Reply to Referee#2: The referee's report begins with "This paper deals with an interesting and topical subject because national collective ..."

We thank the referee for her/his insightful suggestions, that turned useful in revising and hopefully improving the paper. Since some of the reviewer's comment actually match suggestions shared by the other referees and the editor, we organize this reply in two parts. We first present a list of major changes implemented in response to comments shared by referees and the editor. Replies to detailed reviewer#2's comments follow further below.

Summary of major changes

An overall reading of all comments signaled that the previously submitted version of the article:

- was too much relying on theories originating in economics only, while other frameworks from sociologist and organizational research, could help better positioning the paper;
- suffered from a very underdeveloped theoretical framework, while some more effort to provide at least tentative hypotheses on possible effects of FLB was worth, in order to guide the reader and also usefull to improve the discussion of results we set out in the conclusion;
- did not sufficiently emphasize, in the hypotheses and the interpretation of results, the cross-country and the inter-temporal dimension of the analysis, while these could have been stressed more since particularly interesting for SER;
- was not completely clear concerning data structure and definition of some key variables, in turn creating doubts about interpretation and the possibility to employ different estimation methods.

While the core empirical analysis (strategy, estimates and comments to coefficient patterns) is essentially unchanged in the revised version, we undertook a substantial rewriting of the introduction, of Section 2 and of the conclusion to variously tackle the above points. Summarizing the changes, we have:

- completely rewritten the Introduction. We now better clarify how our study is placed in line with recent trends placing the workplace as the key locus of inequality creation, referring to a wider set of literature and mechanisms that may help explaining within-firm inequality. Also, we are now more precise and explicit about the questions we ask. On the one hand, we are more carefull to clarify that we only look at firms that do apply some form of collective bargaining, whereas previous version was a bit cnfusing, talking about decentralization and perhaps creating the expectation that we were also talking about firms that do not apply any bargaining. On the other hand, previous version was mostly stressing the addition of the occupational wage-gap as the key element of our analysis. We now are more clearly stating that also cross-country comparisons and inter-temporal patterns are part of our research questions, providing an important contribution, especially if we link our analysis to broad tendencies relating to the great depression and the evolution of varieties of capitalism. At the same time, we made an effort to shape some hypotheses concerning what we could expect from the analysis, or at least to clarify which mechanisms may be underlying contrasting results that may emerge from the estimates. Hopefully, all these changes would provide a better

guidance to interpret our results later on in the concluding section, somewhat preparing the reader for the pretty pattern-less findings.

- reorganised and extended Section 2. In the previous version, this section was a bit underdeveloped, just providing basic descriptions of the wage-bargaining models in different countries. We made an effort in a twofold direction. First, we expanded the presentation of each country to also include some predictions about what one could expect in terms of our main research question, starting from the specificities of each country. Second, we recognise that dispite we stress heterogeneities of wage-bargaining models across countries, one could also a priori think that some common patterns may be expected, both over time and across more similar countries, evocking some sort of varieties of capitalim reasoning, or at least referring to some attempts in the literature to create taxonomies of wage bargaining regimes.

- undertake a substantial rewriting of the conclusion, reflecting the changes made to the introduction and Section 2. In the previous version, the concluding remarks were essentially just a summary of the results. We tried to give more structure, in relation to the now more clearly stated research questions, and vis a vis the hopefully richer discussion of underlying mechanisms and hypotheses. The core message remained similar to previous version, since empirical results did not change. However, it should now be easier to understand the implications of our much pattern-less results for theory: (a) heterogeneities across countries prevail over attempts to taxonomize; (b) different types of employees may differently participate/have power in the within-firm structure of inequality, as reflected by different patterns merging across our two measures of within-firm inequality; (c) offering the opportunity to bargain at the firm-level, on top of more centralised levels, although it may reduce bargaining power of workers, do not necessarily create inequalities.

