

Labour Unions, Wage Restraint and European Monetary Union: The Rise of Sectoral Divergence

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Abstract:

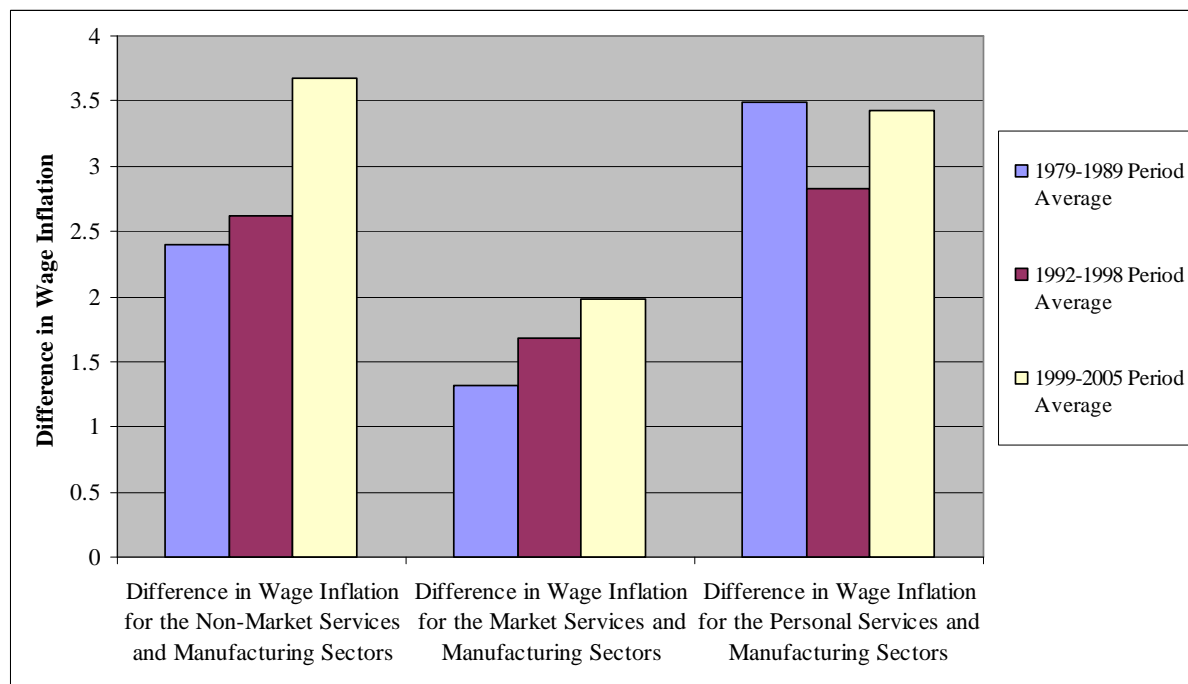
This paper examines the rising divergence in sectoral wage moderation within EMU member states since the introduction of the Euro. During the 1980s and 1990s, wage restraint cycles between exposed manufacturing sectors, and sheltered services sectors within EMU candidate-countries were highly synchronous and differences in wage inflation between sectors was low. After 1996, significant divergence in sectoral wage inflation emerged and synchronicity of wage restraint cycles between sectors collapsed after 1999. This paper will address the question of why, at a time of rapid nominal convergence between countries, did divergence arise between sectoral wage restraint within countries. It will be argued that EMU's removal of national exchange rate pegs, and the central banks that enforced them, produced different incentives for wage actors in the exposed and sheltered sector, prompting unions in sheltered sectors to push for high wage increases while unions in more exposed sectors had to continue with wage moderation due to competitiveness constraints. However, it will be argued that countries with formal or informal inter-sectoral coordination mechanisms and/or countries which strictly followed fiscal disciplinary rules to comply with the Stability and Growth Pact, witnessed less of an increase in sheltered sector wage excess under EMU.

Even before its inception, European Monetary Union (EMU) was successfully hailed as Europe's convergence project. Through the European Monetary System's Exchange Rate Mechanism (ERM) in the 1980s, and later the establishment of the Maastricht inflation criteria in 1992, EU member-states witnessed a substantial convergence in inflation rates and nominal unit labour cost growth in the run up to EMU. By 1999, standard deviations of inflation rates between countries had reached levels unseen in Europe's history. Economists

and political economists attributed this convergence to the formation of exchange rate pegs, first created with the ERM, and then later reinforced through a more stringent Maastricht nominal criteria. With the Bundesbank (a central bank whose prime concern was price stability) as the anchor of the ERM, central banks of EU member-states who joined the fixed exchange rate arrangement, de facto adopted a German monetary policy. The credible commitment to such a peg required the exertion of wage restraint by wage setters, and if these actors were not willing to offer such restraint, the central bank would be forced to exert monetary tightening. As a result, the level of wage inflation – defined here as nominal wage growth minus labour productivity growth, positive values indicate wage excess, and lower or negative values indicate wage restraint¹ – decreased substantially for all EMU candidate countries between 1979 and 1998. While there was some variation after 1999, aggregate inflation does not appear to have diverged too much under the Euro.

As aggregate nominal indicators converged between countries throughout the 1980s and 1990s, so too did wage inflation between sectors within countries. Yet in the one to two years prior to 1999, a rise in sectoral divergence began to emerge *within* countries. Unlike the 1980s, where differentials in sectoral wage inflation within countries were low, under EMU such differentials were significantly widening, as the manufacturing sector continued to exert wage restraint, while public and personal services sectors ceased to improve their wage restraint performance (see Figure 1). A divergence cog in EMU's convergence project began to root itself within EMU member-states after 1996. This paper seeks to address this puzzle: why at a time of rapid nominal convergence between countries, was there a rise in sectoral wage restraint divergence within countries?

Figure 1: Difference in Sectoral Wage Inflation: 1979-1989, 1992-1998, and 1999-2005 Period Averages



Source Data from EU KLEMS Database

It will be argued in this paper that the EMU's removal of national exchange rate pegs, and the central banks that enforced them, produced very different incentives for wage actors in the exposed and sheltered sector, leading to the rise in divergence. Once countries entered an exchange rate arrangement with Germany, national central banks had to ensure that national inflation rates were not significantly higher than Germany's as this would threaten the peg. Hence, if national wage growth was significantly higher than German wage growth, central banks would have to respond to militant wage setters via monetary tightening (for a more formal demonstration of this argument, see Hochreiter and Winckler, 1995). Responsible aggregate wage setting, therefore, could be conducted by wage setters in two ways: 1.) wage setters in all sectors could cooperate by exerting wage restraint or; 2.) wage setters in one sector (usually the more exposed manufacturing sector) could exert significant wage restraint to offset wage excess in other sectors. At the time of the 1980s, wage inflation in all sectors within EMU member-states was relatively high, and the likelihood that one sector would be able or willing to take on a significant deflationary role rendered the latter option unlikely. Hence, throughout the 1980s, all sectoral wage setters within EMU countries

constrained their wages and *sectoral convergence* resulted. By the mid-1990s, however, wage growth in all sectors had been reigned in to such an extent that more sheltered sectors could afford to halt restraint, as long as the manufacturing sector continued to increase wage moderation. Continued pursuit of wage restraint ceased in sheltered sectors and after 1999, with the removal of inflation criteria and exchange rate arrangements altogether, these gains in wage restraint were then reversed, quite significantly, by some countries sheltered sectors (notably Finland's, Ireland's and the Netherlands').

This paper proceeds as follows. The first section provides a brief overview of the literature. Section II outlines measurements and methodologies used. Sections III and IV highlight and explain the sectoral divergence puzzle within EMU member-states, and describe which countries were more successful in preventing significant wage inflation in their sheltered sectors under EMU. Section V outlines the importance of wage coordination institutions and fiscal rules for keeping wage inflation in *some* member-states' sheltered sectors contained. Section VI concludes by outlining the consequences of sectoral divergence for the future of EMU and collective bargaining.

