

Firm Wage Setting and Flexibility Under Sectoral Bargaining

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Introduction

- huge literature on impacts of collective bargaining in US
- union contract *sets wage for each job* at covered estab.
- Q: how does that affect *wages for workers*?
- European setting fundamentally different:
 - sectoral bargains, typically extended to most firms
 - contract sets a grid of minimum wages (“wage floors”)
 - most workers get paid $>$ floor (“wage cushion”)
 - (some places) firm can have agreement on top of sectoral CBA

Sectoral bargaining (SB) is widely seen as pushing up (or impeding reductions in) real wages:

- Calmfors and Driffell: SB is “worse” than national or firm-level bargaining
- Layard and Nickell (1999), Boeri et al (2020)
- during the Troika rescue, IMF backed a dismantling of long-standing SB arrangements in Portugal

“...the IMF’s advice was to facilitate opt-out clauses from collective agreements and move toward decentralization of collective bargaining”

This paper: an analysis of collective bargaining in Portugal (very high coverage of sectoral bargains)

- annual census of workers/firms (QP) linked to contract floors. Wages, worker characteristics, firm value added

Q1: “proximate analysis”: how do floors+cushions vary across workers

Q2: contract-level analysis: how do floors move within a CBA? How are floors affected by productivity at covered firms?

Q3: how do cushions adjust to changes in floors (incidence analysis) – also look at employment

Q4: sources of wage flexibility under SB? Δ floors, Δ cushions, reallocation of workers to floors (DFL+)

Institutional setting

- many firms belong to employer associations; firms can also voluntarily join an agreement, or be covered by extension
- ~10% of workers not covered (all at noncovered firms), higher wage
- most firms are small; almost no 'works councils', inefficient to bargain individually
- CB's remain in force until renegotiated
- nearly all agreements for 1 year; but often long delay in renegotiating (so old terms prevail)

Quadros de Pessoal (QP)

- annual census of employees
- collects demo. info, some data on firm (sales)
- monthly “base wage” and hours, regular monthly supplements (meal allowances, shift premiums)
- CBA# and “detailed job title” → maps to floor group
- recently: matched QP/financial data available
- we keep ***FT workers age 18-64***, drop apprentices, Islands...

Contract data (BTE)

- contracts published in BTE (Boletim do Trabalho e Emprego)
- type of contract (sectoral, multi-firm, single-firm, directive)
- name of emp. assoc/union (often parallel agreements for 2 main unions)
- we gather all contracts 2008-16 and merge parallel agreements
- **wage table**: list of job groups and floors
- we collect wage table and attempt to match to job titles in QP

Figure 1: Example of Wage Table from BTE

Contrato coletivo entre a Associação da Hotelaria, Restauração e Similares de Portugal (AHRESP) e o Sindicato dos Trabalhadores e Técnicos de Serviços - SITESE - Alteração salarial e outras

Níveis	Grupo A	Grupo B
XII	960,0 €	930,0 €
XI	895,0 €	887,0 €
X	770,0 €	735,0 €
IX	700,0 €	670,0 €
VIII	630,0 €	610,0 €
VII	585,0 €	575,0 €
VI	540,0 €	540,0 €
V	532,0 €	532,0 €
IV	531,0 €	531,0 €
III	530,0 €	530,0 €
II	450,0 €	450,0 €
I	440,0 €	440,0 €

Matching BTE and QP

- manual match of floor categories in BTE to job titles in QP

failures:

- contract never updated 2008-16 (-10%)
- wage table depends on stuff we can't see (-23%)
- not covered or floor info missing in QP (-18%)

Overall match rate: 44% of workers (~50% of covered)

Table 1: Characteristics of New Contracts in BTE, Workers in QP, and Merged BTE-QP Sample

Year	Renegotiated Contracts in BTE (non-duplicates, in scope)		Full Time Workers in QP (Private Sector Age 18-64)		Matched BTE-QP Sample		
	Number Contracts in BTE (1)	Mean # Months Since Last Contract (3)	Number of Workers in QP (4)	Percent Covered by CBA (5)	Number of Workers with Assigned Floors in QP (7)	Percent of All Workers with Floor (8)	Number of Floors (9)
2008	192	20	1,966,522	90.0	634,300	32.3	1,935
2009	165	18	1,893,484	89.9	804,653	42.5	2,211
2010	140	20	1,897,345	91.4	835,011	44.0	2,357
2011	111	20	1,868,715	90.9	817,703	43.8	2,461
2012	50	25	1,768,599	89.1	832,861	47.1	2,566
2013	54	22	1,748,831	88.6	815,606	46.6	2,585
2014	83	26	1,778,271	88.4	825,698	46.4	2,619
2015	90	37	1,831,708	88.0	844,830	46.1	2,603
2016	103	29	1,884,758	87.0	855,602	45.4	2,641
All	988	23	16,638,233	89.3	7,266,264	43.7	21,978

