macro theory sometimes discusses what the main constrains are in the short run. The finding that the production loss due to strikes is negligible is consistent with the notion that production is demand-constrained in the Western World, so that (small) disturbances on the supply side caused by conflicts are of no consequence. Think of an product chain from A to B to C and on to D. If a conflict occur in B and the economy is demand constrained A can sell to other producers and C can purchase from other suppliers, so the effect on the economy is small. If the economy is supply constrained it might be possible for A to sell to other firms, but C can not purchase from other firms so the conflict in B affect C, and perhaps also D. Therefore, the effect of the conflict is (much) larger.

4.3 The weak real effect of conflicts: Illustrated by the May 68 events in France

The small effect of strikes on production is illustrated by the May events of 1968 in France. It is commonly believed (see e.g. the entry 'May 68' in Wikipedia) that France was paralyzed by a 'revolution' lasting about 7 weeks. It consisted of a large wave of strikes and demonstrations. Workers and students occupied many firms and institutions, and made a vast menu of demands, including utopian ones.

The days lost due to the May-events are not reported in the ILO statistics, but seven weeks of work interruption is 14% of production. The interruption was probably less than that. If it is assumed that half of production did continue the loss was still 7% of GDP. Figure 7 shows the annual growth rate of France in 1968 and the surrounding years. It appears the loss was 1 percentage point, and it was offset by the high growth in 1969. All other strikes in the data are much smaller, so the picture on Figure 5 is not so surprising.

Figure 7. Annual (real) growth in France 1960-75



4.4 Strikes and Unemployment – a confusing picture

Unemployment may proxy the relative power of the parts in a Phillips-curve like relation, and thus it may affect the frequency of conflicts. Low unemployment improves the bargaining strength of workers, while high unemployment improve the strength of employers. It is well known that the Phillips-curve has had its ups and downs, but is seems reasonable that the idea works on strikes. Figure 8 shows that *Unemployment* can explain strikes, but the sign is the reverse of the one expected: The more *Unemployment* the more strikes. Thus, Figure 8 is strange, but Figure 9 looks much more as expected.

Figure 8. Can *Unemployment* explain *Numbers*?

Figure 9. Correlograms between strikes and *Unemployment*

Figure 9a. *Numbers* and *Unemployment*

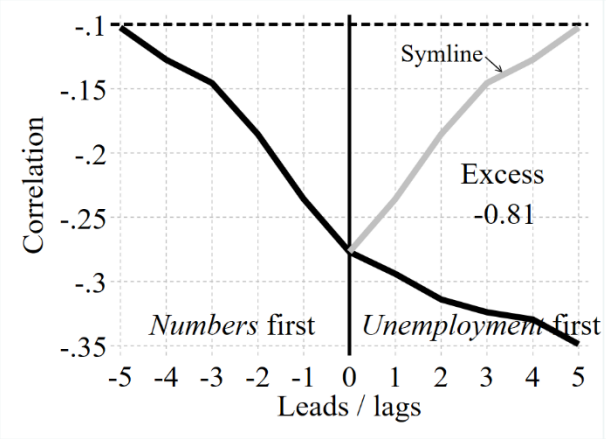
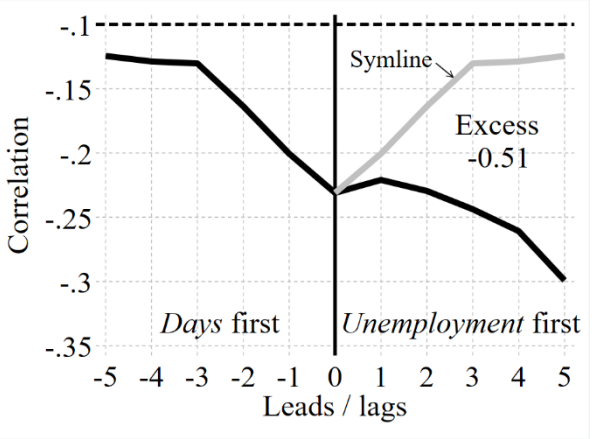


Figure 9b. *Days* and *Unemployment*



The reason why Figure 9 looks so different from Figure 8 must be that Figure 9 is a time series analysis, while the cross-country pattern dominates on Figure 8. The standard method to separate the time-series and cross-country effects is to use panel regressions with and without country fixed effects as done in Table 3.