I. The Debate on Sectoral Divergence

Relatively little has been said on sectoral wage restraint performance under EMU. Economic and political economy literature which has discussed wage setting in a sectoral or EMU context still remains highly fragmented, and has never been formally combined. Literature looking at the impact of EMU on wage restraint remains confined to national level analysis. Political economists argued that in EMU, with its specific asymmetric structure which consisted of a centralised monetary policy and separate wage-bargaining systems, national wage setters are no longer constrained by their central bank and would therefore pursue high wage increases as soon as monetary policy was transferred to the ECB (Hall 1994; Hall &

Franzese 1998; Iversen & Soskice 1998; Soskice & Iversen 2000; Cukierman and Lippi, 2001; Hancké & Soskice, 2003). The creation of the ECB significantly reduces the size of individual wage setters with respect to the monetary authorities, and moves the wage-setting structure towards a situation in which national labour unions might be strong enough to extract high wage increases yet would be small enough not to bear the full cost of inflation (Calmfors & Driffill 1988). While this strand of literature is helpful in explaining what happened before 1999 when countries previously lacking in wage restraint capacity brought wage inflation under control, it does little to address the rising divergence between sectors which began 2-3 years before that and increased after 1999.

Economic theory, on the other hand, speculated market forces would continue to constrain unions and wage moderation would continue. Product market integration was already high in the EU before 1999. However, a transparent pricing system in a single currency area further underlined the need for competitiveness in the EMU member-states, and, without the nominal exchange rate as an adjustment mechanism, the only short to medium-term policy instrument left to enhance national competitiveness, via the real exchange rate, was wage restraint. Competitiveness constraints would therefore restrain the ability of wage setters to demand higher wages, in the context of a highly integrated product market which EMU was intended to reinforce (Danthine & Hunt 1994, Calmfors et al. 2001, Driffill et al. 1998). One caveat with this literature, however, is that it presupposed that the interests of national level wage setters were identical to those of exposed sector wage setters. Wage setters in sheltered sectors do not face such hard competitive constraints, which can explain why wage excess has resumed among several EMU countries' sheltered sectors.

Several scholars in political economy have examined preferences for wage setting by sector. Franzese (2001), who provides a more complete analysis on wage-bargaining's interaction with monetary policy, concludes that for countries where coordinated bargaining is

led by the traded-sector, central bank independence is most effective at reducing wage inflation. Yet Franzese's analysis rests on the assumption of the existence of national central banks. It does not examine how coordination between sectors, and wage restraint outcomes which result from such coordination, change during the transition from a strict monetary regime at the national level to a relatively absent monetary regime at the national level (a shift which EMU produces). Garrett and Way (2000) do examine power dynamics between public sector unions and exposed private sector unions without including central banks in their model. They conclude that countries with strong labour regimes experience economic problems if public sector unions grow in strength or size. Yet, similar to Franzese's work, the monetary transition is absent in this analysis, and it therefore assumes sectoral wage restraint divergence is static rather than dynamic.

How then can sectoral divergence in wage restraint under EMU be accounted for? EMU produced a profound shift in the institutional regime that governs wage bargaining, with consequences for domestic political economies. This led to a wage-setting regime in EMU in which wage restraint within countries was considerably less synchronised than was the case in the institutional design that the 1980s and 1990s offered. This point is based on two related insights. The first insight is that under EMU, individual trade unions in the member-states no longer face the hard monetary constraint imposed by their national central bank. Yet the subsequent possibility of inflationary wage explosions did not occur because competitiveness concerns (over the real exchange rate – the ratio between the price of a good expressed in domestic currency and in foreign currency) kept wage developments in the exposed sector in check. The second insight relies on the dual-sector framework that is introduced in this paper: whereas wage pressures from unions in the exposed sector are limited through competitiveness concerns, unions in the sheltered sector (i.e. the non-tradable goods and services sector of the economy) by definition do not face such constraints. The struggles over

wage bargaining agendas that are emerging within some EMU member-states between wage-setters in export sectors on the one hand, and labour unions in sheltered private services and the public sector on the other, is a logical consequence of these different constraints on the exposed and sheltered sectors. Countries where the disappearing monetary constraint is not supplanted by hard incentives that tie wage-setting in the sheltered and exposed sectors therefore face divergence between wages in these two types of sectors and possibly higher wage inflation rates as a result.

This paper develops these two points. After discussing the methodology used to assess sectoral divergence, a comparison of the 1980s, Maastricht and EMU periods (1979-1989, 1992-1998 and 1999-present) will be made to highlight the institutional shift that has taken place. Different incentives for exposed and sheltered sectors will then be examined, and the role that domestic wage-setting institutions play will be brought into the fold.

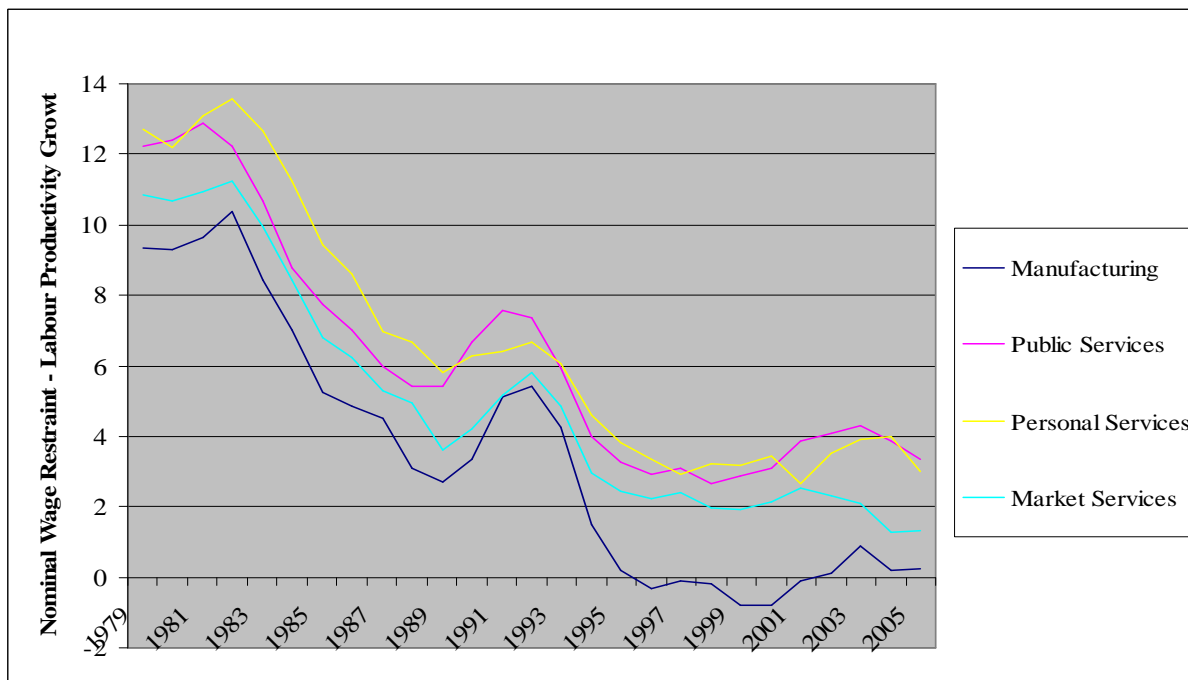
II. Assessing Sectoral Divergence in Wage Restraint: Measurements and Methodology

This analysis seeks to conceptualise sectoral divergence between four sectors. The two relatively sheltered sectors examined are non-market services² (a weighted composite of public administration and defence, education, and health and social work - ISIC tabulation categories L, M, and N respectively) and personal services (a weighted composite of hotels and restaurants, community social and personal services, and private households with employees - ISIC tabulation categories H, O, and P respectively). The one (increasingly) exposed sector which is examined is market services (a weighted composite of transport and storage, post and telecommunications, financial intermediation, and real estate, renting and business activities – ISIC tabulation categories 60 to 63, 64, J and K respectively). Manufacturing (ISIC tabulation category D) will be used as a proxy for the highly exposed sector.

