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Comparative Institutional Advantage in the European Sovereign Debt Crisis

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Abstract: Excessive fiscal spending is commonly cited as a root of the current European debt crisis. This paper suggests, like others, that the rise of competitiveness imbalances contributing to national imbalances in total borrowing are a better explanation for systemic differences towards EMU countries' exposure to market speculation. We identify one driver of this divergence: a country's capacity to limit sheltered sector wage growth, relative to wage growth in the manufacturing sector. Corporatist institutions which linked sectoral wage developments together in the surplus countries provided those with a comparative wage advantage vis-à-vis EMU's debtor nations, which helps explain why the EMU core has emerged relatively unscathed from market speculation during the crisis despite the poor fiscal performance of some of the core countries during EMU's early years. Using a panel regression analysis, we demonstrate that rising differentials between public and manufacturing sector wage growth, and wage governance institutions which weakly coordinate exposed and sheltered sectors, are significantly correlated with export decline. We also find that weak governance institutions are significantly associated with more prominent export decline inside as opposed to outside a monetary union.

Keywords: European Monetary Union, European Debt Crisis, Corporatism, Sectoral Wage Bargaining

What systemic factors explain why some sovereigns in Europe's Economic and Monetary Union (EMU) have fallen victim to heavy market speculation amidst the current crisis, while others have remained unscathed? While many acknowledge the role of the 2008 financial crisis as the catalyst which initiated Europe's debt crisis, recent debate has questioned whether roots of the crisis were established before this event. Amongst various Europe's political leaders and policy makers, the fiscal recklessness hypothesis (the fiscal crises within the EMU periphery were driven by unsustainable public borrowing prior to the crisis) has gained significant traction. Though this hypothesis explains why financial markets doubt Greece and Italy's capacity to repay debts, it fails to travel to other EMU cases. Spain and Ireland, with better fiscal positions than Germany up until the crisis, were subject to harsh market speculation. Belgium, in contrast, with persistent high public debt, has seen little shift in its bond yields over the past three years. Indeed, once Greece, a unique outlier whose poor fiscal performance is tied to endemic corruption and tax evasion, is removed from the EMU landscape, fiscal performance prior to the crisis becomes a poor predictor of the variation in current nominal interest rates on long-term government bonds, a common indicator used to gauge a country's default risk. Rather, indicators tied to *competitiveness* – export share growth and the average current account balance prior to the crisis – fare better in explaining current diversity in bond yields across EMU.

In this paper, we provide an institutional hypothesis to explain variation in the exposure of EMU member-states to the current crisis. Extending recent insights on divergences in current accounts as a source of variation in crisis exposure, we argue that countries with corporatist institutions that tie wage growth in sheltered sectors to sectors exposed to trade have encountered little speculative pressure, despite their pre-2008 fiscal condition, as these institutions helped them maintain competitiveness, producing positive trade balances and current account surpluses, and

hence reducing the need for significant international borrowing. Countries without such institutions that tie wages in sheltered sectors to those in exposed sectors lost competitiveness vis-à-vis their corporatist neighbors, incurred trade/current account deficits and hence had to rely more heavily on international borrowing. In failing to integrate sectoral and national labor markets alongside monetary policy, the EMU project has created an asymmetric union not only between monetary and fiscal integration, but also between monetary and labor market adjustment. The lack of labor market integration across EMU member-states has forced countries to rely upon national corporatist institutions in order to adjust. In other words, corporatism is a crucial institutional advantage which differentiates EMU's creditors from its debtors.

The next section reviews the debate on the origins of the European debt crisis. After outlining the arguments of the two major camps – those which attribute variation in speculative exposure to fiscal divergence and those which attribute it to competitive/current account divergence – we provide rudimentary bivariate analyses which test the robustness of both. These preliminary analyses largely support the competitiveness hypothesis. We depart from the competitiveness hypothesis, however, by offering an institutional account of how differences in labor market organization and governance within EMU's member-states may explain divergences in the real exchange rate in the early years of EMU. We then test our hypothesis via a panel regression analysis, examining the influence of exposed and sheltered wage differentials, as well as a sectoral wage-governance dummy, on export share growth in 17 OECD economies. We find that countries with high inter-sectoral governance, minimizing gaps between sheltered sector and manufacturing sector wage growth, witnessed more prominent growth within their export shares, and that, when controlling for interactions with monetary regime, such growth was conditional on monetary union. The paper concludes with a discussion on corporatism and Optimal Currency

Area (OCA) theory, highlighting the irony that the more 'rigid', centralized, and coordinated wage bargaining regimes have best weathered adjustment in a monetary union.

Making sense of Europe's sovereign debt crisis

Within the (young) debate about the origins of the European debt crisis, two camps have emerged which seek to explain speculative divergence across E(M)U's sovereigns. The 'fiscal' position (Buiter and Rahbari, 2010; Lane, 2012), which dominates thinking in the 'troika' (the EU Commission, European Central Bank, and International Monetary Fund) and among some German policy makers, has identified the Euro crisis as a consequence of fiscal excesses prior to the 2008 financial crisis. Buiter and Rahbari (2010) are perhaps the strongest proponents of this view, arguing that excessive fiscal spending and pro-cyclical behaviour by national authorities prior to 2008 further exacerbated deficit problems within EMU's Southern rim after serious financial bail-outs. Others supporting this argument have attributed the current fiscal crisis not so much to reckless behavior of governments, but to the low real (and nominal) interest rates in the early years of the single currency, which provided sovereigns, particularly in peripheral economies that did not have access to such low rates in the early and mid-1990s, with cheap credit (Lane, 2012). While membership in the Euro-zone provided low exchange rate and interest rate premia that encouraged government borrowing, in the design of EMU, excessive government borrowing would be checked through the restraints imposed by the Stability and Growth Pact (SGP) and the 'no bail-out' clause, which stipulates that the ECB or other member states would not bail out erring governments. However, some doubted whether the SGP possessed the credible threat against over-borrowing of its predecessor since, in contrast to the Maastricht criteria, failure to comply with the SGP would not result in EMU exclusion (Johnston, 2012). Moreover, relaxation of the SGP's fiscal rules by France and Germany led to

soft budget constraints after 2004, and further enabled the high deficit nations to succumb to 'binge' borrowing, as markets discounted for the best case scenario for convergence even when some nations were showing signs of fiscal deterioration (Baskaran & Hessami 2012).

The 'competitiveness' position provides a more encompassing explanation for the tragedy of EMU, focusing on the rise of persistent imbalances among the current accounts of the Euro-zone's member states: current account and trade deficits of a country are symmetrically mirrored by the *total* external borrowing (both public *and private*) in the capital account by the balance of payment identity (Wihlborg et al., 2010; Belke and Dreger, 2011; Bibow, 2012). According to this argument, divergence in speculation by financial markets was not tied to a country's fiscal, but total solvency, which was reflected in the size and persistence of a country's current account deficit during EMU's first decade (see Giavazzi and Spaventa 2011). Current account deficits can be sustainable if external borrowing is used to enhance productivity in the export sector. If a country is able to transform enhanced productivity into export growth in future periods, future current account surpluses imply that the inter-termporal solvency constraint will hold (external borrowing under current account deficits are repaid once current account surpluses emerge). However, if foreign borrowing primarily goes into non-tradable sectors, which are not capable of producing a significant export surplus necessary to correct current account deficits, in times of crisis markets will view these persistent imbalances as unsustainable and a signal of possible solvency problems. In considering both public and private elements of borrowing, this argument highlights why the fiscal camp offers neither a necessary nor a sufficient condition for speculative attacks; countries with public debt can avoid speculative attacks if they produce significant private savings (i.e. Germany) in the capital account, while countries with public

savings can be subject to aggressive speculation if they produce significant (external) private dissavings (Ireland and Spain).