3 groups of workers in QP

- uncovered by CBA

about 10%, with higher education and wages

- covered, not matched to a floor

- covered and matched to a floor

Table 2: Comparisons of Workers by CBA Coverage, and Assigned Floor Status

	All (1)	By CBA Coverage		Floor Assignment	
		Covered (2)	Not Covered (3)	Floor (4)	No Floor (5)
Fraction female	0.452	0.448	0.476	0.420	0.476
Fraction with high school	0.242	0.240	0.256	0.233	0.248
Fraction with university	0.191	0.169	0.376	0.156	0.181
Mean years experience	23.85	24.32	19.98	24.50	24.14
Mean tenure current job	8.34	8.59	6.31	8.69	8.48
Mean log mthly base wage (standard deviation)	6.696 (0.509)	6.675 (0.495)	6.858 (0.590)	6.664 (0.491)	6.686 (0.499)
Mean log mthly total wage (standard deviation)	6.856 (0.532)	6.837 (0.522)	7.014 (0.586)	6.837 (0.517)	6.838 (0.528)
Number person-years	16,638,233	14,852,805	1,785,428	7,266,264	7,586,541

Addendum: log wage = controls + 0.10*noncovered

Capital letters = levels; small letters = logs

Base wage of worker i in year t : floor (F) plus cushion (H).

Total wage = base wage + supplements (S)

$$W_{it} = F_{it} + H_{it}$$

$$W_{it}^T = F_{it} + H_{it} + S_{it}$$

In logs:

$$w_{it} = f_{it} + h_{it} \quad (1)$$

$$w_{it}^T = f_{it} + h_{it} + s_{it} \quad (2)$$

where $f_{it} \equiv \ln F_{it}$,

$$h_{it} \equiv \ln \frac{W_{it}}{F_{it}} \approx \frac{H_{it}}{F_{it}}$$

$$s_{it} \equiv \ln \frac{W_{it} + S_{it}}{W_{it}} \approx \frac{S_{it}}{W_{it}}$$

Min wage M_t in year t . $m_t \equiv \ln M_t$:

$$f_{it} = m_t + r f_{it}$$

where

$$r f_{it} = \ln \frac{F_{it}}{M_t}.$$

Thus:

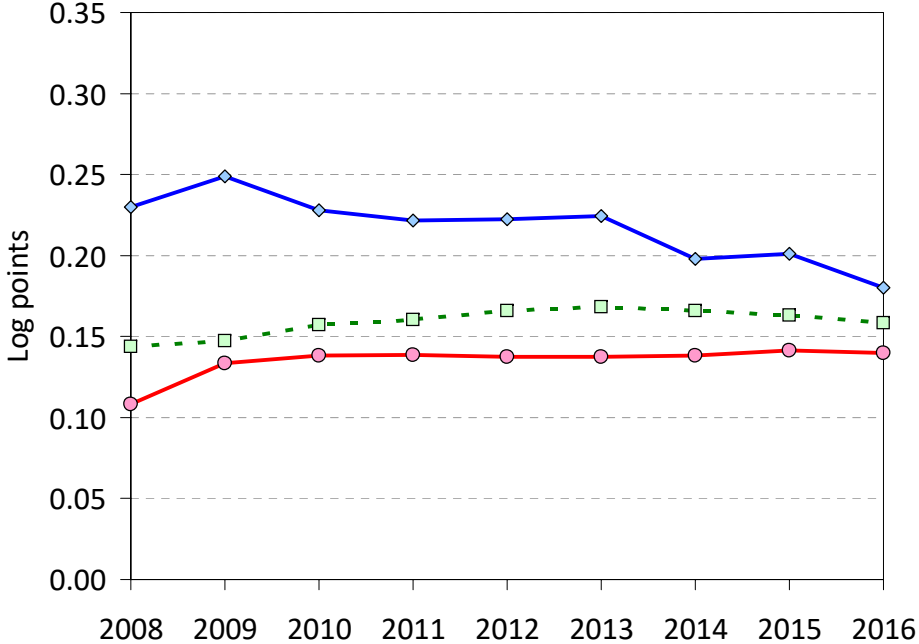
$$w_{it}^T = m_t + r f_{it} + h_{it} + s_{it} \quad (3)$$