Specific points raised by the referee

Point 1: *"As it is announced in the introduction, the objective of the paper ... Admittedly, the authors mention this nuance on p. 8, but this should be said in the introduction. "*

We try to pay attention to clarify this point in the revised version. We avoid to somewhat loosely refer to decentralization, and stick more precisely to our research question about comparing within-firm inequalities across firms that apply or do not apply firm-level bargaining, in different countries and over time.

Point 2: *"Concerning the data, it would be interesting to give more information ... DOes this bias the results?"*

We surely agree that some more info about shares of firms covered by different bargaining levels may be useful. In the revised version, Tabke 1 shows new figures along these lines. We would however like to clarify that in the SES data, the information on bargaining level is "incremental". As we where already saying in the previous version – perhaps in a rather unclear way generating misunderstanding in the reader – firms are classified as FLB=1 if they also apply firm-level bargaining on top of more centralised levels, while FLB=0 identify firms that only bargaining at this

higher level. We do not distinguish firms that bargain at the firm level but not at the other levels: in this sense we only include firms that apply some form of collective bargaining. In fact, this is in agreement with the research question that we ask: we just compare average within-firm inequality across FLB vs non-FLB firms in the two years available. All we need is that firms in the two groups are representative enough of each country in the years available – which SES data are believed to ensure –, while controls and p-score tackles residual omitted variables and selection biases.

We do have information on firms that do not apply any form of bargaining. We present some figures on this group of firms in revised version of Table 1, as they are nicely informative of country-specific characteritic of the data, and agree with expectations that this group of firms is relatively more frequent in countries like the UK and the CZ. Excluding them does not create any particular bias, as long as we are asking the question "Do firms that *also* apply firm-level bargaining differ from firms that do not?". We do not ~~pretend (and do not need)~~ to have a representative sample of the entire country, but a representative sample of the population of interest, which only involve firms with some form of collective bargaining.

We hope all this is clearer in the revised version.

Point 3: *"Similarly, as it is usual in the literature, it would be useful to provide descriptive statistics on the main explanatory variables..."*

Yes, we agree. We wanted to save space in the submitted version, but it is worth providing some numbers. Following the reviewer's suggestion, the revised version includes a new ad hoc appendix.

Point 4: *"With regard to dependent variables, the authors use two indicators: the inter-decile ratio (D9/D1) and the pay gap between managers and the low-layers employees. Such analysis could be specified by two other indicators that reflect inequalities at the top (D9/D5) and bottom (D5/D1) ..."*

This is an interesting point that we explored. We have re-estimated our main empirical model alternatively taking D1/D5 or D5/D9 as the dependent variable. Results are provided in Tables 1 and 2 in this reply.

In general, they confirm heterogeneities of FLB effects over time and across countries. In 2006 (see coefficients on FLB dummy), three main patterns. First, in Germany and Spain, we find that the insignificant coefficient on FLB in the regression taking the D1/D9 ratio is actually coming from FLB firm showing higher (and statistically significant) D1/D5 inequality coupled with FLB firms ahving lower D5/D9 ratios. Second, we learn that the negative and significant effect of FLB estimated on D1/D9 in the UK is entirely due to FLB firms having lower D1/D5 wage gaps. Third, we confirm that FLB does not impact wage gaps in Belgium, Czech Republic and France: no statistically significant effect on both D1/D5 and D5/D9 emerges, as there was no effect in our main analysis of D1/D9. Two main results are noteworthy in 2010 (cf. FLB×2010 interaction). In Spain and France, where the interaction coefficient was significantly positive in our models with the D1/D9 ratio, we discover that such an "overall" effect comes from a positive (and significant) interaction coefficient only in the regression on the D5/D) wage ratio. For all other countries, we confirm our conclusion from the analysis of the D1/D9 ratio that the FLB effects in 2010 do not significantly differ from the effect in 2006: interactions are never significant, neither on the D5/D9 nor on the D1/D5 wage-gap.