Table 3. Panel regressions for *Unemployment* explaining strikes

	(1)	(2)	(3)	(4)
Strike variable (explained)	*Ln Numbers*		*Ln Days*	
Unemployment (with one lag)	**0.028** (2.4)	**-0.066** (-6.9)	**0.078** (5.2)	**-0.66** (4.8)
Constant	**2.184** (28.0)	**2.688** (45.2)	**2.393** (24.0)	**3.163** (37.0)
Fixed effects (for countries)	No	Yes	No	Yes
R^2	0.005	0.039	0.021	0.018
N of observations (countries)	1190	1190	1242	1242

Note: Parentheses contain t-ratios. Coefficient estimates that are significant at the 5% level are bolded.

The table shows three points: (i) The estimated coefficients are significant. (ii) The coefficient on *Unemployment* changes signs as expected. The sign is positive when country differences are disregarded in regressions (1) and (3). The sign change to negative, when fixed effects are used to account for country differences (2) and (4). (iii) The regressions explains little of the variation, i.e. the R^2s are all small. If fixed effects for years are added, the coefficient to *Unemployment* disappears. Thus, the analysis confirms that the link between strikes and the real economy is weak.

Consequently, the analysis above showed that strikes should not be a strong indicator in the SPI variable (for socio-political instability). However, a number of other indicators are

actually important for investments and consumption, and hence growth. This is not the place for a survey of these theories and findings. See however, Chapter 13 in Paldam 2021, which also reports empiric studies showing that changes in the economic and political system are detrimental to growth. Even reforms that are beneficial in the long run have short run costs.

4.5 Strikes and Members (of a trade union)

Members (unionization) peaked in 1977 with 48.5% in the countries of the sample; since then it has fallen to about 30% today. *Members* can explaining conflict, but as both strikes and unionization has been falling, it gives two confluent trends that may explain Figure 10. However, strikes did not always fall, and unionization increased before 1977. Thus, it is noteworthy that Figure 10 shows such a neat proportionality.

Figure 10. Can *Days* explain *Members*?