Q1: Proximate analysis

- let's look at how 3 components of $w_{it}^T - m_t$ vary over time, across groups, and within groups
- extend Cardoso and Portugal (2005)

Figure 3a: Components of Mean Wages (relative to minimum wage) for Females and Males

a. Females



b. Males

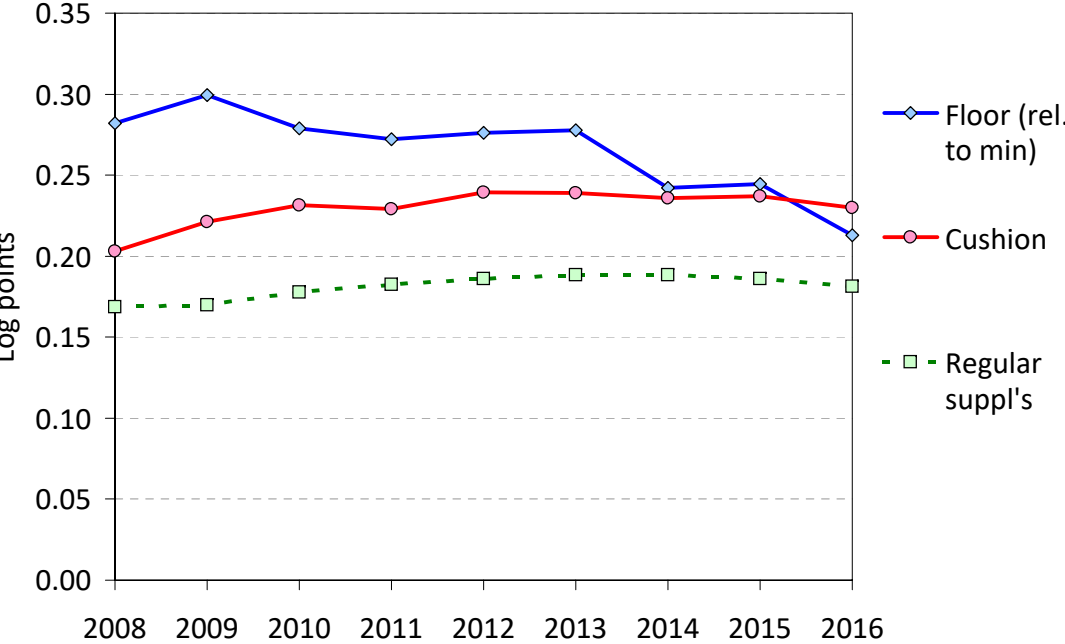
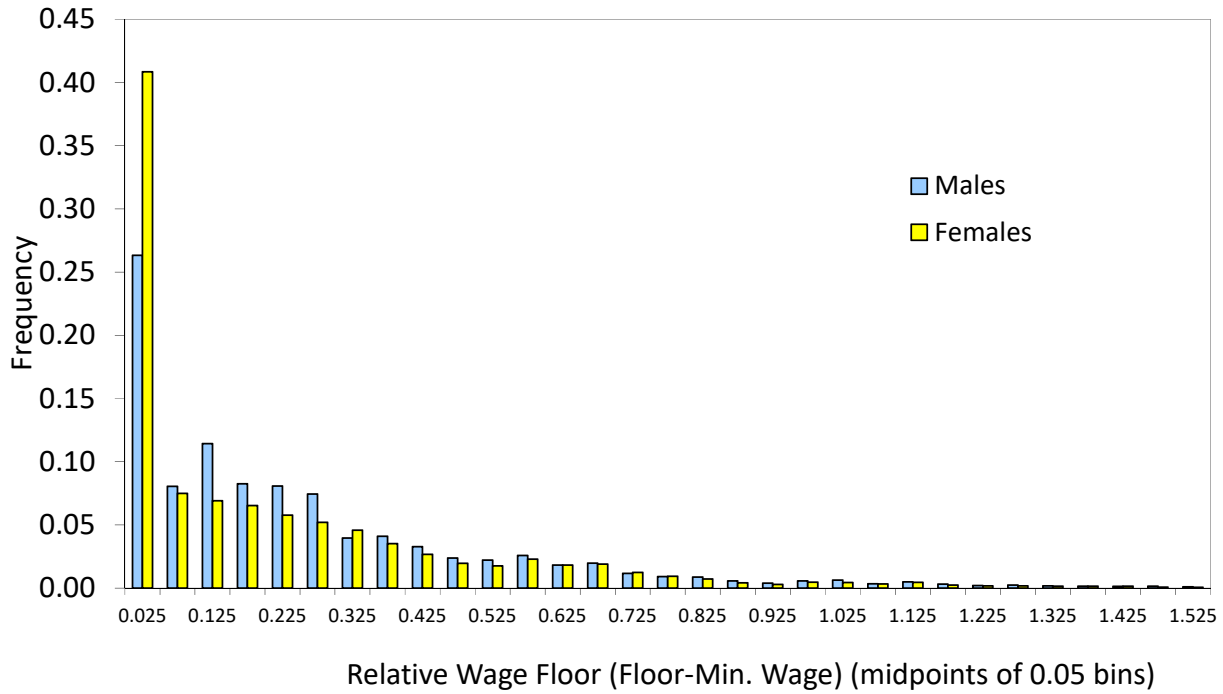