The calculation of wage restraint used in this paper stems from Oliver Blanchard's efficiency wage measurement (Blanchard and Wolfers 2000; Blanchard 2006). Blanchard defines wage restraint as real wage growth minus labour's share in total factor productivity growth. If wage excess is present, this value will be highly positive; if wage restraint is present, this value will be near zero or negative. Since this paper compares the performance of sectoral wage restraint *within* countries, using nominal wage growth as opposed to real wage growth is not important, as all four sectors within a country experience the same inflation rate. Therefore, nominal wage restraint between sectors within countries will be the main focus of analysis. However, when sectoral wage restraint *between* countries is compared, real wage restraint will be used. Sectoral nominal wage restraint was calculated using data from the EU KLEMS database. Nominal wage per hours was calculated by dividing total compensation of employees divided by total hours worked (COMP/H_EMPE). Sectoral gross value added per hour worked (LP_I) was used for labour productivity.

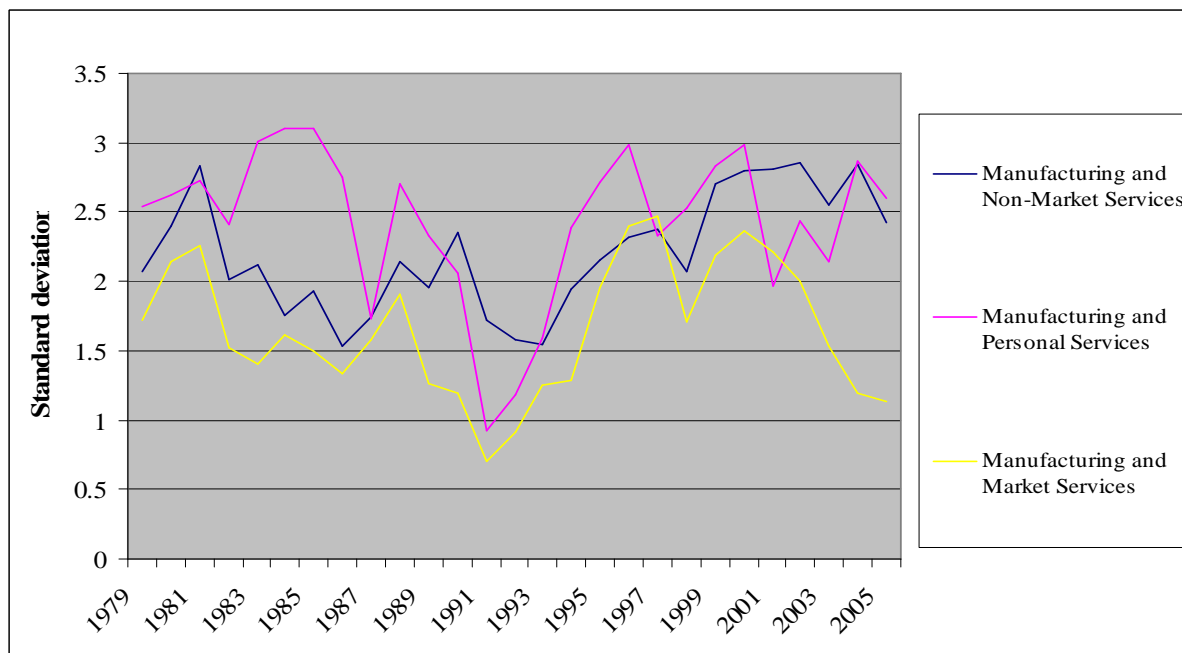
Sigma and beta convergence are perhaps the most common approaches in analysing divergence. While this approach is often used to analyse convergence or divergence among many units, it can be used to assess divergence between as few as two. Sigma convergence analysis of sectoral wage restraint within EMU countries paints relatively the same picture as the one presented above when only wage inflation differentials were examined. Average standard deviations between manufacturing and non-market or market services wage inflation across the EMU10³ demonstrate that the 1980s was a time of relatively high convergence. The early 1990s witnessed a continuation of these low deviations in wage restraint between sectors, yet around the mid to late 1990s, standard deviations began to climb, particularly between the manufacturing and non-market services sector (see Figures 2 and 3). Only between the manufacturing sector and markets services sectors did convergence increase after the launch of EMU.

Figure 2: Sectoral Nominal Wage Restraint Performance (Unweighted Average for EMU10)



Source Data from EU KLEMS Database

Figure 3: Sigma Convergence in Sectoral Nominal Wage Restraint (Unweighted Average for EMU10)



Source Data from EU KLEMS Database

While sigma convergence is helpful in understanding convergence/divergence over time, it does not indicate whether such convergence or divergence is brought about due to coordination of wage restraint. Combining standard deviation analysis with a methodology that assesses synchronicity of wage restraint cycles between sectors is helpful in understanding whether wage setters in different sectors had to coordinate wage restraint due to a common external pressure (i.e. an exchange rate peg enforcing national central bank). One such method which has been used to assess synchronicity is pair-wise correlation analysis. Correlation analysis has been heavily used in business cycle convergence analysis (see Bayoumi and Eichengreen, 1992; Artis & Zhang 1997; Artis, 2008) as well as in wage growth cycle analysis (Pichelmann, 2001). Using cross-correlation analysis for examining wage restraint cycles has several advantages. One is that since it is a measurement of synchronicity between two functions, and not of causation, it does not require control checks, which would be severely limited in this case due to degrees of freedom problems. In addition, cross-correlation analysis can be conducted on time series with as few as seven observations.⁴

Pair-wise correlations were calculated for three-year moving averages in wage restraint between the exposed and sheltered sectors within each EMU10 and non-EMU3 country for three periods: 1979-1989 (the early ERM period), 1992-1998 (the Maastricht period), and 1999-2005 (the EMU period). One pair-wise correlation coefficient is between wage restraint cycles for a country's manufacturing sector and personal services sector. These are reported in the first column of Tables 1, 2 and 3. The manufacturing and personal services sector is used as a proxy for a given country's (relatively highly unionised) exposed and (relatively lowly unionised) sheltered sectors, respectively. The second pair-wise correlation coefficient is between wage restraint cycles for a given country's manufacturing sector and a country's non-market services sector; the latter is used as a proxy for a given country's (relatively highly unionised) public sector. These are reported in the second column of Tables 1, 2, and 3. Finally, the third series of pair-wise correlation coefficients were conducted between wage restraint cycles for a given country's manufacturing sector and a country's market services sector; the latter is used as a proxy for a relatively lowly unionised but increasingly exposed sector. Given national central banks' commitment to uphold exchange rate peg arrangements in the 1980s and the Maastricht criteria in the 1990s, it is expected that pair-wise coefficients between the public, private and market services sectors respectively, and the manufacturing sector would be higher in the 1979-1989 and the 1992-1998 periods than in the EMU period.

In addition to this analysis of wage moderation, a similar pair-wise correlation analysis of *wage growth* cycles was conducted between the manufacturing and the non-market, personal and market services sectors for the EMU10 and non-EMU3 countries (Tables 4, 5 and 6) to determine whether coordination in *wage growth* between these sectors changed significantly under EMU. Since wage coordination transpires through wage increases and not through wage restraint, a significant divergence between wage growth cycles across these

sectors would imply that the divergence in wage moderation was due to a collapse of inter-sectoral wage coordination rather than disappearance of national central banks and exchange rate pegs. If pair-wise correlations in wage growth remain stable for the majority of the EMU10 countries after 1999, however, then any change in pair-wise wage restraint correlations between the pre-EMU and EMU periods lends further evidence to the fact that nominal exchange rate peg arrangements are conducive to sectoral wage restraint convergence within countries.