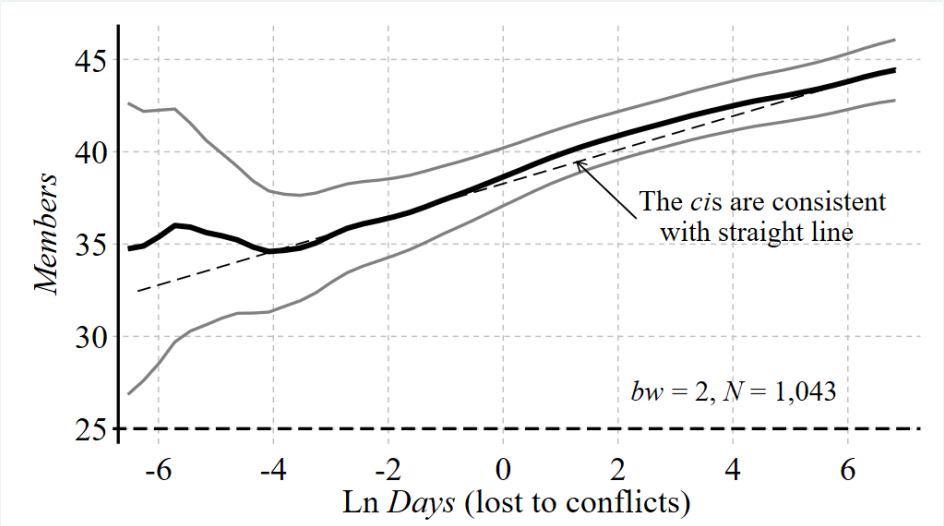


Figure 11. Correlograms between strikes and *Members*

Figure 11a. *Numbers* and *Members*

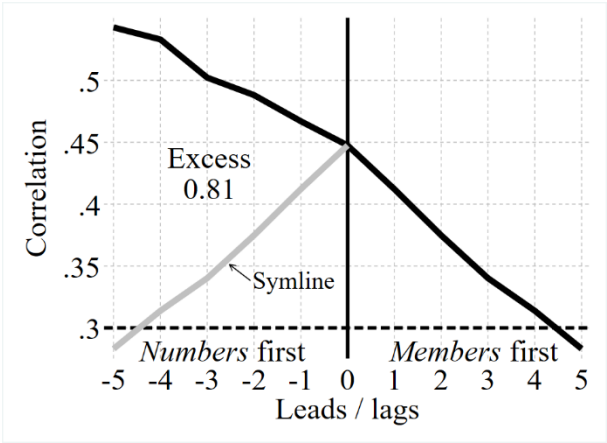
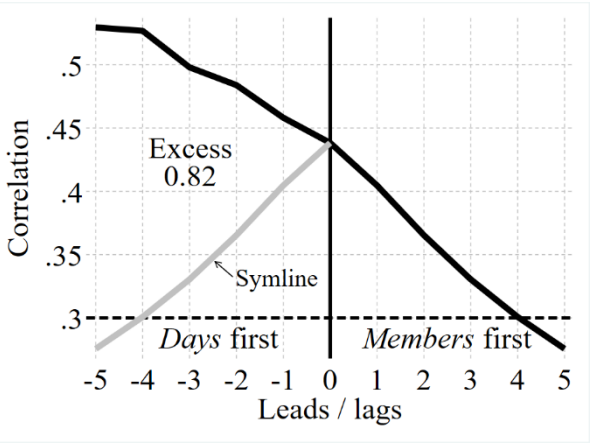


Figure 11b. *Days* and *Members*



It is interesting to note that Figure 11 suggests that it is the conflicts that causes *Members*. Workers do not strike because they are union members, they become members when they strike more.

5. The large difference in strike levels of countries vanishes

Much of the research on strikes sees them in the perspective of labor relations. As labor markets are organized differently across countries, this suggests that strike patterns may differ too. Section 5.1 looks at the main theory explaining the country differences. Section 5.2 shows that while the data used to support the theory, this is no longer the case. It also discusses why the theory ceased to work. Section 5.3 looks at the implications of the inflation convergence for European cooperation.

5.1 Hibbs' theory explaining the difference in conflict levels across countries

A few papers look at the differences between the levels of conflicts across countries, they refers to the theory of Douglas A. Hibbs; see his (1976, 1977) and Paldam and Pedersen (1984). The theory concentrates on the large differences in conflict levels between Northern and Southern Europe. The explanation given is the united labor movement in the center-left 'Social Democratic' Northern Europe versus the divided labor markets in Southern Europe where the left is strongly split. Section 5 shows that the large differences have vanished. The countries in the sample are be divided into three groups, which do not include Belgium, Israel and Japan:

Germanic/Northern Europe: Austria, Denmark, Finland, Germany, the Netherlands, Norway, Sweden and Switzerland. These countries are around Germany and have a united labor movement associated with a Social Democratic party that is frequently in government. This gave a low conflict level and low inflation.

Latin/Southern Europe: France, Italy, Portugal, Spain, and Greece. These countries had divided labor movements, due to large Communist parties. Thanks to the divided Left, most governments are to the Right. This gave a high conflict level and high inflation.

Anglo countries: Australia, Canada, Ireland, New Zealand, UK and the USA. These countries are mainly outside Europe – either geographically or (now) by choice. They are an intermediate case, which the following discussion disregards.