Divergences in current accounts in the Euro-area between the North and South, which grew persistently since EMU's introduction in 1999 (Eurostat, 2013)[1], can be explained by divergent trade balances and national competitiveness. Because monetary union removes nominal exchange rates between Euro-zone member-states, real exchange rate (RER) competitiveness is solely determined by relative inflation: countries with lower inflation hold more advantagous real exchange rates, and hence greater propensities for trade surpluses, than those with higher inflation. Under a fixed monetary system, where the majority of trade is intra-regional[2], wage moderation pursued by one group of countries (the North), serves as a 'begger-thy-neighbor' policy vis-à-vis those (the South) that have not pursued such wage moderation (Perez-Caldentey and Vernengo, 2012; Bibow, 2012). Current account balances, however, are zero-sum games under a beggar-thy-neighbor approach: in order for surplus nations to hold a trade surplus vis-à-vis deficit nations[3], the former must lend money to the latter via the capital account. Assuming a balance of payments equilibrium (and a negible balance item), nations with trade deficits must finance these deficits via borrowing from surplus countries, hence realizing a positive capital account balance. Under EMU, savings in the countries with a trade surplus were invested in capital and consumption projects (most notably in real-estate, which further fueled wage spirals) in countries with trade deficits (Gros, 2012; Giavazzi and Spaventa, 2011; Holinski et al, 2012). Gros (2012) outlines that banking systems within Europe possessed a heavy home bias, and hence the excess savings in the north was predominantly invested in the Euro-zone itself. As peripheral countries witnessed a consumption (and real-estate) boom, their competitiveness further deteriorated vis-à-vis the core where wage moderation was strictly enforced. Though

such imbalances could easily be recitifed outside of monetary union via a depreciation of the exchange rate, a common currency removes this option, pushing the burden of adjustment onto labor costs. The south's failure to adjust its labor costs, and hence its public *and* private borrowing imbalances, vis-à-vis the North preceeding the crisis, prompted markets to doubt its solvency, attaching higher interest rate premiums to its sovereign bonds once the crisis was in full swing.

A simple bivariate analysis allows a preliminary assessment of the fiscal and competitiveness hypotheses. Since government bond yields in EMU member-states failed to diverge until 2010, a more comprehensive panel analysis would be difficult.[4] Even though bivariate analysis leaves out statistical controls[5], it presents a liberal estimate to assess the fiscal and competitive hypothesis; if the correlates for either of these are weak, it is unlikely that they would become stronger with the inclusion of more variables. We selected 2011 long-term nominal interest rates as our (dependent) indicator of proxy market confidence in an EMU member-state's capacity to repay its existing government debt (greater default risk carries a higher interest rate premium). For proxies of fiscal performance, we apply two indicators; average net government borrowing and average government debt, both as percentages of GDP, between EMU entry (1999 for all countries except Greece, whose entry year was 2001) and 2007, the year before the crisis. 2007 provides a convenient cut-off point in avoiding endogeneity problems, as spreads in long term nominal interest rates between EMU member-states were highly contained. Figures 1a and 1b present basic scatter plots between Euro member-states' 2011 long-term government bond yield and their pre-crisis average deficit and debt levels, respectively. Best fit line estimates (including and excluding Greece) are included below.

<<Figure 1a about here>>

<<Figure 1b about here>>

According to the fiscal hypothesis, we should expect a significant negative relationship between pre-crisis net government lending and crisis bond yields (countries with negative government balances should have higher bond yields and vice versa), and a significant positive relationship between pre-crisis debt values and crisis bond yields. None of the slope estimates for the fiscal indicators (including or excluding Greece), however, are significant at a 90% confidence level. While the average fiscal deficit prior to the crisis on its own explains roughly one quarter of the variation in the 2011 interest rate among EMU member-states, this figure is highly dependent upon the inclusion of Greece, EMU's fiscal outlier. If Greece is excluded, prior fiscal performance explains roughly 1% of the variation in 2011 bond yields. An even starker contrast emerges when examining the influence of average pre-crisis debt levels on 2011 bond yields. When Greece is included, prior debt performance has a positive, but insignificant, association with 2011 bond yields. When it is excluded, prior debt performance has a *negative* association with 2011 bond yields, largely the result of Ireland's and Portugal's low pre-crisis debt levels.

Though Figures 1a and 1b exclude other controls, one fact is evident; fiscal performance prior to the crisis is not a robust explanation for the sovereign debt crisis, as it is highly dependent on the inclusion of Greece, EMU's notorious case of fiscal excess. Turning to the competitiveness hypotheses, we selected two proxies of competitiveness to gauge whether variation in pre-crisis competitive performance is associated with variation in 2011 bond yields: growth in export shares and average current account balances (as a percentage of GDP) between EMU entry and 2007. Figures 2a and 2b present similar bivariate analyses which examine the relationship between these two indicators and 2011 long term government bond yields.

<<Figure 2a about here>>

<<Figure 2b about here>>

The competitiveness hypothesis suggests significant negative relationships between (pre-crisis) export and current account performances and crisis bond yields. Whilst we urge caution in drawing definitive conclusions about the relationships between the indicators above given the absence of controls, the two competitiveness indicators appear to offer a more robust explanation for the variation in 2011 interest premium within EMU member-states than the fiscal indicators. Slope coefficients are significant at a 90% confidence level or higher, regardless of whether Greece is included. Moreover, the exclusion of Greece does not significantly alter the sign or significance of the slope estimates or the R-squared values of the bivariate model. Export growth between EMU entry and 2007, on its own, explains over 20% of the variation in 2011 interest premia, while current account balances alone account for over two-thirds of the variation in 2011 interest rates. Rather than merely explaining Greece and Italy, the competitive argument also helps generalize the experiences of Ireland, Spain, and Portugal, which witnessed stagnant export growth, larger current account deficits and higher interest premium in 2011, as well as that of Germany and Belgium, which witnessed current account surpluses, despite their high debt balances.

The competitiveness argument raises an important argument in the debate on the origins of the European debt crisis. It is rather weak, however, in providing specific explanations as to what fostered internal adjustment, and hence current account surpluses, within the EMU core (Austria, Belgium, Finland, France, Germany and the Netherlands) which were largely absent within the EMU periphery (Greece, Ireland, Italy, Portugal and Spain), even though many within this camp acknowledge that adjustment lies predominantly within the realm of labor-markets

(Stockhammer, 2011; Holinski et al., 2012). Given the multitude of data (and theoretical) arguments that emphasize how corporatist institutions can promote comparative advantage via wage restraint, this lack of analysis into the institutional determinants of competitiveness divergence in the Euro-Area is extremely puzzling.