Figure 2: Distributions of Relative Wage Floors and Wage Cushions by Gender

a. Relative Wage Floors



b. Wage Cushions

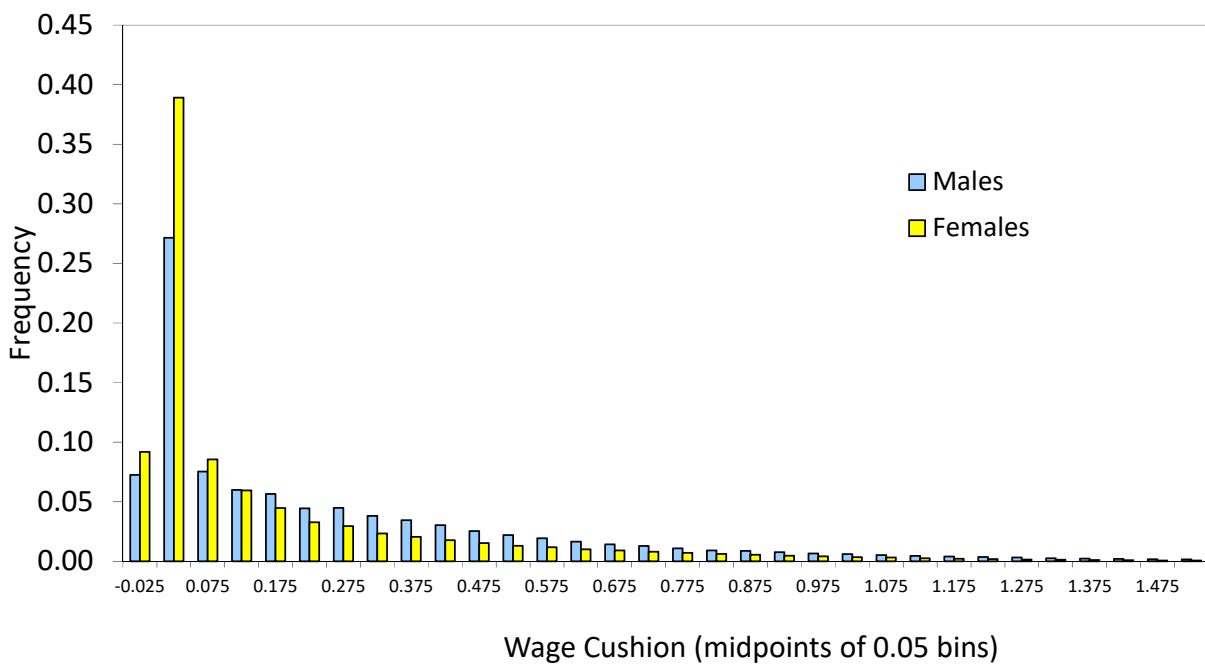