Despite potentially interesting, we thought that the paper is already rich enough, while including such additional exercises deserve perhaps much space if not a separate paper, were we to provide

a satisfactory discussion of rationale for the use of the different ratios, to outline predictions about FLB-effects, and to thouroughly discuss the results (in particualr, bridging with the findings results observed for the D9/D1 ratio). We are open to suggestions about easy ways to include them in a further revision round, of course.

Point 5: *"The authors present only one econometric method: have the results been confirmed by an alternative method? It would be interesting to use a double-difference matching method, which might be appropriate given that the authors work with a panel data."*

Unfortunately, we do not have a panel data. As we already explained in the previously submitted version of the article, we have two cross sections, since SES data do not allow to identify firms across the two subsequent survey wave. So, there is nothing like a standard diff-in-diff or GMM-like analysis that we can do here. What we do is something very close to that, however, and quite robust and trustworthy. In fact, just by placing appropriate dummies for FLB interacted with time, our regressions exactly compare averages of dependent variables across FLB and non-FLB firms, and over time. Plus, by controlling for a bunch of firm-level and employee-level characteristics, and by introducing a p-score for FLB propensity, we really clean a lot of sources of bias. It is difficult for us to imagine an alternative methodology that may be feasible to apply to our data.

Point 6: *"p.8, the presentation of the French system should be rewriitten. Indeed, ..."*

We have incorporated these considerations about the French case.