The balance of this paper explores if corporatist institutions facilitated export performance in the North, and whether these institutions intensified any comparative advantages under monetary union. Our argument rests on the analysis of how wage dynamics between sectors, specifically those exposed to and sheltered from trade, influence national inflation and hence competitive developments, which we assume is an important determinant of member-states' exposure to the crisis. The EMU core possessed corporatist collective bargaining institutions which tied wage developments in sheltered sectors to those in the exposed, thus limiting the inflationary potential of the sheltered sector and enhancing national competitiveness. The EMU periphery, on the other hand, lacked these institutional links between the sheltered and exposed sector – consequently wages-setters in sheltered sectors in the EMU periphery, not subject to a competitive constraint like their exposed sector counter-parts nor to an institutional constraint like their sheltered sector counter-parts in the EMU core, were able to push for inflationary wage increases which produced adverse consequences for national inflation and hence relative price competitiveness.

A Corporatist Comparative Advantage: Explaining the Core's Success and the Periphery's failure

We begin our analysis with several assumptions. First, we assume two sectors in each country: an exposed sector, whose wage setters are under competitive pressure to constrain wage growth

given high exposure to trade, and a sheltered sector whose wage setters face a lax competitiveness constraint, given the relative absence of competitors. While these two sectors may not embody the entirety of a country's labor force, we assume their combined weight in the economy, both in terms of employment and output, is significant enough that wage developments would influence national inflation either directly via the influence of wages on price mark-up strategies, or indirectly via the influence of wages on demand. The real exchange rate, which is a function of a country's nominal exchange rate, e, multiplied by the ratio of the domestic to foreign price level (RER = $e\frac{P_d}{P_f}$), indicates the relative competitiveness of a country vis-à-vis their trading partners (the nominal exchange rate for regions that share a common currency is equivalent to 1, meaning that the real exchange rate between members of a currency union is purely a function of relative prices). If a country is successful in keeping its inflation rate low relative to its trading partners, it realizes a competitive depreciation in the RER which should improve its trade balance. If a country's national inflation rate exceeds that of its trading partner, the result is, all other things equal, an appreciation in the RER, which worsens its trade balance.

We assume that wage-setters within the exposed sector face strong incentives to pursue wage moderation (i.e. real wage growth below or at least on par with productivity growth) because their employment status is heavily tied to competitiveness: if wages are too high, this will lead to a reduction in employment via one of two employer strategies. If employers pass wages increases onto prices, their products become more expensive vis-à-vis their trading partners, yielding lower demand from international buyers, leading ultimately to a reduction in production. Likewise, if employers do not translate wage increases into rising prices, they compensate for an increased wage bill by shedding employment. Regardless of which strategy is chosen, the end

result is the same–reduced employment–thus providing exposed sector wage-setters the incentive to limit their wage demands.

Wage developments within the sheltered sector, in contrast, are not directly influenced by trade, and wage-setters in this sector therefore face a considerably less restrictive competitiveness constraint, if they face one at all (in the case of some public services). Despite the fact that wage-setters within sheltered sectors do not face similar incentives to enforce wage moderation as those in the exposed, wage developments within the sheltered sector can influence a country's trade developments given its weight within national inflation: the aggregate national inflation rate is the weighted average of the two separate inflation rates in the exposed and in the sheltered sectors. Re-writing a country's RER as a composite of sectoral prices (RER = $e\frac{[\alpha P_{d,e}+(1-\alpha)P_{d,s}]}{[\beta P_{f,e}+(1-\beta)P_{f,s}]}$, where α/β and (1-α)/(1-β) are the weights associated with the exposed and sheltered sector prices in the domestic and foreign inflation rate, respectively), sheltered sector wage growth becomes an important determinant of the RER via its impact on sheltered sector prices. The presence of a competitiveness constraint limits the mark-up power of employers in the exposed sector, keeping price developments relatively similar across countries. Hence, RER developments are crucially linked to a country's capacity to limit wage inflationary pressures within the sheltered sector. This places wage-setters in the exposed sector in a precarious position vis-à-vis their counter-parts in the sheltered sector: while the former have incentives to moderate wages in order to remain (price) competitive, the latter do not but are able to influence the employment status in the former if they price wages high enough to influence national inflation.

Because external competitiveness imposes a hard constraint on the export sector, the exposed sector will set wages taking into account relative wage inflation rates in the main trading partners

(if it does not, in this analysis, it simply exacerbates the inflationary pressures arising from the sheltered sector). There are, therefore, three logically possible worlds. In the first one, inflation in the sheltered sector is kept under control through legal, political and institutional means. In this world, the aggregate wage inflation rate will not rise, and almost certainly not faster than elsewhere, and relative competitiveness is likely to be reasonably stable or improving. If such institutions allow governments to manage public sector wages, these competitiveness considerations can even produce beneficial fiscal effects. The second scenario combines high wage inflation in the sheltered sector, and high productivity and moderate wage growth in the exposed sector, proportionate to the relative sizes of both sectors. Aggregate inflation remains modest, and the country's export sector does not price itself out of export markets. The third possible world, finally – a variation on the second, but with very different outcomes – combines a sheltered sector with inflationary wages and an exposed sector, which, hard as it may try, is unable to bridge the relative inflation gap. Aggregate inflation thus increases, the RER appreciates, and export prices rise, with the concomitant negative effect on competitiveness.

The dualistic nature of wage moderation objectives by sector is not a novel idea (see Iversen, 1999; Garrett and Way, 1999; Franzese, 2001; Johnston and Hancké, 2009). Many in this literature have analyzed how wage bargaining institutions can bridge these diverging incentives by tying wage-determination in non-tradable sectors to tradable ones (Franzese, 2001; Baccaro and Simoni, 2007; Traxler and Brandl, 2010). Traxler and Brandl (2010) and Brandl (2012) offer perhaps the most empirically sophisticated analyses. They outline how bargaining regimes that constrain the public sector – the key 'sheltered' sector, with strong trade unions and collective bargaining systems set against a background of employment security – influence national wage outcomes. Collective bargaining systems that transfer significant trend-setting power to

employers and unions in the exposed sector, are particularly effective at limiting wage growth in sheltered sectors. Building on these insightful analyses, we identify how bargaining systems influence wage differentials between exposed and sheltered sectors and how these wage differentials produce divergent competitive performances within EMU. Wage-setting regimes that discipline wages in the sheltered sector should, all else equal, witness lower inflation, a more competitive RER, and hence a trade surplus, which translates into a current account surplus. By the balance of payments identity, these regimes will be external net creditors. Wage setting regimes where sheltered sector wages are allowed to significantly surpass those in the export sector should witness higher inflation, a less competitive RER, and hence, a trade/current account deficit. This requires greater public *and private* external borrowing in order to finance the current account deficit.