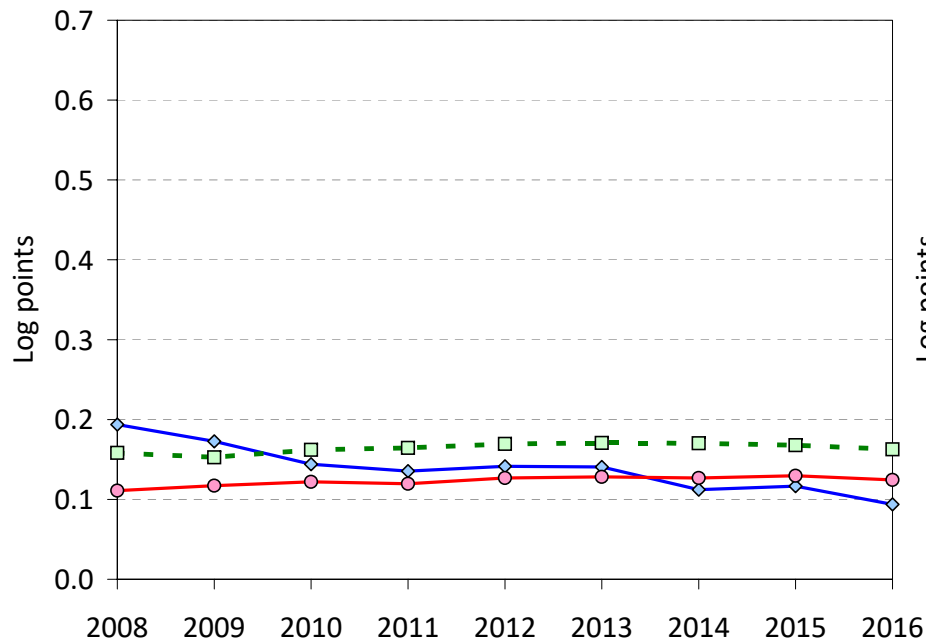
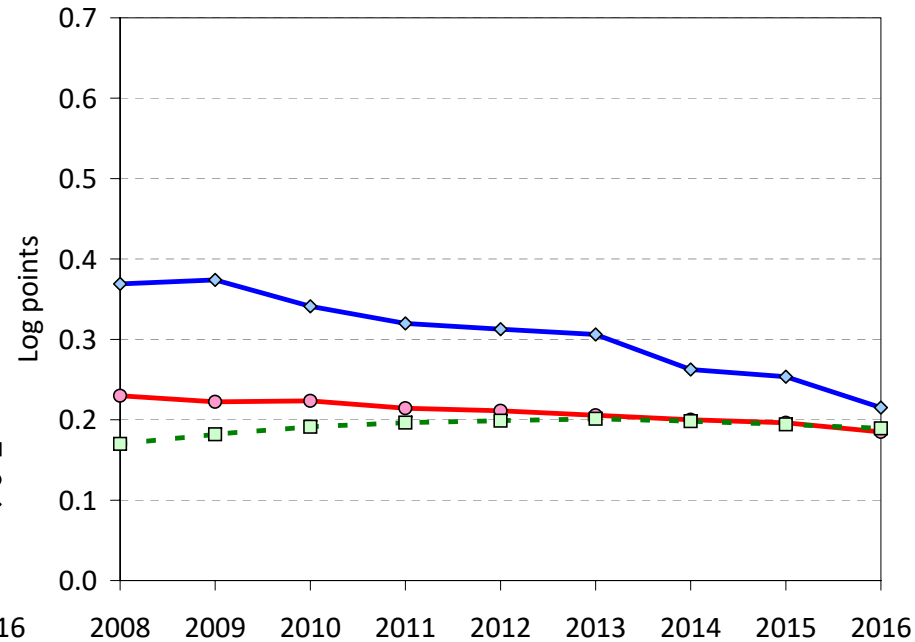


Figure 3b: Components of Mean Wages (relative to minimum wage) by Education Group