Table 1: Analysis of D1-D5 wage gap

	(1) BE	(2) DE	(3) ES	(4) CZ	(5) UK	(6) FR
FLB	0.00286	0.0156**	0.00970***	-0.00361	-0.0121**	-0.00144
	(0.00281)	(0.00479)	(0.00285)	(0.00580)	(0.00385)	(0.00760)
Year 2010	-0.00980***	-0.0149***	-0.0340***	-0.00798	-0.0383***	-0.00800***
	(0.00166)	(0.00342)	(0.00320)	(0.00870)	(0.00562)	(0.00206)
FLB×2010	-0.00353	-0.00742	0.00000836	0.00283	0.00507	0.0121
	(0.00365)	(0.00583)	(0.00388)	(0.00885)	(0.00540)	(0.00806)
Prob. FLB	0.0290	-0.00446	-0.0539***	0.0423	0.0157	0.0246
	(0.0204)	(0.0389)	(0.0157)	(0.0276)	(0.0745)	(0.0210)
Modal age workers:						
20-29	-0.0116	0.0565*	0.00241		-0.0155	-0.0478**
	(0.0148)	(0.0282)	(0.0121)		(0.00904)	(0.0172)
30-39	-0.00362	0.0493	0.00850	0.0178**	-0.00912	-0.0456**
	(0.0148)	(0.0283)	(0.0121)	(0.00648)	(0.00913)	(0.0172)
40-49	-0.000362	0.0523	0.00494	0.00937	-0.00480	-0.0486**
	(0.0148)	(0.0282)	(0.0121)	(0.00686)	(0.00911)	(0.0172)
50-59	0.0109	0.0451	0.00189	0.00821	-0.0107	-0.0414*
	(0.0150)	(0.0283)	(0.0122)	(0.00610)	(0.00932)	(0.0172)
60+	0.00894	0.0980*	0.0266	0.0303	-0.0135	-0.0396*
	(0.0198)	(0.0395)	(0.0141)	(0.0177)	(0.0109)	(0.0193)
% of women empl.	-0.0350***	-0.0393***	-0.0270***	-0.0215*	-0.0119*	-0.0142***
	(0.00394)	(0.00812)	(0.00299)	(0.00870)	(0.00542)	(0.00390)
Mean experience empl.	-0.000795***	-0.00202***	0.00109***	-0.00140*	0.000120	-0.0000907
	(0.000218)	(0.000394)	(0.000209)	(0.000606)	(0.000347)	(0.000185)
% empl. with tert. educ.	0.0538***	0.00904	0.0694***	0.0931***	0.0520***	0.0484***
	(0.00466)	(0.0195)	(0.00345)	(0.0227)	(0.00964)	(0.00473)
% empl. with sec. educ.	0.00936***	0.0177	0.0295***	0.0348*	0.0344***	0.0122**
	(0.00282)	(0.0132)	(0.00296)	(0.0174)	(0.00894)	(0.00439)
% managers and profess.	0.0516***	0.0388**	0.0391***	0.0712***	0.129***	0.0535***
	(0.00574)	(0.0135)	(0.00527)	(0.0167)	(0.00659)	(0.00480)
% part-time empl.	-0.00837	0.112***	0.0507***	0.114***	0.00498	0.00128
	(0.00454)	(0.00909)	(0.00367)	(0.0291)	(0.00621)	(0.00464)
% permanent contracts	-0.0448***	-0.0821***	-0.00635*	-0.00988	-0.00612	-0.0901***
	(0.00674)	(0.0133)	(0.00289)	(0.0101)	(0.0121)	(0.00753)
Firm size: 50-249	0.00114	0.0106**	0.0457***	-0.000192	-0.0253**	0.0175***
	(0.00326)	(0.00374)	(0.00223)	(0.00754)	(0.00841)	(0.00263)
¿=250	0.00289	0.00355	0.0703***	-0.00162	-0.0291***	0.0331***
	(0.00562)	(0.00386)	(0.00412)	(0.0104)	(0.00718)	(0.00273)
Public	-0.0305***	0.0126	0.00957*	-0.0231***	0.0164	-0.0201***
	(0.00708)	(0.0108)	(0.00473)	(0.00640)	(0.0354)	(0.00542)
Regional GDP pps	0.000268**	0.00100**	0.00345***	0	0.000366	0.00210***
	(0.0000892)	(0.000377)	(0.000224)	(.)	(0.000239)	(0.000113)
Regional unemp. rate	-0.000239	-0.000626	0.00217***	0	-0.00176	0.00104
	(0.000201)	(0.000727)	(0.000279)	(.)	(0.00182)	(0.000609)
Constant	0.210***	0.229***	0.0603***	0.207***	0.267***	0.211***
	(0.0233)	(0.0337)	(0.0149)	(0.0245)	(0.0654)	(0.0217)
Observations	13765	12312	37887	3498	14502	30009
Region FE	YES	YES	YES	YES	YES	YES
Sector FE	YES	YES	YES	YES	YES	YES

Notes: Bootstrap standard errors in parenthesis (200 replications). Significance levels:* 5%, ** 1%, ***0.1%.