III. The 1980s and Maastricht: The Golden Age of Sectoral Wage Coordination

In the 1980s, most EMU candidate countries belonged to the Exchange Rate Mechanism either formally or informally (ERM).⁵ As a consequence of pegging their currencies to the Deutschmark, shadowing national banks became less accommodating to national wage setters and more concerned with maintaining stable exchange rates. Under the ERM's fixed exchange rate regime, national central banks of EMU candidate countries were forced to shadow the Bundesbank's interest rate policy in order to avoid their currencies sliding against the Deutschmark. If a country's inflation rate was significantly higher than the German inflation rate, threatening the peg, central banks would be forced to intervene via monetary tightening.

The ERM's fixed exchange rate regime left wage setters in high inflation shadowing countries with two options for avoiding such monetary tightening. One option was that wage setters in all sectors could cooperate in exerting wage restraint, placing downward pressures on labour costs, and ultimately inflation. The second option was the wage setters in one (generally exposed) sector could exert significant wage restraint in order to offset wage excess in other (generally sheltered) sectors. The first option appears to be undertaken by national wage setters during the 1980s. Wage excess was high in all sectors, and it was unlikely that

wage setters in the manufacturing sector were able or willing to significantly deflate their wages in order to accommodate higher wage increases in the public and personal services sectors. In response to monetary pressures placed upon them under the ERM, wage restraint in all sectors significantly increased (see Figure 2).

Wage cycle synchronisation was also high during the first decade of ERM. In 1979, nominal wage growth significantly exceeded labour productivity growth for all four sectors in all EMU candidate countries. Strict exchange rate arrangements forced wage setters within these sectors to close the gap between nominal wage and labour productivity growth. Because all wage setters were pursuing similar policies of wage restraint during the 1980s, wage restraint cycles became highly synchronised between the manufacturing, market services, personal services and public services sectors (see Table 1). Nine of the EMU10 had pair-wise correlation coefficients between wage restraint in the manufacturing and non-market services sectors that exceeded 0.7 (out of 1). Pair-wise coefficients between the manufacturing and market services sectors and manufacturing and personal services sectors were also high, with eight and six, respectively, of the EMU10 witnessing coefficients higher than 0.7.

Table 1: Sectoral Nominal Wage Restraint Correlations, 1979-1989

	<i>Manufacturing and Personal Services</i>	<i>Manufacturing and Non-Market Services</i>	<i>Manufacturing and Market Services</i>
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<i>Austria</i>	0.29 (0.383)	0.73** (0.011)	0.80*** (0.003)
<i>Belgium</i>	0.38 (0.255)	0.33 (0.324)	0.23 (0.490)
<i>Finland</i>	0.86*** (0.001)	0.82*** (0.002)	0.84*** (0.001)
<i>France</i>	0.96*** (0.000)	0.98*** (0.000)	0.98*** (0.000)
<i>Germany</i>	0.76*** (0.007)	0.90*** (0.000)	0.57* (0.068)
<i>Ireland</i>	0.89*** (0.000)	0.86*** (0.001)	0.93*** (0.000)
<i>Italy</i>	0.95*** (0.000)	0.88*** (0.000)	0.95*** (0.000)
<i>Netherlands</i>	-0.05 (0.879)	0.74*** (0.009)	0.73*** (0.010)
<i>Portugal</i>	0.32 (0.334)	0.86*** (0.001)	0.96*** (0.000)
<i>Spain</i>	0.95*** (0.000)	0.96*** (0.000)	0.98*** (0.000)
<i>EMU AVERAGE</i>	0.63	0.81	0.80
<i>Denmark</i>	0.11 (0.750)	0.06 (0.856)	0.17 (0.626)
<i>Sweden</i>	0.03 (0.938)	0.17 (0.612)	-0.62 (0.041)
<i>UK</i>	0.71** (0.014)	0.89*** (0.000)	0.92*** (0.000)
<i>NON-EMU AVERAGE</i>	0.28	0.37	0.16

Source Data from EU KLEMS Database. The table presents pair-wise correlation coefficients for 3-year moving averages in wage restraint between the manufacturing and personal/non-market/market services sectors.

P-values in parenthesis. *, **, and *** indicate significance on a 90%, 95% and 99% confidence interval.

After the ERM crisis in 1992, the gap between nominal wage and labour productivity growth was significantly lower than the gap which had existed in the 1980s, and sheltered sector wage growth had been reigned in substantially. Yet after the crisis, ERM's bands were expanded to $\pm 15\%$ of the target rate in order to accommodate speculation against currencies, particularly the franc and the lira. While this move alone may have prompted wage setters, especially in sheltered sectors, to relax wage restraint, Maastricht's inflation criteria gave central banks in candidate countries further ability to force wage restraint upon them. In order to qualify for EMU membership, it was established that all candidate countries would not only have to fulfil ERM's looser band requirements, but would also have to maintain an

interest rate that was no higher than 1.5% of the EU's three lowest inflation members (source??). Because Germany's inflation was among the lowest in the EU, the Deutschmark effectively became a second nominal anchor, not only for exchange rates but also for inflation rates. Through this criterion, central banks maintained their monetary tightness on wage setters and wage restraint in all four sectors continued.

By the mid 1990s, wage excess in sheltered sectors was reaching more sustainable levels, and differentials between nominal wage and labour productivity growth across the EMU10 had dropped below 4% for the public and personal services sectors. The Maastricht period (1992-1998) still boasted a highly synchronous regime; wage restraint cycles between the manufacturing sector and other sectors remained high. However, pair-wise correlation values indicate that the Maastricht period was becoming less synchronous, in terms of sectoral wage restraint performance, than the 1980s. Pair-wise correlations between wage restraint cycles in the manufacturing and non-market services remained high (with eight countries experiencing correlation coefficients higher than 0.7), yet correlations between manufacturing and personal services were falling (see Table 2). Compared to the 1980s period, when six out of ten countries had correlation coefficients of 0.7 or above between their manufacturing and personal services sectors, only four countries maintained high correlation coefficients between these two sectors under the Maastricht period.

Table 2: Sectoral Nominal Wage Restraint Correlations, 1992-1998

	<i>Manufacturing and Personal Services</i>	<i>Manufacturing and Non-Market Services</i>	<i>Manufacturing and Market Services</i>
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<i>Austria</i>	0.31 (0.500)	0.89*** (0.007)	0.24 (0.602)
<i>Belgium</i>	0.78** (0.040)	0.86** (0.013)	0.74* (0.056)
<i>Finland</i>	0.07 (0.888)	0.22 (0.641)	0.63 (0.126)
<i>France</i>	0.56 (0.190)	0.52 (0.230)	0.87** (0.011)
<i>Germany</i>	0.72* (0.069)	0.99*** (0.000)	0.96*** (0.000)
<i>Ireland</i>	0.30 (0.514)	0.93*** (0.003)	-0.16 (0.727)
<i>Italy</i>	0.56 (0.192)	0.81** (0.027)	0.90*** (0.006)
<i>Netherlands</i>	0.37 (0.408)	0.87** (0.011)	0.94*** (0.002)
<i>Portugal</i>	0.98*** (0.000)	0.97*** (0.000)	0.97*** (0.000)
<i>Spain</i>	0.84** (0.017)	0.87*** (0.010)	0.95*** (0.001)
<i>EMU AVERAGE</i>	0.55	0.79	0.70
<i>Denmark</i>	0.52 (0.234)	0.97*** (0.000)	0.74* (0.057)
<i>Sweden</i>	0.80** (0.031)	0.86** (0.014)	0.75** (0.050)
<i>UK</i>	0.66 (0.107)	0.77** (0.042)	0.87** (0.011)
<i>NON-EMU AVERAGE</i>	0.66	0.87	0.79

Source Data from EU KLEMS Database. The table presents pair-wise correlation coefficients of 3-year moving averages in wage restraint between the manufacturing and personal/non-market/market services sectors.