The literature on sectoral corporatism has demonstrated that bargaining regimes which are most conducive towards limiting sheltered sector wage growth are those which grant considerable trend-setting authority to exposed sector wage-setters, the state, or both. Both actors favor limited sheltered (especially public) sector wage growth: the former in the name of competitiveness, the latter in the name of fiscal prudence. Such bargaining regimes that transfer considerable powers to exposed-sector actors and/or the state can take three shapes. The first are pattern bargaining systems where the exposed sector leads national wage developments (Traxler and Brandl, 2010). The second consists of state-coordinated systems that enforce a permanent wage law or permanently encourage export-sector led bargaining (Johnston and Hancké, 2009). The third consists of incomes policies/wage pacts with a high degree of 'governability', which grant employers and/or governments considerable authority in the determination of sectoral/national wage settlements[6] -- typically this is introduced by governments after

unsuccessful attempts to produce wage moderation (Brandl, 2012). In contrast, bargaining regimes that have been identified as limiting the role of the exposed sector and the state in collective bargaining are: peak-level bargaining systems where wages are determined by peak-organizations which embody multiple sectors (Traxler, Blaschke and Kittle, 2001); and, incomes policies or wage pacts with a low degree of governability (Brandl, 2012). The influence of a wage bargaining regime without coordination on wage growth differentials is more difficult to predict. Under Baumol's framework (Baumol and Bowen, 1965) if wage-setters in an uncoordinated regime individually agree on wage settlements that are equivalent to inflation (or average wage increases), differences in sectoral wage growth should be nil. If, however, wages are set according to a neo-classical framework, where workers receive pay awards based upon their productivity, these regimes may produce negative pay differentials between sheltered sectors and manufacturing, as the former tends to consist of service sectors where productivity growth is lower than in goods-based production sectors.

Peak-level bargaining, as Traxler and Brandl (2010) point out, can be more conducive towards delivering sheltered sector wage restraint if the exposed sector is given a leading voice and governance within peak-organizations is high–this explains the success of the Danish case in the 2000s, with the rise of five major wage bargaining cartels where wage setting was anchored by the industrial/manufacturing cartel. Incomes policies and, more notably, wage pacts with high governability are not usually permanent systems of coordination, as these pacts tend to be reactive by nature, often introduced and (in some cases unilaterally) implemented by governments in times of crisis. Nevertheless, they are frequently used to correct wage inflation across the entire economy, including sheltered sectors. Hence, this method of coordination is effective at producing temporary wage moderation in the sheltered sector (even if persistent

government intervention may not be acceptable to social partners). These types of systems, and where they exist among developed economies, are outlined in Table 1 below.

<<Table 1 about here>>

Given the distinction in the literature on how bargaining regimes influence sheltered sector wage developments, we expect EMU countries with bargaining regimes in the left-hand column of Table 1 (Austria, Belgium, Finland, France, Germany, and between 2002 and 2004 the Netherlands) to exert greater levels of wage moderation compared to countries in the right-hand column (Spain, Italy, Portugal, Ireland and the Netherlands between 2000 and 2001 and after 2005). Consequently, countries with bargaining regimes that are conducive towards wage moderation will witness lower national inflation, and therefore a more competitive RER and hence improvements in their export shares.

Empirical Model and Variable Selection:

We select a 17 country sample from 1980 to 2007, which includes ten countries that adopted the euro in 1999 (Austria, Belgium, Finland, France, Germany, Ireland, Italy, the Netherlands, Portugal, and Spain – Greece is excluded due to the lack of sectoral data, although we would expect it to conform to the hypothesis above)[7] as well as seven non-EMU participants (Australia, Canada, Denmark, Japan, Sweden, the UK, and the US). We included non-EMU countries in this sample to analyze possible interaction effects between sheltered sector wage suppression and EMU (see results in Table 5). If we only considered interaction effects between the EMU dummy and corporatist institutions for EMU countries, one could argue the effects may be driven by common post-1999 timing effects rather than monetary union itself; the inclusion of

non-EMU countries provide a counter-factual to developments happening in EMU countries after 1999. We selected 2007 as the end of our sample for two reasons: sectoral data which we use for the construction of one of our primary independent variables only exists until 2007 for the dataset we utilize. Additionally, given the extraordinary circumstances since the crisis for countries with non-competitive bargaining systems and their subsequent regulation of wages in the (sheltered) public sector, we sought to remove this exceptional period after 2007.

From our proxies of competitiveness above in the bivariate analysis, we selected export share growth[8] as our primary dependent variable of interest, rather than current account dynamics, because the export share is the primary channel in the current account through which our theory operates. Countries with a competitive RER should witness greater export expansion than those with an uncompetitive RER. We selected two independent variables as proxies for sheltered sector wage suppression: 1.) an output based measure, the (lagged) differential between sheltered and manufacturing sector wage growth (results presented in Tables 3 and 4); and, 2.) an input measure, a simple sectoral wage coordination institution dummy which embodies the value of 1 if a country possesses one of the three bargaining institutions that enforce sheltered sector wage moderation, i.e. pattern bargaining, state-imposed coordination or incomes-policies/wage-pacts with high governability (results presented in Table 5). Sheltered sector wage suppression is defined as the difference in the growth rate of the hourly wage in the sheltered sector and the growth rate of the hourly wage in the exposed sector. Hence what is captured is the degree to which sheltered sector wage setters have over/undershot wage developments within the (exposed) manufacturing sector, with positive/negative developments indicating that sheltered sector wage setters have managed to secure more/less lucrative wage gains than their exposed sector counter-parts. We emphasize, however, that when regressions are run with absolute real

sectoral wage dynamics as the primary independent variables in separate models, both real sheltered sector wage growth and real exposed sector wage growth are significantly associated with export decline.[9]

We selected an employment-share weighted composite of the public administration and defense, education, and health and social work sectors-ISIC categories L, M and N, respectively–given these sectors' heavily sheltered status from both foreign (and domestic) competition. For the exposed sector, we selected manufacturing (ISIC category D) as a proxy. Wage and employment data are taken from the EU KLEMS database. Table 2 presents average wage growth differentials between our sheltered sector proxy and exposed sector proxy by bargaining regime between 1980 and 2007. The most persistent suppression of annual wage growth in the sheltered sector relative to the manufacturing sector is found in bargaining regimes that are characterized by pattern bargaining, state-imposed wage laws/export-sector coordination, and incomes policies/wage pacts with high governability. State-imposed coordination was the most effective at delivering sheltered sector wage suppression: wage growth in the sheltered sector was, on average, 1.14% below that in manufacturing each year between 1980 and 2007, implying the emergence of a 11.4% wage gap in favor of the manufacturing sector over a ten-year period). Peak-level coordination with low governability and incomes policies/pacts with low governability proved the least effective at delivering sheltered sector wage suppression.

<<Table 2 about here>>

Regarding measurement of the sectoral wage coordination institution dummy, this institutional proxy of sheltered sector wage suppression took the value of 1 for countries which possess bargaining institutions that are conducive towards limiting sheltered sector wage settlements

(pattern bargaining, state imposed coordination, and incomes policies/wage pacts with high governability) at time t, and 0 if otherwise. Six countries within our 17 country sample (Canada, France, Germany, Japan, the UK, and the US) maintained the same bargaining institutions over the 1980-2007 period. For this reason, we conducted these regressions without country fixed effects, in order to avoid perfect multicollinearity problems within these six panels. Data on bargaining regimes from 1980 to 2003 was taken from Brandl (2012), while we updated data from 2004-2007 using wage pacts data from Visser (2011) and various articles from the European Industrial Relations Observatory.