Figure 12a. *Numbers* in the three country groups

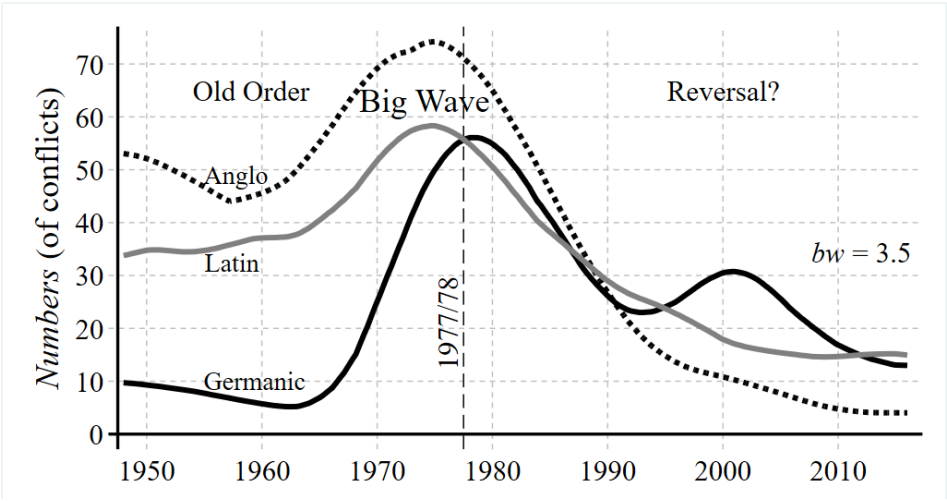


Figure 12b. Inflation of *Prices* in the three country groups

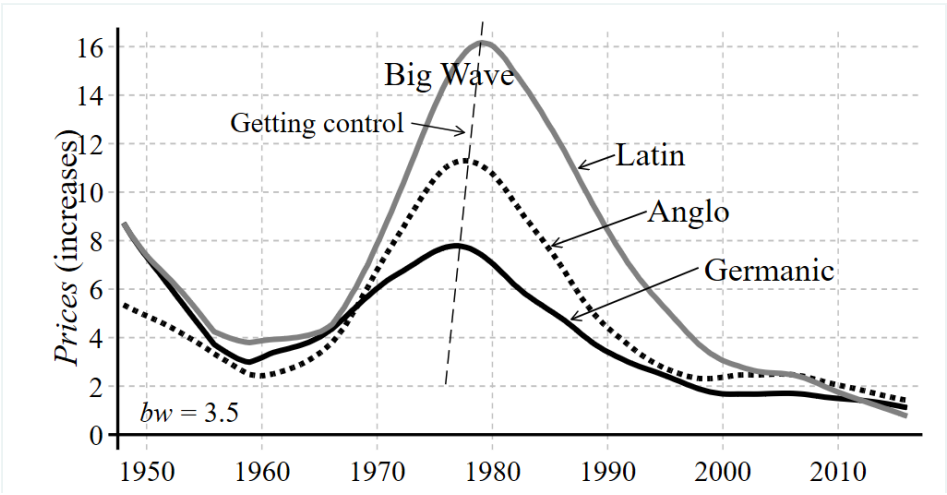


Figure 12a shows that before 1980 the strike levels were indeed different as predicted by the theory, Figure 12b confirms that this is nicely reflected in inflation levels. Until the late 1970s the strike level differed as predicted by Hibbs' theory. However, shortly after the publication of his two papers things started to happen; the lines began to cross, and today the order is practically the reverse, though the difference in the conflict level across groups is much smaller than it used to be.

The development in the conflict frequencies also holds for inflation, as shown on Figure 12b that corresponds to Figure 2. It is interesting to see that the big difference between the three country groups is due to the peaks only. An inflation wave happened everywhere, but in the Germanic group, it was brought under control already in 1977, and thus it only rose to 8%. In the Anglo group, control occurred a year later in 1978 and inflation reached 11%. In the Latin group, control came about in 1979 only, and in the meantime, it had reached 16%. The big gap

in inflation rates continued in the years it took to bring inflation down to 2%. From about 2000, inflation has been virtually the same.

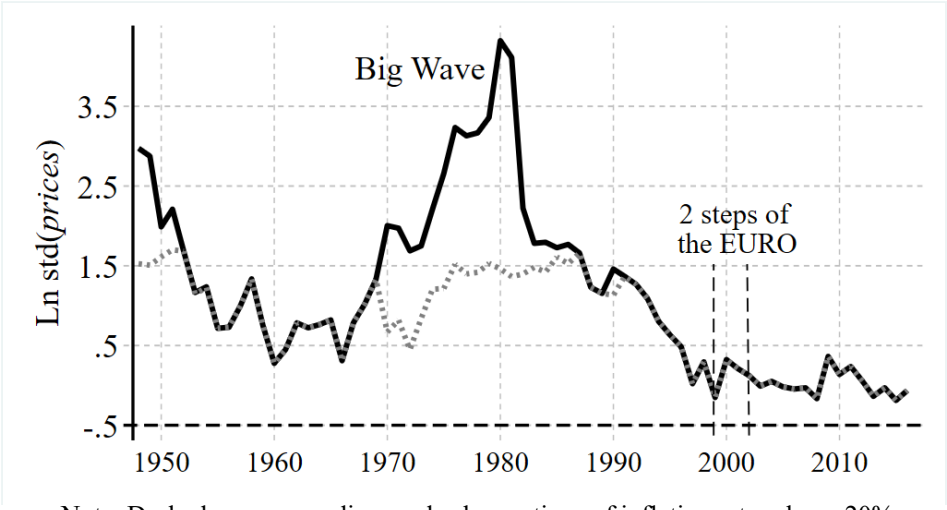
Hibbs' model was rather convincing for the period covered, but the big difference between labor markets has substantially decreased. This is partly due to the decreasing share of workers in the economy and partly to the collapse of the USSR. In addition, the wave of utopian socialism (the "youth revolution") from 1968 and the next 5 years showed that the dream of a socialist utopia was, in fact, a dream. This caused a decline of socialist fervor also in Latin Europe, making socialist parties smaller and less radical. Much the same has happened to the radical trade unions.