a. Less than High School Education



b. High School Education



c. University Education

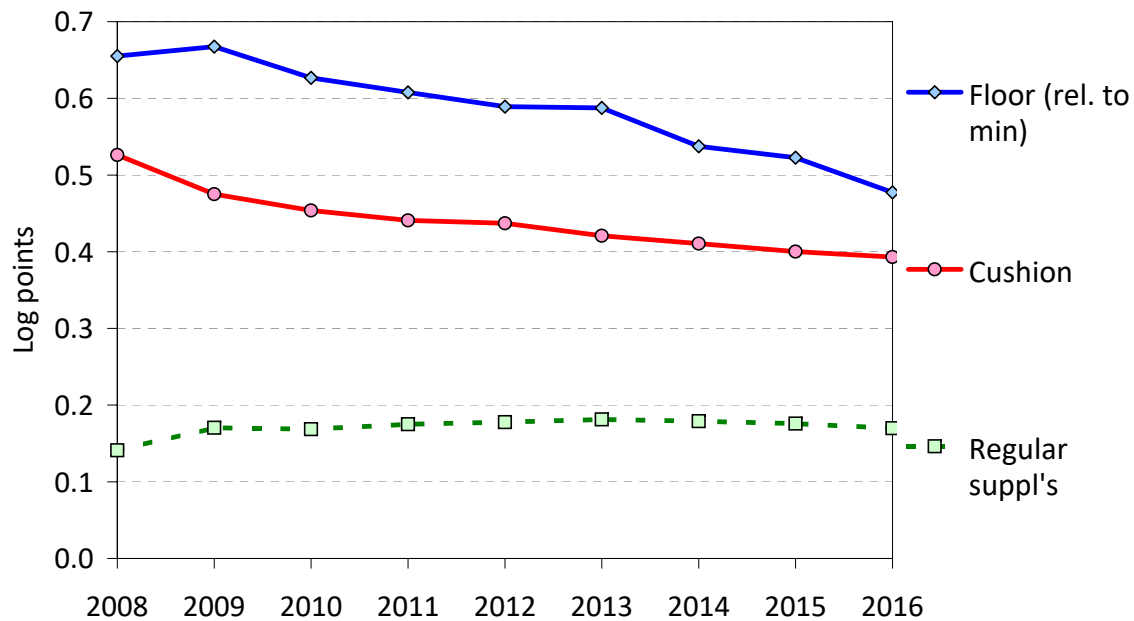


Figure 3c: Mean Floor (relative to minimum wage) and Mean Cushion by Quartile of Firm Value Added/Worker

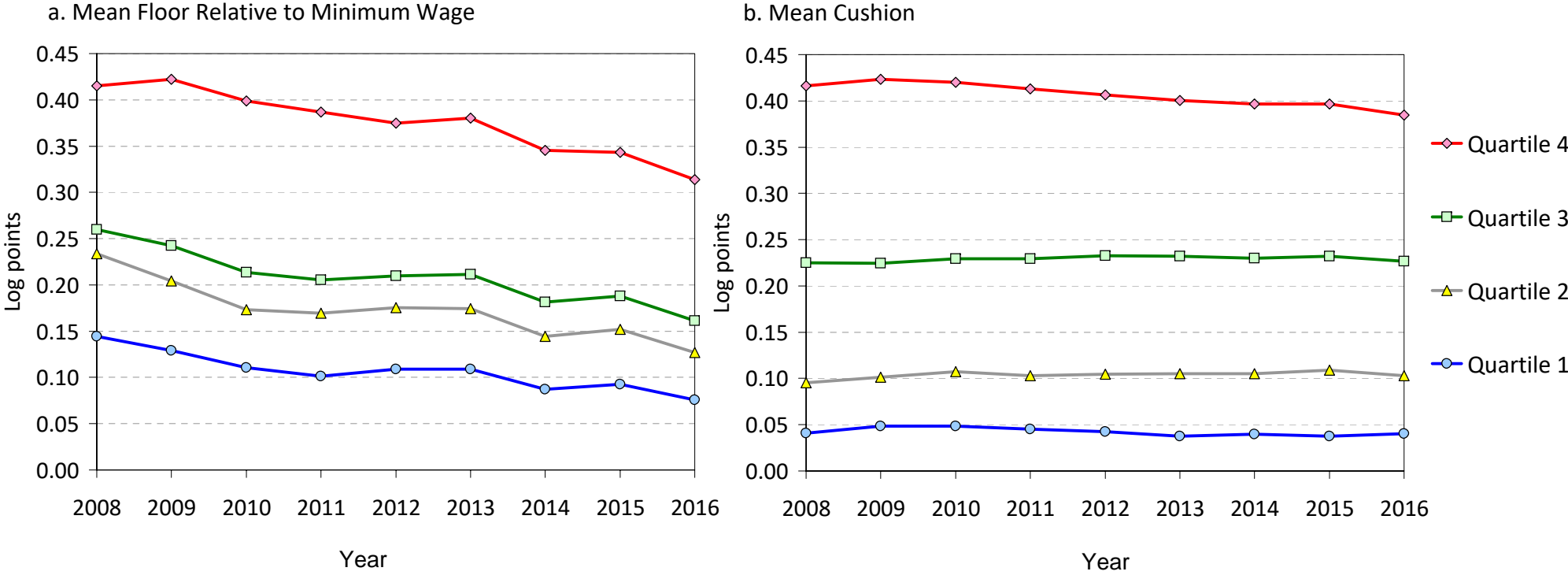


Figure 3d: Components of Age Profile of Mean Wages (relative to minimum wage) for Females and Males