We employ a fixed effects panel regression model of the 17 countries above from 1980 to 2007 (for the sectoral wage-governance dummy regressions, we employ a random effects model) to test the relationship between sheltered sector wage suppression and export performance. The selection of growth rates, rather than levels delivers an added benefit for fixed effects; using a growth rate for our main dependent and most of our independent variables, rather than levels, makes the use of country fixed effects less problematic, as these dummies crowd out country-specific effects which are common in levels (see Plümper, et al. 2005). Our results in Tables 3 and 4 remain significant and robust when we select random effects as an estimator[10], suggesting that they do not merely capture within-country, time variations, but also (in the random effects models) cross-national variation. Our empirical model can be summarized as follows:

$$\Delta(X/GDP_{,i,t}) = \alpha_{i,t} + \beta_1(SheltWageSup_{i,t-1}) + \Sigma\, \beta_k X_{k,i,t} + \Sigma\, \beta_m Z_{m,i,t} + \varepsilon_{i,t}$$

$\Delta(X/GDP_{,i,t})$ is the year-on-year change in country i's export share at time t, $SheltWageSup_{i,t}$ is the degree of sheltered wage suppression–measured, in turn, as the difference in log changes in the sheltered sector and manufacturing hourly wage for country i at time t-1 (results presented in

Tables 3 and 4), and as the crude sectoral wage-governance dummy (results presented in Table 5)–$\Sigma X_{k,i,t}$ is a vector of economic controls and $\Sigma Z_{m,i,t}$ is a vector of institutional controls. Data for export shares were taken from the EU's AMECO database. For the sectoral wage differential independent variable, the (lagged) difference is used to avoid endogeneity problems with the dependent variable, as well as multicollinearity problems with terms of trade shocks and changes in the real exchange rate which we incorporate as controls.

Regarding economic controls, we include year-on-year changes in net government borrowing, in order to test whether fiscal developments play a significant role in export expansion Table 3, columns III-VI), terms of trade shocks, total factor productivity (TFP) growth, and RER shocks. Though our theory of how sectoral wage dynamics influences export performance operates primarily via the RER, we include it as a separate control to account for RER movements that may be influenced by developments other than sectoral wages (such as the prices of non-labor factor inputs). We excluded terms of trades shocks from the wage-governance dummy regressions, given their slight, but significant, correlation with the dummy variable across all panels. Real interest rate shocks were purposefully excluded given their relationship by identity with RER shocks, via the interest rate parity condition.[11] Terms of trade, TFP, net government borrowing and real exchange rate data all stem from the EU's AMECO database.

For institutional controls, we included the level (not change) of social benefits as a percentage of GDP to account for Rodrik's (1998) hypothesis that highly open countries have large welfare states as an insurance mechanism against market risk; the proportion of legislative seats held by right parties to account for the fact that these parties may be more likely to pursue pro-trade policies which favor export-growth; wage bargaining centralization; and the employment share of the sheltered sector (employment in sectors ISIC categories L, M and N as a percentage of

total employment) to account for Garrett and Way's (1999) hypothesis that larger sheltered (public) sectors produce greater wage inflation and hence hamper macroeconomic outcomes. We do not control for general wage coordination, given its (obvious) collinearity with the sectoral coordination proxies in our statistical model, as well as its lack of distinction between different *types* of sectoral coordination, which we feel is more important in influencing competitiveness. Wage centralization data stem from Visser (2011), right-wing legislative seats stem from Swank (2006), social benefits as a percentage of GDP were constructed from EU AMECO data, and sectoral employment share data stem from EU KLEMS.[12] Given the presence of auto-correlation for the baseline regressions (columns I in Tables 3 and 5), we incorporated a panel-specific Prais-Winsten transformation into our models, which both corrects for auto-correlation and absorbs less time-series dynamics than a lagged dependent variable (Plümper et al, 2005).[13] Panel corrected standard errors are used to control for heteroskedascity within panels (Beck and Katz, 1995).[14] We also incorporate n-1 time dummies into our regressions in order to control for unobserved time effects.

In the first series of regressions, we test the preliminary relationship between the (lagged) difference in sheltered and manufacturing wages and growth in the export share with several important controls (TFP growth, terms of trade shocks and changes in the RER, of which the latter two are not included in the same models together due to multicollinearity problems[15]). Models I-III in Table 3 present the results using the (lagged) difference in public and manufacturing wages as the primary independent variable of interest, while Models IV-VI present results where the (lagged) change in net government borrowing is the independent variable of interest.

<<Table 3 about here>>

From Table 3, the (lagged) differentials between sheltered and manufacturing wages produces a significant dampening effect on export share growth, even when accounting for terms of trade, TFP, and RER shocks. This implies that countries where sheltered sector wage growth exceeds wage growth in the manufacturing sector will, ceteris paribus, witness shrinkages in their export shares, while countries where public sector wage growth is kept below manufacturing wage growth witness expansions in their export shares. The second interesting result that emerges in Table 3 is that changes in net government borrowing do ***not*** have a significant or pronounced influence in terms of beta coefficient magnitude on export share growth. In other words, countries which increase fiscal deficits year-on-year do not behave significantly differently in terms of export performance than countries which increase fiscal surpluses.

Results in Table 4 demonstrate the robustness of the difference in sheltered sector and manufacturing hourly growth wage variable while incorporating further institutional controls into the baseline model; in all models, the sectoral wage differential variable maintained consistency in terms of beta magnitude and significance. Other variables perform as expected (TOT shocks and RER shocks are associated with export share contraction while social benefits as a percentage of GDP are associated with export share expansion, per Rodrik's hypothesis[16]) or fail to hold significance (bargaining centralization). TFP growth possessed a (unexpected) negative beta coefficient, although it lacked significance in eight of the ten models it was included in between Tables 3 and 4 (if random effects estimators are used, TFP growth lacks significance in all models, suggesting that sheltered sector wage differentials, terms of trade shocks and RER shocks are more important predictors of export expansion). Partisanship also behaved unexpectedly, with more legislative seats held by right parties indicative of export decline, although it failed to retain its significance when RER shocks were controlled for (if a random

effects estimator is used, it loses significance in Model II, Table 4, but is significantly and positively associated with export share growth in Model IV of Table 4). Contrary to Garrett and Way's results, sheltered sector employment share exhibits an insignificant relationship with export share growth, indicating that it is not the size of the public sector that matters per se, but whether its wage demands can be controlled by the exposed sector.

<<Table 4 about here>>

Regression results for the high sectoral wage-governance dummy are presented in Table 5. As mentioned above, we excluded the terms-of-trade shock variable due to slight, but significant, collinearity between it and the governance dummy, as well as country fixed effects given perfect collinearity between them and the governance dummy within six panels. We conducted similar robustness checks as above, but contrary to the (lagged) sectoral wage differential variable, which lacked a significant interaction term with an EMU dummy, we also incorporated an interaction term between the wage-governance dummy and an EMU dummy to test whether the competitiveness enhancing effects of high sectoral wage-governance were magnified under monetary union.