At the same time, the dominating right wing parties in Latin Europe had proven (once again) that power corrupts. This has caused a considerable discontent with such parties, and without a clear left wing threat, the political spectrum in Latin Europe has come to look more like the spectrum in Northern Europe. Thus, the model of the divided Southern labor markets versus the united Northern labor markets has turned much less clear, and lo and behold, the difference in strike levels has vanished.

5.2 What is the effect of European cooperation on the convergence of inflation?

Figure 13 is another way to see the convergence in inflation rates. It shows the cross-country standard deviation of the inflation rates; the corresponding graph for conflict levels looks the same. Note that the vertical axis is in logs. During the Big Wave, inflation got really bad in some countries, but in the last 20 years, inflation has been low and rather uniform.

Figure 13. The cross-country standard deviation of price inflation



Note: Dashed gray curve disregards observations of inflation rates above 20%.

The Euro was introduced as a unit of account in 1999 and as actual money in 2002. It is clear that the Euro can only work if inflation rates in the single currency area are similar in the perspective of a few years. High inflation is also highly variable, so for the Euro project to work countries need low inflation. Thus, the member countries agreed to tie themselves to the inflation rate of Germany, the big low-inflation country.

An interpretation of the political economy of this decision to introduce the Euro is that the countries had been through the Big Wave. Especially the South-European countries wanted German discipline, i.e. a low, stable and uniform inflation rate. They were actually quite eager to tie their hands!

Both the strike data and the inflation data suggest that the discipline has worked rather well. There are still individual countries that have some problems, but the big difference between the country-groups has gone. It will be interesting to see if the low standard deviation of the inflation rates can survive another wave of inflation.

6. Conclusion

This paper deals with the macro pattern in industrial conflict, which is an amazingly under-researched subject. Between 1965 and 1980, a small literature was written, but then it died. The stylized facts presented explains why the theories died. Neither theory seems to be relevant.

Since then much has happened and the strike-variables have fallen steadily and by now it has reached a historically low level of strikes throughout the developed world. However, we have seen that while the nominal link is strong, real link is weak. Two broad families of theories suggest the reverse causal interpretation:

Macroeconomics explains nominal quantities such as inflation by money, exchange rates, prices abroad, and the pressures of demand. Productivity – that comes from technology – determines real wages. In this tradition, strikes are a small secondary phenomenon, and if agents have rational expectations, strikes make little sense. Thus, there is little space left for strikes to play a role in the models! If the economy is demand-constrained as it normally is, it is likely that small supply shocks such as strikes can be absorbed with no real effect. Only when the economy is supply-constrained during boom times strikes may have an effect.

The theories of institutions and labor relations give an alternative perspective. During the big fall in the conflict levels, there has been a wave of labor market reforms and a large fall in unionization in all Western countries. This way of thinking suggests that institutional changes

cause the fall in conflicts, and when it relates to inflation, it is likely to have a causal role.

The introduction reported the tininess fact. The days lost due to conflict, in the average developed country is only about 0.2% of the days worked. This fact may explain why so little research has been done in the field. However, a great deal of data exists – the path of conflicts is known for most developed countries for the last seventy years. The data has a clear pattern, and this pattern is strongly related to other macroeconomic variables.

The main relation is to nominal price and wage rises. Though the relation is mainly simultaneous in the annual data, the strike variables do lead both the price and wage series. The interpretation of this finding is that industrial conflict is a proxy for the *mood* at the labor market, i.e. for the aggressiveness of the organizations and firms that set wages and prices.

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