P-values in parenthesis. *, **, and *** indicate significance on a 90%, 95% and 99% confidence interval.

By 1996, a split emerged between sectoral wage restraint performances across the EMU10. Wage setters in the manufacturing sector continued to reign in wage excess, and wage restraint performance continued to improve. Wage restraint performance in the market services sector followed a similar pattern, albeit over a longer period of time. However, wage restraint performance in the personal and public services sectors stagnated, and after 1999 began an upward creep. In the final two to three years before EMU, the second option available to national wage setters to avoid monetary tightening – having one sector continue to exert wage restraint in order to accommodate wage excess in others – was taken. The rise of sectoral divergence in wage restraint performance had begun.

IV. EMU and the Rise of Sectoral Divergence

EMU produced one substantial shift upon wage setters; it removed the strict (national) monetary regime which governed over wage setting since the 1980s and prompted the heavy exertion of wage restraint by wage setters in all sectors. Indeed, the new monetary regime under EMU was intended to be just as strict as before. The ECB was modelled from the German Bundesbank and price stability, keeping EMU aggregate inflation around 2%, was the only mandate which it had to fulfil. However, there was one major difference between this new regime and that in place under the ERM: monetary strictness was no longer imposed onto wage setters at the national level, but rather was enforced at the supranational level. National central banks no longer had inflation criteria to enforce or exchange rate arrangements to uphold. While these central banks may have cared a great deal if national wage inflation was excessive prior to 1999, the ECB had little concern with wage inflation developments at the national level unless they impacted EMU's aggregate inflation rate.

The shift from national central banks to the ECB led many political science scholars to conclude that EMU would prompt a decline in *aggregate* wage restraint across member-states (Hall 1994; Hall & Franzese 1998; Iversen & Soskice 1998; Soskice & Iversen 2000; Cukierman and Lippi 2001; Hancké & Soskice, 2003). Contrary to these projections, national wages remained moderate in many EMU countries (though there are some exceptions which will be discussed later), and aggregate wage excess was by no means high compared to the 1980s period.

Developments at the national level, however, masked developments at the sectoral level. Preferences for wage moderation were very different across sectors and this preference divergence led, in some countries, to significant divergence in sectoral wage inflation. For wage bargainers in the exposed sector (namely manufacturing, but also market services),

preferences to exert wage moderation were still high under EMU. If wage setters in the exposed sector pushed for excess wage growth, firms in the export sector would either lose competitiveness, if wage increases were passed onto prices, or would cut employment. A strict competitiveness constraint ensured that wage moderation would continue in these sectors, as unions feared that a drop in price competitiveness would be followed by a parallel drop in employment. In all of the EMU10 countries, with the exception of Italy, Portugal and Spain, wage restraint in the manufacturing sector continued to increase after 1999.

On the other hand, preferences for wage moderation due to a competitiveness constraint do not exist for the sheltered sectors. With the removal of the hard, national monetary constraint by introduction of the ECB in 1999 – and manufacturing's uptake of a deflationary role in 1996 across most countries – unions in sheltered sectors are in principle free to press for inflationary wage settlements. This preference divergence, which was allowed to manifest due to the absence of hard monetary criteria and exchange rate arrangements in 1999, would translate into a sharp divergence between wage rates in the exposed (manufacturing) and sheltered (personal and public services) sectors. Data in Table 3 seems to confirm this. Presenting pair-wise correlation coefficients for an identical length of time to the Maastricht period, 7 years, correlation coefficients between wage restraint cycles in the (exposed) manufacturing and (sheltered) non-market/personal services sector collapse for most countries under EMU. Of the ten pair-wise correlations between wage restraint in the manufacturing and non-market services sector, only four countries (France, Italy, Portugal and Spain) have correlation coefficients higher than 0.7. In the final three cases, the stability of the coefficient in the EMU period can be attributed to the fact that the manufacturing sector, along with the non-market services sectors, pursued excessive wage increases after 1999. Only two countries within EMU have a pair-wise correlation coefficient higher than 0.7 between its manufacturing and personal services sectors. As for manufacturing and

market services sector wage restraint comparisons, the number of countries with pair-wise correlation coefficients higher than 0.7 dropped from seven in the Maastricht period to two in the EMU period.

Table 3: Sectoral Nominal Wage Restraint Correlations: 1999-2005

	<i>Manufacturing and Personal Services</i>	<i>Manufacturing and Non-Market Services</i>	<i>Manufacturing and Market Services</i>
<i>Austria</i>	-0.61 (0.146)	-0.70* (0.078)	-0.33 (0.471)
<i>Belgium</i>	0.54 (0.207)	0.43 (0.331)	0.53 (0.219)
<i>Finland</i>	0.22 (0.628)	0.51 (0.245)	0.47 (0.290)
<i>France</i>	0.13 (0.787)	0.77** (0.044)	0.22 (0.629)
<i>Germany</i>	0.76** (0.046)	-0.05 (0.918)	0.27 (0.562)
<i>Ireland</i>	-0.38 (0.396)	0.19 (0.690)	-0.11 (0.822)
<i>Italy</i>	0.78** (0.039)	0.82** (0.025)	0.95*** (0.001)
<i>Netherlands</i>	0.60 (0.157)	0.52 (0.236)	0.36 (0.431)
<i>Portugal</i>	0.47 (0.285)	0.94*** (0.001)	0.78** (0.040)
<i>Spain</i>	-0.79** (0.035)	0.89*** (0.007)	-0.11 (0.818)
<i>EMU AVERAGE</i>	0.17	0.43	0.30
<i>Denmark</i>	0.15 (0.747)	0.47 (0.292)	0.19 (0.677)
<i>Sweden</i>	0.18 (0.696)	0.76** (0.049)	0.70* (0.083)
<i>UK</i>	0.83** (0.022)	-0.80** (0.030)	0.15 (0.756)
<i>NON-EMU AVERAGE</i>	0.39	0.47	0.17

Source Data from EU KLEMS Database. The table presents pair-wise correlation coefficients for wage restraint between the manufacturing and personal/non-market/market services sectors.

P-values in parenthesis. *, **, and *** indicate significance on a 90%, 95% and 99% confidence interval

The experiences of Denmark, Sweden and the UK provide important benchmarks for EMU performance. Of the three, only Sweden retains stable, high pair-wise coefficients between its manufacturing sector and its non-market and market services sector, respectively. While this would suggest that sectoral divergence in the exertion of wage restraint occurred

even outside the EMU, it is important to note that, for the UK, the collapse in its pair-wise coefficients in sectoral wage restraint between the manufacturing and non-market services sectors, as well as between its manufacturing and market services sector can be partially attributed to the collapse in wage coordination between these three sectors during the EMU period (see Tables 4, 5 and 6). Denmark witnessed a similar collapse between wage coordination in its manufacturing and non-market services sector (see Table 5).

The fall in synchronised wage moderation throughout EMU is not due to a collapse in wage coordination after 1999, however. In practice, centralised and patterned bargaining wage agreements coordinate wage setters around wage growth rates, *not* wage restraint. Tables 4, 5 and 6 present pair-wise cross-correlations of wage *growth* cycles between sectors and demonstrate that these remained relatively stable or even increased for six of the countries we examine. While there appears to be a slight collapse in wage coordination between the personal services sectors and the manufacturing sectors (the number of EMU countries with pair-wise coefficients exceeding 0.7 drop from six in the Maastricht period to four in the EMU period), the synchronisation between wage growth in the manufacturing sector and the public/market services sectors remain relatively high. Six and five countries still have pair-wise coefficients in wage growth cycles over 0.7 between their manufacturing and public services sectors, and manufacturing and market services sectors, respectively. Combined, the data in Tables 1, 2 and 3 and 4, 5 and 6 suggest that the relevant shift therefore lies in the *extent* to which the exposed sector still internalises the inflationary effects of wage-setting whilst the sheltered sector no longer does so. While sheltered sectors across EMU countries may have abandoned wage restraint under EMU, most did not abandon national systems of wage coordination wholesale.