<<Table 5 about here>>

The high sectoral wage-governance dummy, like sectoral wage differentials, displays consistency in terms of significance and sign across in Table 5. Given results from columns I-III, countries that possess one of the collective bargaining institutions where either export sector wage setters or the state constrains the wage outcomes of sheltered sector employees tend to experience an annual increase in their export shares that is 1-1.3% higher than countries that lack these institutions. In addition to the direct effect, the wage-governance dummy also suggests an

interesting, significant interaction with the EMU dummy (model IV, Table 5), implying that monetary union seems to have magnified the influence of high wage-governance institutions on export growth. While the hierarchical high governance dummy term just lacks significance at the 90% level (p-value=0.109), its interaction with the EMU dummy is significantly associated with export share growth. This suggests that the influence of high levels of (intra-sectoral) wage governance between the exposed and sheltered sectors on export performance may be conditional upon the monetary regime. According to Model IV (Table 5), countries with high governance institutions witness a 1.7% annual boost in export share growth, *but only if they are in monetary union*: countries that possessed institutions which suppressed sheltered sector wage growth witnessed an exclusive corporatist comparative advantage under their pre-crisis EMU tenure.

Discussion and Conclusion:

The results above provide evidence that countries in which wage developments in the (private and public) sheltered sectors were kept in check relative to those in the exposed sector report export gains. If sheltered sector wage excess emerges, the reverse happens: competitiveness falls and exports decline. The effects are the combination of current account surpluses and capital account deficits for the creditor nations (primarily in the north of Europe) and current account deficits accompanied by borrowing (in both the public and the private sector) in the others.

Importantly, this effect appears to operate though a (wage) price level effect, with domestic inflation eroding export competitiveness, thus leading to current account deficits, and not a fiscal effect, in which expanding budgets produce excessive public (and private) borrowing. Equally importantly, while the effect existed before the introduction of the euro, the fixed exchange rate

regime heralded by EMU has reinforced this dynamic because of the absence of a safety valve in the form of nominal exchange rate depreciations, which helped EMU economies correct excessive current account imbalances in the past. The crisis of EMU since 2010 may therefore primarily be a result of differences in wage-setting systems between north-western Europe and southern Europe, in which the former have been able to keep aggregate inflation under control through wage coordination (and concurrent supply-side productivity improvements), while the latter appear unable to do so. It is emphatically not a crisis of fiscal profligacy: budget balances show up as insignificant factors in our analysis. They are, if anything, symptoms of the problem, not causes.

Wages thus have been crucial in terms of inter-country adjustment in the European political economy since at least the introduction of the Maastricht criteria, if not before. Prima facie, this seems to confirm a central element in the standard interpretation of monetary unions and its challenges–the theory of optimal currency areas (OCA). According to that view, fixing exchange rates, interest rates, and fiscal policy inevitably implies that the bulk of adjustment runs through labor market flexibility. A closer look at the results here suggests that the world is not only more complex than these arguments suggest, but that this view covers, at best, only one possible world. The economies that have performed well under EMU have been those that relied on wage moderation–but the type provided by a combination of strong labor unions, wage coordination, and skills-based export competitiveness–almost the exact institutional opposite of the flexible labor markets proposed by OCA protagonists.

Wage moderation, however, is not an unmitigated blessing, as the inter-country dynamics of wage setting in EMU make clear. All other things equal, competitiveness gains in one group of countries as a result of RER depreciations must imply competitiveness losses as a result of RER

appreciations elsewhere. In effect, by targeting unit labor cost growth below that of their trading partners, and using relatively tight systems of wage coordination as a means to do so, the creditor countries have imposed current account deficits on the others who lacked the institutional capacity to moderate wages. This does not bode well for the future of the single currency. For even if the current crisis can be contained, for example through a dramatic fiscal restructuring of the euro-zone, that would only buy time. The structural dynamics associated with the current account divergences that led to the crisis, which themselves have deep roots in the different types of wage setting, will reassert themselves if they continue to remain unaddressed.

This has important implications for the policies currently (in 2012 and 13) adopted by the EU, especially in its Macro-economic Imbalances Procedure (MIP). The MIP is asymmetric, in the sense that the language regarding current account imbalances focuses solely on deficits, with little or no consideration that in a currency union which is (mostly) a closed economy, significant current account surpluses in one country imply significant current account deficits elsewhere. While some adjustment might be welcome, it is hard to see how 'internal devaluations', implying massive relative wage moderation in the deficit countries, can solve the problem on their own– assuming that beggar-thy-neighbor policies ever can. Without a parallel reflation or demand expansion in the creditor countries, particularly in Germany and among its well-performing neighbors, the problem is almost intractable and Europe is likely to witness stagnant growth and high unemployment in the South for quite some time. Put differently, alongside arguments for structural adjustment in the south, the European Commission should also consider using its influence to argue for significant wage increases or fiscal policies which increase disposable income, such as reductions in income and labor taxes, in Germany and the North for several years to come in order to allow southern Europe the space to adjust.

That, of course, is wishful thinking, if the arguments that have been coming from Brussels and Berlin since the onset of the euro-crisis are anything to go by. Whilst there has been some muted mention of higher wages among German trade unions, the general tenor of German policy makers (and in its wake, in its satellites in northern Europe as well) has been in favor of more, not less, austerity and continued wage moderation to strengthen exports. In addition, it is not entirely clear what actually would happen if Germany went on an expansionary course: the ECB's relatively dovish stance might – and according to its mandate almost certainly will – change, since rising German inflation is very likely to entail higher aggregate inflation throughout EMU. A reaction by the ECB thus would all but eliminate the gains made through 'symmetric adjustment', but with an additional price for Germany to pay in the guise of higher interest rates. Germany's reluctance to engage in expansive policies might be informed by a misguided understanding of its own interests, as many observers have pointed out, but it is also built on a hard political-economic understanding of monetary policy in Europe that leaves policy-makers and wage setters in the country little choice.

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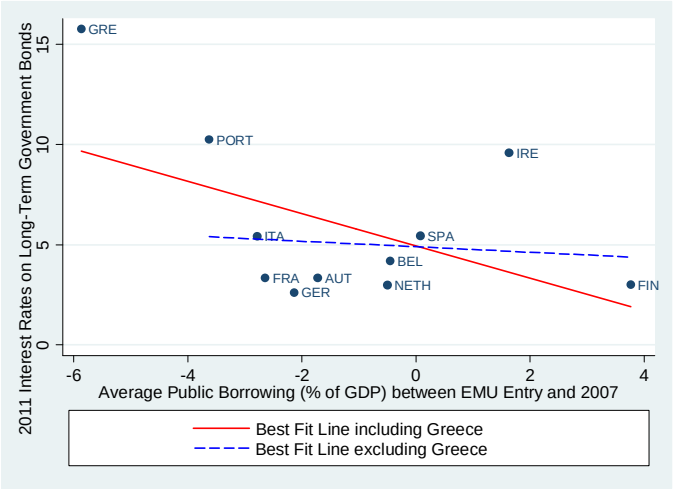
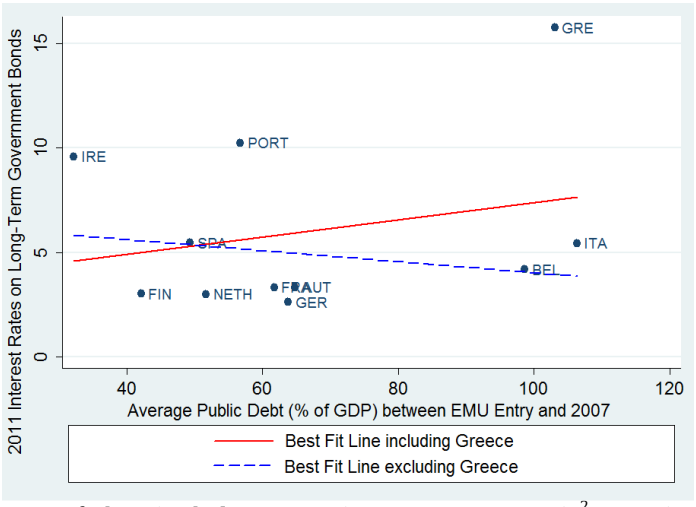
Tables and Figures:

Figure 1a: 2011 interest rates and pre-crisis deficit performance



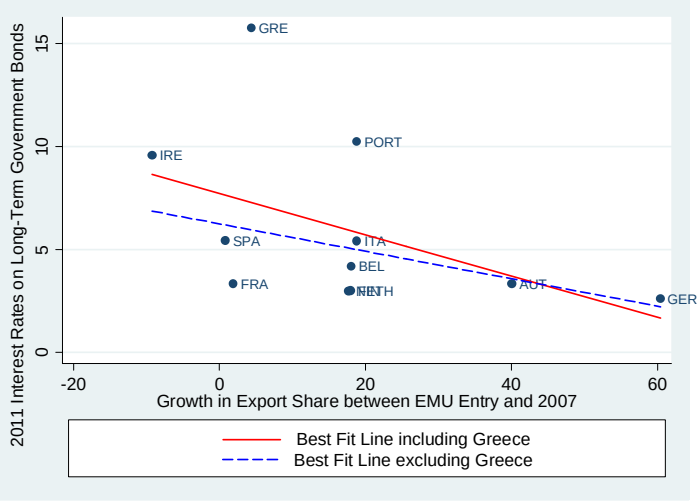
Best fit line (including Greece): y = -0.81x + 4.94 (R^2=0.257)
Best fit line (excluding Greece): y = -0.14x + 4.90 (R^2=0.012)

Figure 1b: 2011 interest rates and pre-crisis debt performance



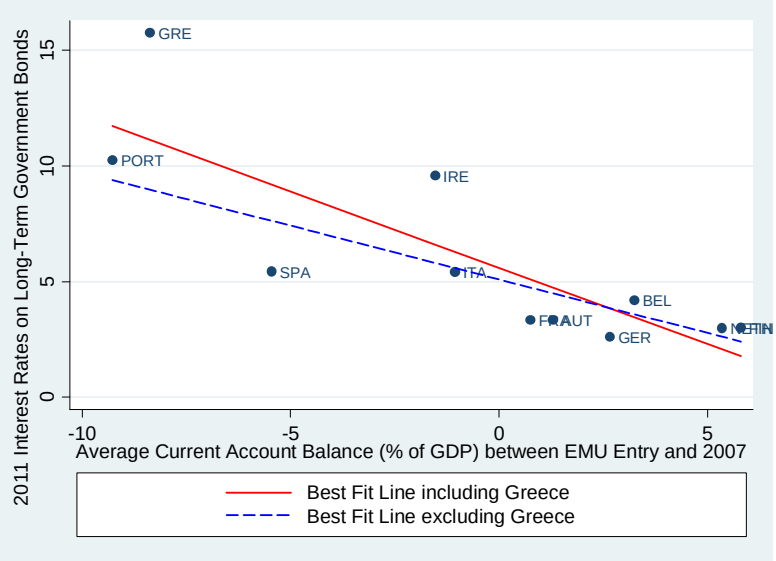
Best fit line (including Greece): y = 0.04x + 3.23 (R^2=0.063)
Best fit line (excluding Greece): y = -0.03x + 6.67 (R^2=0.050)

Figure 2a: 2011 interest rate and pre-crisis export growth



Best fit line (including Greece): y = -0.10x + 7.71 (R^2=0.217)
Best fit line (excluding Greece): y = -0.07x + 6.25 (R^2=0.230)

Figure 2b: 2011 interest rates and pre-crisis current account performance



Best fit line (including Greece): y = -0.66x + 5.59 (R^2=0.670)
Best fit line (excluding Greece): y = -0.46x + 5.09 (R^2=0.628)

Table 1: Wage moderation by bargaining regime and country (2000-2007)

Collective bargaining institutions that are conducive towards consistent sheltered sector wage moderation	***Collective bargaining institutions that are conducive towards temporary or permanent sheltered sector wage excess***
Pattern-bargaining systems (export-sector led): Austria, Germany, Japan, Sweden *State imposed wage laws/state coordination (export-sector led):* Belgium, France *Incomes policies/Wage Pacts with high governability*: Finland (2000, 2002-2006), the Netherlands (2002-2004)	*Peak-level bargaining*: - HG: Denmark, Finland (2001 & 2007), Netherlands (2000-2001, 2005-2007) - LG: Italy, Portugal, Spain *No coordination*: Australia, Canada, United Kingdom, United States *Incomes policies/wage pacts with low governability*: Ireland

LG indicates low governability, HG indicates high governability
Source: Brandl, 2012, Visser, 2011, European Industrial Relations Observatory (various articles). Greece is excluded due to the lack of available data.

Table 2: Differences in sheltered sector and manufacturing sector annual wage growth by bargaining regime, 1980-2007 average

Collective bargaining institutions that are conducive towards consistent sheltered sector wage moderation	***Collective bargaining institutions that are conducive towards temporary or permanent sheltered sector wage excess***
Pattern-bargaining systems (export-sector led): -0.66% annual difference *State imposed wage laws/state coordination (export-sector led):* -1.14% annual difference *Incomes policies/Wage Pacts with high governability*:: -0.41% annual difference	*Peak-level bargaining*: - HG: -0.40 annual difference - LG: 0.32% annual difference *No coordination*: -0.29% annual difference *Incomes policies/wage pacts with low governability*: 0.24% annual difference

Note: HG and LG refer to high and low governability

Table 3: The influence of sectoral wage differentials on export growth

Independent Variables	I	II	III	IV	V	VI
(Lagged) Difference in Sheltered and Man Wage Growth	-0.19*** (0.067)	-0.18*** (0.066)	-0.20*** (0.066)			
(Lagged) Difference in Net Government Borrowing				0 (0.000)	0 (0.000)	0 (0.000)
TFP Growth		-0.159 (0.192)	-0.202 (0.183)		-0.141 (0.151)	-0.166 (0.143)
TOT Shocks		-0.47*** (0.075)			-0.39*** (0.065)	
RER Shocks			-0.26*** (0.038)			-0.28*** (0.030)
Constant	2.839* (1.598)	0.181 (1.460)	-0.021 (1.186)	6.447*** (1.574)	2.956** (1.403)	0.941 (1.142)
Observations	474	473	474	433	433	433
Wald Chi-Squared Statistic (P-value)	0.000	0.000	0.000	0.000	0.000	0.000
R-squared	0.302	0.363	0.381	0.312	0.354	0.403

Dependent variable is the year-on-year change in the export share (X/GDP). Model used was an OLS, including a panel-specific Prais-Winsten AR1 term, from 1980 to 2007. N-1 country and time dummies included but not shown. Panel corrected standard errors are in parenthesis. *, **, and *** indicate significance on a 90%, 95% and 99% confidence level.