Table 2: Analysis of D5-D9 wage gap

	(1) BE	(2) DE	(3) ES	(4) CZ	(5) UK	(6) FR
FLB	-0.00427	-0.0194***	-0.0101**	-0.00527	-0.000320	-0.00203
	(0.00340)	(0.00377)	(0.00338)	(0.00624)	(0.00485)	(0.00587)
Year 2010	-0.0253***	0.00712*	-0.0484***	-0.00479	-0.0366***	-0.0133***
	(0.00194)	(0.00295)	(0.00420)	(0.00753)	(0.00697)	(0.00266)
FLB×2010	0.00518	0.0114*	0.0240***	0.00143	-0.00850	0.0233**
	(0.00424)	(0.00500)	(0.00483)	(0.00802)	(0.00674)	(0.00725)
Prob. FLB	0.0413*	-0.0287	-0.169***	0.0769*	-0.0592	0.0814***
	(0.0205)	(0.0304)	(0.0186)	(0.0322)	(0.0933)	(0.0245)
Modal age workers:						
20-29	-0.0235	-0.0192	0.00782		0.0190*	-0.0157
	(0.0153)	(0.0260)	(0.0167)		(0.00860)	(0.0276)
30-39	-0.0112	-0.0236	0.0159	0.0200**	0.0455***	-0.00688
	(0.0153)	(0.0261)	(0.0167)	(0.00718)	(0.00884)	(0.0275)
40-49	-0.00413	-0.0301	0.0132	0.00899	0.0504***	-0.00400
	(0.0154)	(0.0259)	(0.0167)	(0.00794)	(0.00872)	(0.0275)
50-59	0.00461	-0.0277	0.0127	0.0125	0.0579***	0.00826
	(0.0155)	(0.0260)	(0.0168)	(0.00727)	(0.00923)	(0.0275)
60+	0.0193	0.0189	0.0535**	0.0603**	0.0414***	0.00944
	(0.0218)	(0.0331)	(0.0196)	(0.0219)	(0.0115)	(0.0293)
% of women empl.	-0.0243***	-0.0108	-0.0202***	0.00887	-0.0238***	-0.0340***
	(0.00462)	(0.00634)	(0.00383)	(0.0100)	(0.00680)	(0.00493)
Mean experience empl.	-0.00122***	-0.000232	0.00213***	-0.00341***	-0.000178	-0.000796***
	(0.000244)	(0.000323)	(0.000258)	(0.000651)	(0.000460)	(0.000225)
% empl. with tert. educ.	0.0607***	0.0708***	0.0844***	0.161***	0.0450***	0.0265***
	(0.00564)	(0.0133)	(0.00442)	(0.0252)	(0.0125)	(0.00616)
% empl. with sec. educ.	0.00927**	0.0341***	0.0418***	-0.0120	0.0216	-0.00931
	(0.00333)	(0.00933)	(0.00376)	(0.0178)	(0.0113)	(0.00555)
% managers and profess.	0.0404***	0.0288**	0.0458***	0.0447*	0.125***	0.103***
	(0.00719)	(0.0103)	(0.00652)	(0.0181)	(0.00816)	(0.00634)
% part-time empl.	-0.00395	0.0319***	0.0592***	0.0634	0.0378***	0.00556
	(0.00511)	(0.00727)	(0.00465)	(0.0334)	(0.00843)	(0.00564)
% permanent contracts	-0.0311***	-0.000878	0.00805*	0.00198	-0.0370*	-0.0707***
	(0.00656)	(0.00974)	(0.00345)	(0.00995)	(0.0146)	(0.00902)
Firm size:						
50-249	0.00274	0.0268***	0.0764***	0.0156*	-0.0386***	0.0203***
	(0.00346)	(0.00311)	(0.00277)	(0.00668)	(0.0106)	(0.00344)
≥250	-0.000733	0.0333***	0.125***	0.0119	-0.0383***	0.0161***
	(0.00564)	(0.00330)	(0.00500)	(0.0100)	(0.00912)	(0.00339)
Public	-0.0254***	-0.0259**	0.0200***	-0.0563***	-0.0148	-0.0483***
	(0.00677)	(0.00822)	(0.00553)	(0.00802)	(0.0443)	(0.00611)
Regional GDP pps	0.000715***	0.00233***	0.00437***	0	0.000354	0.00242***
	(0.000104)	(0.000329)	(0.000292)	(.)	(0.000303)	(0.000139)
Regional unemp. rate	-0.00104***	0.000339	0.00312***	0	0.00125	0.00281***
	(0.000229)	(0.000622)	(0.000364)	(.)	(0.00229)	(0.000817)
Constant	0.221***	0.175***	0.0254	0.246***	0.331***	0.187***
	(0.0245)	(0.0332)	(0.0197)	(0.0290)	(0.0797)	(0.0309)
Observations	13765	12312	37887	3498	14502	30009
Region FE	YES	YES	YES	YES	YES	YES
Sector FE	YES	YES	YES	YES	YES	YES

Notes: Bootstrap standard errors in parenthesis (200 replications). Significance levels:* 5%, ** 1%, ***0.1%.