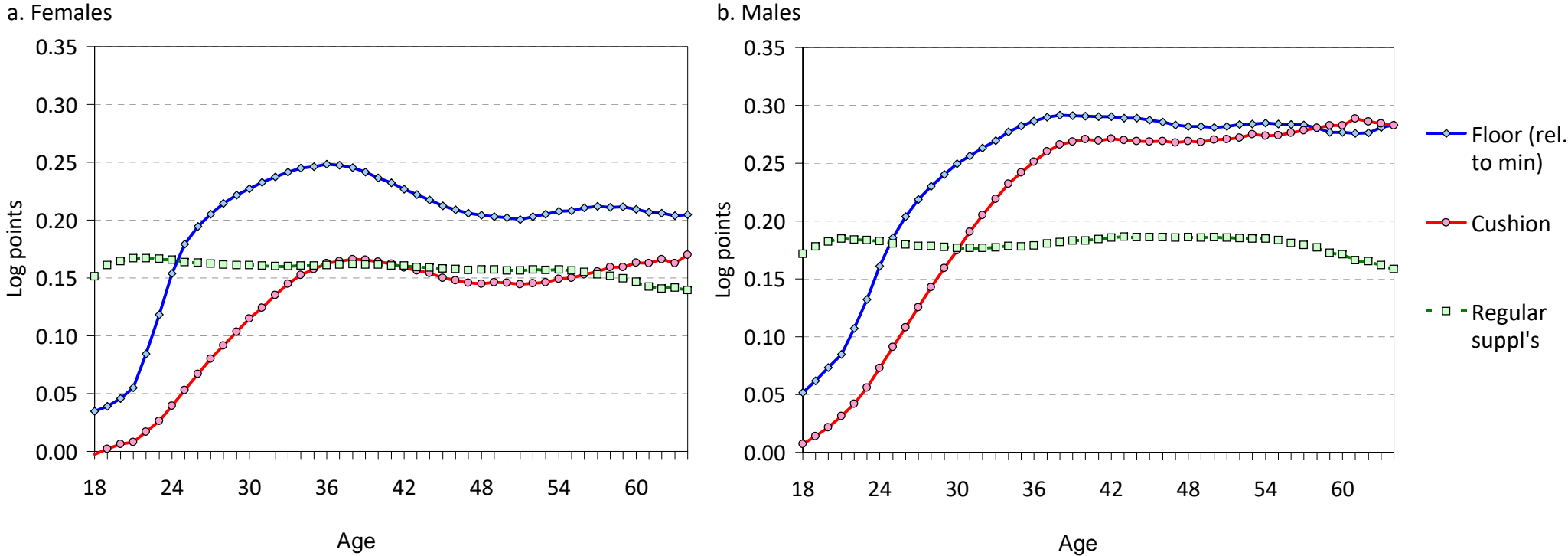


Table 3: Proximate Contributions of Wage Floors, Cushions, and Supplements to Level and Variance of Wages

	Decomposition of Means:				Decomposition of Variances:				
	Mean Log Total Wage (1)	Relative Wage Floor (3)	Mean Wage Cushion (4)	Mean Supplements (5)	Var. Log Total Wage (6)	Var. Rel. Wage Flr. (7)	Var. Cushion (8)	Var. Suppl. (9)	2 × Cov [Rel. Flr. & Cush.] (10)
All Workers (Percent of Total)	6.84	0.24 (40.2)	0.19 (31.4)	0.17 (28.4)	0.267	0.086 (32.3)	0.112 (42.1)	0.024 (9.1)	0.042 (15.6)
<i>By Gender:</i>									
Males (58.0% of obs.)	6.91	0.26 (39.1)	0.23 (34.0)	0.18 (26.8)	0.286	0.091 (31.9)	0.129 (45.2)	0.030 (10.3)	0.039 (13.5)
Females (42.0% of obs.)	6.74	0.22 (42.3)	0.14 (26.5)	0.16 (31.2)	0.226	0.078 (34.7)	0.084 (37.3)	0.017 (7.6)	0.040 (17.8)
Gender Gap (Percent of Gap)	0.16	0.05 (29.7)	0.09 (57.9)	0.02 (13.3)	0.060	0.013 (21.8)	0.045 (74.7)	0.012 (20.6)	-0.010 (-16.6)
<i>By Education:</i>									
<High School (61.1% of obs.)	6.65	0.14 (32.7)	0.12 (28.8)	0.16 (38.5)	0.123	0.031 (25.2)	0.061 (49.4)	0.021 (16.7)	0.010 (8.2)
High School (23.3% of obs.)	6.93	0.30 (42.7)	0.21 (29.7)	0.19 (27.6)	0.256	0.091 (35.4)	0.113 (43.9)	0.027 (10.5)	0.023 (8.8)
University (15.6% of obs.)	7.41	0.57 (48.7)	0.43 (36.6)	0.17 (14.7)	0.372	0.141 (37.8)	0.239 (64.3)	0.035 (9.4)	-0.023 (-6.3)