Table 4: Nominal Wage Growth Correlations for the Manufacturing and Personal Services Sectors

	1979-1989	1992-1998	1999-2005
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<i>Austria</i>	0.92*** (0.000)	0.71* (0.071)	0.58 (0.174)
<i>Belgium</i>	0.95*** (0.000)	0.26 (0.569)	0.80** (0.030)
<i>Finland</i>	0.86*** (0.000)	0.84** (0.018)	0.18 (0.706)
<i>France</i>	0.99*** (0.000)	-0.38 (0.397)	-0.32 (0.479)
<i>Germany</i>	0.91*** (0.000)	0.99*** (0.000)	0.79** (0.034)
<i>Ireland</i>	0.65** (0.032)	0.31 (0.504)	-0.13 (0.782)
<i>Italy</i>	0.97*** (0.000)	-0.02 (0.969)	-0.20 (0.672)
<i>Netherlands</i>	0.96*** (0.000)	0.78** (0.038)	0.90*** (0.006)
<i>Portugal</i>	-0.64** (0.036)	0.96*** (0.000)	0.83** (0.020)
<i>Spain</i>	0.97** (0.000)	0.99*** (0.000)	-0.77** (0.044)
<i>EMU AVERAGE</i>	0.75	0.54	0.27
<i>Denmark</i>	0.93*** (0.000)	0.73* (0.064)	0.83** (0.022)
<i>Sweden</i>	0.04 (0.917)	0.61 (0.146)	0.78** (0.039)
<i>UK</i>	0.90*** (0.000)	0.79** (0.035)	0.23 (0.627)
<i>NON-EMU AVERAGE</i>	0.62	0.71	0.61

Source Data from EU KLEMS Database. The table presents pair-wise correlation coefficients for 3-year moving averages in wage growth between the manufacturing and personal services sectors.

P-values in parenthesis. *, **, and *** indicate significance on a 90%, 95% and 99% confidence interval.

Table 5: Nominal Wage Growth Correlations for the Manufacturing and Non-Market Services Sectors

	<i>1979-1989</i>	<i>1992-1998</i>	<i>1999-2005</i>
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<i>Austria</i>	0.78*** (0.004)	0.80** (0.031)	0.86** (0.014)
<i>Belgium</i>	0.96*** (0.000)	0.58 (0.175)	0.73* (0.061)
<i>Finland</i>	0.73** (0.012)	0.72* (0.068)	0.18 (0.707)
<i>France</i>	0.98*** (0.000)	0.25 (0.596)	0.93*** (0.002)
<i>Germany</i>	0.92*** (0.000)	0.98*** (0.000)	0.79** (0.033)
<i>Ireland</i>	0.54* (0.089)	-0.52 (0.234)	-0.50 (0.258)
<i>Italy</i>	0.91*** (0.000)	0.70* (0.081)	0.86** (0.013)
<i>Netherlands</i>	0.96*** (0.000)	0.97** (0.000)	0.29 (0.535)
<i>Portugal</i>	0.80*** (0.003)	0.98*** (0.000)	0.94*** (0.001)
<i>Spain</i>	0.91*** (0.000)	0.93*** (0.002)	0.68* (0.091)
<i>EMU AVERAGE</i>	0.85	0.64	0.58
<i>Denmark</i>	0.68** (0.021)	0.54 (0.214)	-0.66 (0.104)
<i>Sweden</i>	0.18 (0.607)	0.83** (0.020)	0.94*** (0.002)
<i>UK</i>	0.93*** (0.000)	0.97*** (0.000)	0.14 (0.765)
<i>NON-EMU AVERAGE</i>	0.60	0.78	0.14

Source Data from EU KLEMS Database. The table presents pair-wise correlation coefficients for 3-year moving averages in wage growth between the manufacturing and non-market services sectors.

P-values in parenthesis. *, **, and *** indicate significance on a 90%, 95% and 99% confidence interval.

Table 6: Nominal Wage Growth Correlations for the Manufacturing and Market Services Sectors

	<i>1979-1989</i>	<i>1992-1998</i>	<i>1999-2005</i>
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<i>Austria</i>	0.88*** (0.000)	0.98*** (0.000)	-0.88*** (0.009)
<i>Belgium</i>	0.89*** (0.000)	0.33 (0.467)	0.49 (0.265)
<i>Finland</i>	0.96*** (0.000)	0.81** (0.027)	0.84** (0.017)
<i>France</i>	0.99*** (0.000)	0.64 (0.120)	0.57 (0.180)
<i>Germany</i>	0.93*** (0.000)	0.99*** (0.000)	0.90*** (0.005)
<i>Ireland</i>	0.68** (0.022)	0.83** (0.020)	-0.29 (0.528)
<i>Italy</i>	0.93*** (0.000)	0.94*** (0.002)	0.97*** (0.000)
<i>Netherlands</i>	0.81*** (0.003)	0.65 (0.116)	0.72* (0.066)
<i>Portugal</i>	0.80*** (0.003)	0.96*** (0.000)	0.97*** (0.000)
<i>Spain</i>	0.95*** (0.000)	0.92*** (0.004)	0.58 (0.173)
<i>EMU AVERAGE</i>	0.88	0.80	0.64
<i>Denmark</i>	0.91*** (0.000)	0.69* (0.089)	0.88*** (0.009)
<i>Sweden</i>	0.19 (0.584)	0.82** (0.023)	0.69* (0.089)
<i>UK</i>	0.91*** (0.000)	0.57 (0.185)	0.24 (0.602)
<i>NON-EMU AVERAGE</i>	0.67	0.69	0.63

Source Data from EU KLEMS Database. The table presents pair-wise correlation coefficients for 3-year moving averages in wage growth between the manufacturing and market services sectors.

P-values in parenthesis. *, **, and *** indicate significance on a 90%, 95% and 99% confidence interval.

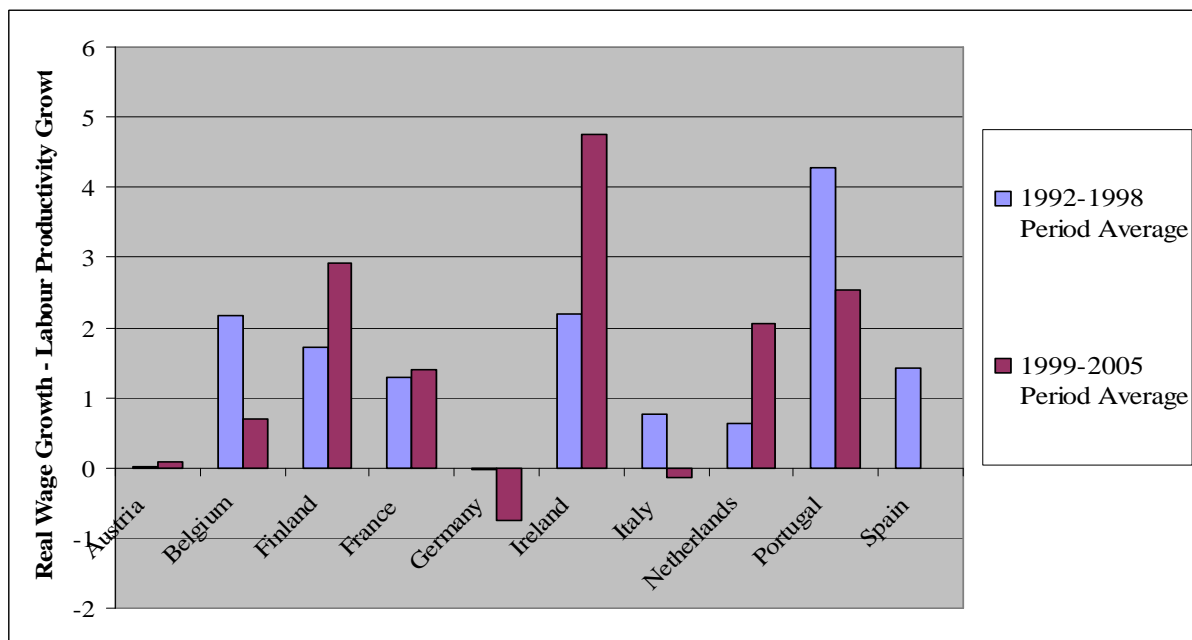
V. The Role of Wage Bargaining Institutions in Maintaining Wage Restraint