Table 4: Robustness results, the influence of sectoral wage differentials on export growth

Independent Variables	I	II	III	IV	V	VI
(Lagged) Difference in Sheltered and	-0.13**	-0.19***	-0.18***	-0.12**	-0.22***	-0.20***
Man Wage Growth	(0.057)	(0.057)	(0.067)	(0.055)	(0.057)	(0.067)
TFP Growth	-0.168	-0.328**	-0.163	-0.262*	-0.172	-0.211
	(0.146)	(0.160)	(0.194)	(0.141)	(0.163)	(0.186)
TOT Shocks	-0.35***	-0.51***	-0.47***			
	(0.066)	(0.077)	(0.076)			
RER Shocks				-0.27***	-0.23***	-0.26***
				(0.034)	(0.033)	(0.038)
Social Benefits (% of GDP)	0.617***			0.645***		
	(0.127)			(0.119)		
Legislative Seats Held		-0.042**			-0.024	
by Right Parties		(0.016)			(0.016)	
Wage Centralization		-3.596			0.967	
		(5.181)			(4.737)	
Sheltered Sector Employment Share			0.046			0.008
			(0.044)			(0.046)
Constant	-3.999**	2.308	-1.107	-5.71***	0.873	-0.262
	(1.593)	(1.792)	(1.969)	(1.571)	(1.668)	(1.810)
Observations	412	435	470	412	436	471
Wald Chi-Squared Statistic (P-value)	0.000	0.000	0.000	0.000	0.000	0.000
R-squared	0.381	0.406	0.365	0.433	0.383	0.381

Dependent variable is the year-on-year change in the export share (X/GDP). Model used was an OLS, including a panel-specific Prais-Winsten AR1 term, from 1980 to 2007. N-1 country and time dummies included but not shown. Panel corrected standard errors are in parenthesis. *, **, and *** indicate significance on a 90%, 95% and 99% confidence level.

Table 5: The influence of high sectoral wage-governance on export growth

Independent Variables	I	II	III	IV
High Sectoral Wage-	1.150**	1.071**	1.306**	0.789
Governance (1=yes)	(0.456)	(0.503)	(0.531)	(0.492)
TFP Growth	-0.12	-0.033	-0.109	-0.175
	(0.140)	(0.160)	(0.187)	(0.136)
RER Shocks	-0.210***	-0.197***	-0.214***	-0.209***
	(0.033)	(0.034)	(0.040)	(0.031)
Social Benefits (% of GDP)	0.199***			0.193***
	(0.073)			(0.074)
Legislative Seats Held		0.013		
by Right Parties		(0.008)		
Wage Centralization		1.668		
		(1.067)		
Sheltered Sector Employment			0.024	
Share			(0.032)	
EMU Dummy				-1.881*
				(1.045)
*EMU Dummy*High Sectoral*				1.711**
Wage-Governance				(0.856)
Constant	-3.263***	-1.966***	-1.367	-2.976**
	(1.205)	(0.739)	(0.928)	(1.210)
Observations	414	437	471	414
Wald Chi-Squared Statistic (P-value)	0.000	0.000	0.000	0.000
R-squared	0.362	0.337	0.332	0.370

Dependent variable is the year-on-year change in the export share (X/GDP). Model used was an OLS, including a panel-specific Prais-Winsten AR1 term, from 1980 to 2007. N-1 time dummies included but not shown. Panel corrected standard errors are in parenthesis. *, **, and *** indicate significance on a 90%, 95% and 99% confidence level.

[1] Current account deficits in EMU's peripheral economies were significantly lower in the 1990s (with Italy and Ireland, in fact, recording on average a current account surplus between 1990 and 1999), than they were between 2000 and 2008 (Eurostat, 2013). Portugal's average current account deficit (as a percentage of GDP) between 2000 and 2008 was twice that of its 1990s average, while Greece's and Spain's were roughly 3 times that of their 1990s averages.

[2] While northern EMU economies have been more successful at expanding their non-EU export market shares than southern economies, given the specialization of the former in high value-added goods, trade between both groups of countries continues to predominate within the EU.

[3] Trade with EMU's Northern economies was quite substantial for the South, although less so for Ireland, in the 2000s. In 2005, imports from Austria, Belgium, Finland, France, Germany and the Netherlands accounted for 40% of Italy's and Spain's total imports, 30% of Greece's and Portugal's imports, and 20% of Ireland's imports (IMF DOTS, 2008).

[4] Between 2000 and 2008, the average maximum spread in nominal interest rates on long-term government debt was 0.8% for the EMU12, growing to 2% in 2009, 6.3% in 2010 and 13.1% in 2011 (EU AMECO Database, 2013).

[5] We acknowledge that other factors influence divergent spreads in European bond yields, most notably default contagion, which we do not analyze here. However, bivariate analyses can be helpful in indicating whether certain factors are (or not) sufficient determinants of variation within a dependent variable.

[6] Examples of this include governments determining national wages unilaterally (via legislation enforcing a nation-wide wage-freeze) or wage pacts that grant export-sector employers or the state considerable authority in agenda setting.

[7] Our selection of 17 rather than the 23 OECD countries is due to the data limitations of the EU KLEMS sectoral database. This database provides wage, employment and productivity developments by sector for all EU25 countries, but only a limited number of non-EU countries (all of which we include in our sample).

[8] Growth rates are used for the dependent variable as well as most independent variables given the violation of time-stationarity within panels.

[9] We do not present these results here, but they are available on the corresponding author's website.

[10] We do not present results from a random effects estimator below, but they are available on the corresponding author's website.

[11] Given that all countries within the sample are developed and possess limited capital controls, it is fair to assume that this condition would hold.

[12] An online data appendix, available at the corresponding author's website, outlines the sources of all variables, how they were constructed, and provides the data and replication commands.

[13] The LR Chi-squared statistics for the Wooldridge test for panel autocorrelation for the sectoral wage differential and governance dummy baseline models were 29.9 (p-value=0.000) and 13.17 (p-value=0.002), respectively.

[14] Tests for panel heteroskedasticity were run without time dummies given the failure for the generalized least squares iterations to achieve convergence. LR tests for the baseline models (column I in Tables 3 and 5) were highly significant (122.30, p-value=0.000 and 83.13, p-value=0.000, respectively) indicating a high likelihood of panel heteroskedasticity.

[15] Surprisingly, total factor productivity growth was not significantly correlated with the economic controls. It was significantly, negatively correlated with the lagged sheltered sector

wage differential variable (pair-wise correlation of -0.090, p-value=0.049), but not to an extent that would cause serious multicollinearity problems.

[16] Social benefits as a percentage of GDP retains its significantly positive beta coefficient if random effects are use, although its beta magnitude is reduced.