The stylised picture that has been developed so far is that since the mid-1990s, sheltered sectors across EMU have, on average, abandoned the drive to continue with wage restraint.

Yet, despite the rise in sectoral wage restraint divergence *within countries* for the EMU10 as a whole, there is considerable degree of variation in sheltered sector wage restraint performances *across countries* between the Maastricht and EMU periods. In some EMU member-states (Austria, Belgium and Germany most notably), wage restraint was upheld in the sheltered sectors, under EMU (see Figures 4 and 5). However, for other countries

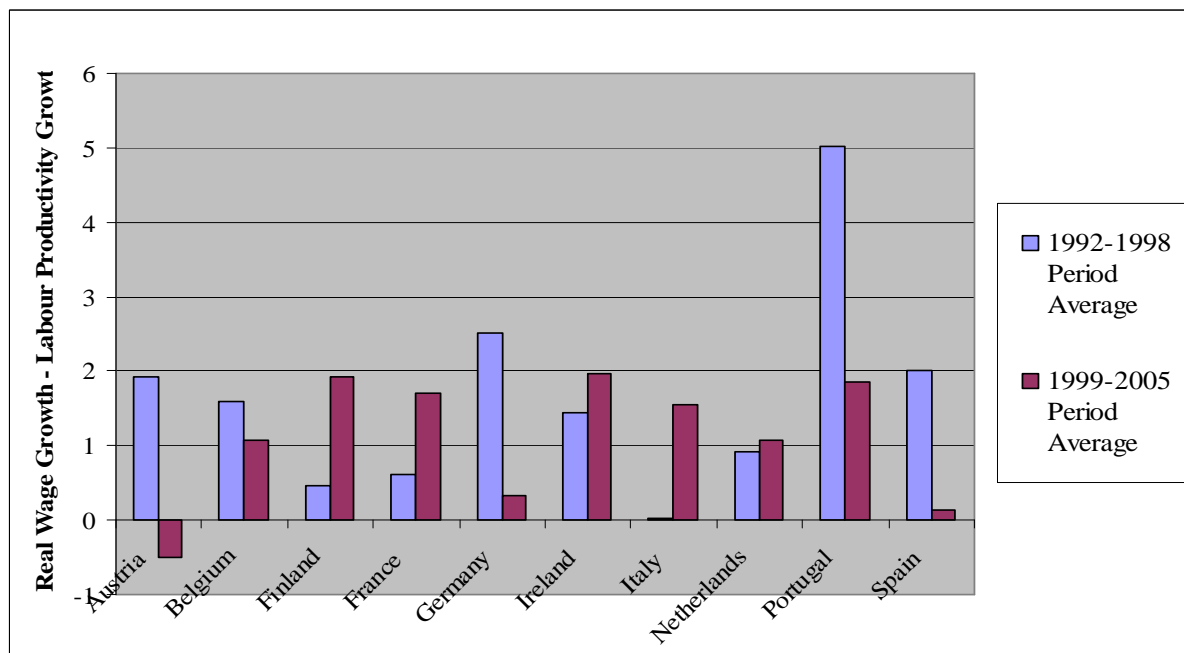
(Finland, Ireland, the Netherlands, and Italy for its personal services sector), wage restraint was not upheld in these sectors. Why, amid divergence between sectoral wage restraint performance under EMU, did some countries' sheltered sectors continue to moderate their wages relative to sheltered sectors in other countries? It is hypothesised in this paper that the institutions which govern wage bargaining explain the capacity of domestic wage setters to keep sheltered sector wage moderation intact.

Figure 4: Real Wage Restraint Performance for Non-Market Services Sector (Maastricht and EMU Periods)



Source Data from EU KLEMS Database

Figure 5: Real Wage Restraint Performance for Personal Services Sector (Maastricht and EMU Periods)



Source Data from EU KLEMS Database

Unlike wage restraint in the manufacturing sector, which has either continued or increased under EMU (except in Italy, Portugal and Spain), wage restraint in the sheltered sectors followed very different paths across EMU member states. While preference divergence for wage restraint among sectors would suggest that wage excess should emerge for all sheltered sectors, this argument ignores two important factors governing wage setting in the sheltered sector: the roles of the Stability and Growth Pact and coordinated bargaining frameworks which tie wage setters in different sectors together. By taking these two factors into account, three possible scenarios rather than one (a push to increase wages) emerge for the sheltered sector wage performance after 1999.

One possible path which sheltered sectors could have taken under EMU was to continue to comply with wage restraint as they did in the ERM period. Though strict monetary tightening, via fixed exchange rates and the Maastricht inflation criteria, may have disappeared, national legal and institutional constraints did not. Institutions that govern wage-setting matter a great deal in this scenario. Such a scenario appears to have been undertaken by wage setters in Austria, Belgium and Germany. In Belgium, a law on wage

competitiveness established a hard wage target. Introduced in 1996 in the failure to arrive at voluntary wage moderation via the previous (softer) Law on Competitiveness in 1989 and the failed social pact of the early 1990s, this law implemented a ceiling on all wage developments within the country (Pochet 2004). It mandated that annual increases should not exceed average wage increases of Belgium's largest trading partners - France, Germany and the Netherlands - and has been upheld under EMU. Since 1996, wage moderation performance in Belgium has increased considerably. A similar constraint on sheltered sector wage setters might also exist in countries where inter-industry coordination of wage bargaining remains strong. Austria and Germany provide notable examples: both have pattern bargaining systems where wage-setters in all sectors shadow the metalworking sector. The metalworking sector (IG Metall in Germany and GMT in Austria), leads negotiations, setting wage increases equal to the increase in the national aggregate labour productivity rate. All other sectoral unions then shadow these increases, using them as a target, but rarely reaching them unless their sectoral productivity levels permit it. In all three countries, the pair-wise cross-correlation coefficients between wage *growth* cycles remained high (in the case of Austria and Germany) or increased (in the case of Belgium) between the manufacturing and non-market services sectors under EMU (see Tables 4, 5 and 6).

The second scenario which the sheltered sector could pursue is to push for excessive wage increases (above labour productivity), but not receive them. This is likely to lead to wage militancy and possibly protracted social conflicts in the public sector. Such a scenario would be particularly relevant to unions in countries where governments have imposed hard fiscal constraints through domestic rules or the Stability and Growth Pact (SGP). The dynamics in France since the late 1990s seem to capture this case: secure jobs in the public sector and a high unionisation rate have pushed civil servants in France to claim wage increases which go against the disinflationary wage settlements in the private sector. While

sheltered sector wage excess is slightly higher for France under EMU compared to ERM, wage growth has remained very contained compared to militancy within the public sector over pay. In 2004, the French Government effectively presented civil servants with a pay freeze, due to an official rebuke from the European Union over its public spending deficit; it agreed on pay increases of 0.5% in the face of 2% inflation (EIRO 2004; 2005b). Similar 0.5% pay increases were introduced to civil servants by the civil service minister in 2006, in the face of 1.8% inflation: six of the seven civil service unions called for strike action in response (EIRO, 2006).

The third scenario which the sheltered sector could pursue is to push for excessive wage increases and receive them. This appears to have happened in Finland, Ireland and the Netherlands. In all three countries, differentials between wage restraint exerted in the manufacturing sector and the public and personal services sectors increase substantially after 1999. Such wage excess could have significant implications for national wage restraint and inflation performance. Finland has been able to rely upon incomes policies to balance wage excess in the public and personal services sector with heavy wage restraint in the manufacturing sector, so the overall effect of sheltered sector wage push has not spilled over onto national nominal unit labour costs. In Ireland and the Netherlands, however, wage inflation in the sheltered sector did place upward pressures on nominal unit labour costs and inflation, prompting a bubble in both countries between 2000 and 2003. In response to such inflationary pressures, both Ireland and the Netherlands introduced emergency social pacts in 2003 that curbed wage growth, bringing the sheltered sector back in line with wage restraint in other sectors (ILO, 2009). However, this state-sponsored method of coordination (see Traxler et al, 2001) via time irregular social pacts, binds wage growth in the sheltered sector to the exposed sector only temporarily, specifically in times of economic crisis where previous wage excess has prompted a loss in competitiveness. In times of economic recovery

and boom, sheltered sector unions can again push for high wage increases, in the absence of a permanent constraint on their wage demands.

Divergence in sectoral wage restraint within EMU, therefore, results from two components: competitiveness-driven restraint in the exposed sector, and wage increases beyond productivity in the sheltered sector. Low levels of wage inflation in the sheltered sector can be relatively easily compensated by productivity gains in the exposed sector, thus re-balancing the aggregate level of wage restraint between these two sectors in an economy. Some countries have used coordination mechanisms, as well as strict fiscal rules, to ensure low levels of wage inflation remained under EMU. Other countries, however, have not been so able to contain their sheltered sectors. Higher levels of wage inflation are more problematic as they impose disinflation or a less competitive real exchange rate on the exposed sector. The exact mix between the two sectoral inflation rates is determined by the relative power of wage-setters in the exposed and sheltered sector and by the extent to which the leadership role of the exposed sector is institutionalised in wage bargaining systems.

VI. Conclusions: Implications of Sectoral divergence for EMU?

EMU presents a convenient setting to examine the rise in divergence between sectoral wage setters with different wage objectives. The pre-EMU regime imposed hard monetary rules upon all wage setters, forcing unions in both the exposed and sheltered sectors to exert wage restraint. The removal of these rules has produced very different effects for wage setters across countries. For the exposed sector, EMU has not changed much: competitiveness still constrains wage growth via the threat that excessive wage settlements will lead to parallel drops in unemployment. The same cannot be said of sheltered sector wage setters. However, institutional constraints in the form of either the SGP or wage coordination frameworks have

produced different wage trajectories for the sheltered sector across EMU. These trajectories, outlined in the preceding section, provide more than just an academic exercise for the observation of sectoral interests in the face of institutional constraints. They also have important consequences for the future of EMU and collective bargaining.

If collective bargaining institutions – specifically wage coordination frameworks – can lead to the continuation of wage restraint in the sheltered sector, such constraints could contribute to increased sheltered sector discontent if gains from wage restraint are not felt economy wide. Germany provides an important example of such tensions. After pursuing a policy of high wage moderation for nearly ten years, with little to show for it in private consumption growth, Germany's pilots (VC), hospital doctors (Marburger Bund – MB) and train drivers unions (Deutsche Lokführer – GDL) exited Germany's main union federation, the DGB, and with it the pattern bargaining wage coordination system in order to negotiate higher wage increases (EIRO 2007a; EIRO 2008). Growing wage militancy from ver.di, DGB's large white-collar services sector union (of whom MB and GDL used to belong), suggests that these three cases of union decoupling may not be exceptions to the rule, and further decouplings could be looming on the horizon (ver.di, 2008).

If, on the other hand, fiscal constraints, such as the SGP, have prompted continued sheltered sector wage moderation under EMU, tensions arise not between the exposed and sheltered sector, but between the sheltered sector and the state. In France, militancy among civil servants unions against the Government trying to contain public sector pay growth, prompted a series of crippling strikes in the public sector in 2004 and 2005 (EIRO 2005a; 2005b). Heightened tensions between public sector unions and the state may not have been the main driver behind France's motivation to reform the SGP's in 2005, but militant public sector unions did present a high degree of inelasticity to the French Government for fulfilling fiscal rules.

Finally, the third case discussed in this paper – that of sheltered sector unions receiving excessive wage increases at the expense of the exposed sector – presents institutional and economic difficulties to member-states, depending on the circumstance. If a coordination mechanism is in place which balances wage excess with heavy wage restraint in the exposed sector, then aggregate performance will not decline substantially. Finland's incomes policies provide an example of this coordination mechanism. However, unlike the first case discussed above, where the sheltered sector holds discontent towards the coordination institution, in this case, it is in the exposed sector where discontent arises. After several years of restrained aggregate nominal unit labour cost growth, exposed sector employers called for income agreements which provided higher wage increases to sectors experiencing labour shortages (EIRO, 2007b). National coordination mechanisms such as incomes policies can balance wage excesses in the sheltered sector, leaving national performance competitive, yet such a coordination mechanism can prove difficult to sustain if the exposed sector becomes dissatisfied in its deflationary role. Since 2007, bargaining in Finland has commenced at the sectoral level, rather than under centralised incomes policies, leading to high wage increases in the 2008 bargaining round.

If public sector unions push for and receive high wage increases, and the exposed sector cannot offset them via heavy wage restraint, preference divergence will have significant implications for aggregate economic performance. The Netherlands and Ireland provide a perfect example of such a situation. Wage excess in their non-market services sectors ballooned in the early 2000s, promoting a similar balloon in aggregate nominal unit labour cost growth and ultimately inflation. While both countries relied on their more reactive wage coordination institutions (social pacts) to introduce constraints on wage growth in sheltered sectors, their experiences demonstrate that the absence of a hard monetary constraint can pose problems for aggregate wage restraint performance in certain phases of

the business cycles should sheltered sector unions become successful in pushing through their wage preferences. If these sheltered sectors are too successful in some countries but not others, there will be severe implications not only for the economic competitiveness of countries that are unable to reign in sheltered sector wage militancy, but also for the continuation of aggregate convergence across EMU.

NOTES:

1. Because wage restraint performance between sectors within countries is compared, it is unimportant if real or nominal wage restraint is used (as all sectors in one country face the same price level. For comparisons of wage restraint differentials between sectors within countries, nominal wage restraint is used. However, if cross-country comparisons are made, real wage restraint is used.
The words wage excess, wage inflation and wage restraint will be used interchangeable throughout this paper. Wage excess and wage inflation are both defined as the difference in nominal wage growth and labour productivity growth. Though wage restraint is technically the inverse of this measurement, it will be calculated the same way.
2. This paper will use the terms “non-market services” and “public sector” interchangeably, since the ISIC tabulations categories which non-market services is composed of lie predominantly within the public sector.
3. Luxembourg and Greece are excluded from the analysis.
4. I thank Michael Artis for this point.
5. While Austria and Finland were not formal members of the EU, they had established currency pegs with the Deutschmark during the 1980s. Austria established a hard currency peg policy with Germany in 1974 (Hochreiter & Winckler, 1995). During the 1980s, Finland had anchored the markka to a basket of (weighted) currencies, which included the Deutschmark (Add reference).

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