Table 3: Proximate Contributions of Wage Floors, Cushions, and Supplements to Level and Variance of Wages

	Decomposition of Means:				Decomposition of Variances:				
	Mean Log Total Wage (1)	Relative Wage Floor (3)	Mean Wage Cushion (4)	Mean Supplements (5)	Var. Log Total Wage (6)	Var. Rel. Wage Flr. (7)	Var. Cushion (8)	Var. Suppl. (9)	2 × Cov [Rel. Flr. & Cush.] (10)
HS/<HS Gap (Percent of Gap)	0.28	0.16 (58.3)	0.08 (31.2)	0.03 (10.5)	0.134	0.060 (44.8)	0.052 (38.9)	0.006 (4.8)	0.012 (9.3)
Univ/HS Gap (Percent of Gap)	0.48	0.28 (57.4)	0.22 (46.3)	-0.02 (-4.0)	0.115	0.050 (43.1)	0.126 (109.6)	0.008 (7.1)	-0.046 (-39.7)
<i>By Quartile of Firm VA/Worker:</i>									
1st Quartile (25.0% of obs.)	6.51	0.11 (38.4)	0.04 (15.3)	0.13 (46.3)	0.076	0.027 (35.1)	0.044 (57.5)	0.011 (13.9)	-0.002 (-2.3)
4th Quartile (25.0% of obs.)	7.19	0.37 (38.7)	0.41 (42.2)	0.18 (19.1)	0.321	0.114 (35.6)	0.183 (57.2)	0.034 (10.5)	0.043 (13.4)
4th-1st Quartile (Percent of Gap)	0.69	0.27 (38.9)	0.36 (53.1)	0.05 (8.0)	0.245	0.088 (35.7)	0.140 (57.1)	0.023 (9.4)	0.045 (18.3)

Proximate analysis - conclusions

- floor and cushion components both contribute to variation
- across broad groups: higher floor \iff higher cushion
- within groups: some negative correlations (U-grads)
- supplements more stable (0.10 – 0.15 log points)

Q2a: How do floors change relative to each other?

Δf_{cgt} = change in real floor, contract c floor group g

Some models:

$$\Delta f_{cgt} = \delta_t + \epsilon_{cgt} \quad (4a)$$

$$= \delta_t + Z_{ct}\gamma + \epsilon_{cgt} \quad (4b)$$

$$= \delta_{ct} + \epsilon_{cgt} \quad (4c)$$

$$= \delta_{ct} + R_{cgt}\theta + \epsilon_{cgt} \quad (4d)$$

(4a) = Swedish model; (4b)=extended Swedish model

(4c) = all floors within a given contract move together (AKM?)

(4d) = floor-group specific determinants matter

Table 4: Alternative Models for Renegotiated Wage Floors

	Adjusted R-squared
<i><u>Explanatory variables (degrees of freedom)</u></i>	
1. Year effects (7)	0.787
2. Year effects (7) and modal industry effects (15)	0.834
3. Year effects (7), modal industry effects (15), and worker characteristics (3)	0.838
4. Year effects (7), modal industry effects (15), worker characteristics (3), and dummies for elapsed time since last renegotiation (6)	0.853
5. Year × modal industry effects (71), worker characteristics (3), and dummies for elapsed time since last renegotiation (6)	0.898
6. CBA effects (454)	0.981
7. Contract effects (454) and worker characteristics (3)	0.982

Q2b: Negotiations over average floor increases

Δf_{ct} = average change in wage floors for contract c

How does Δf_{ct} vary with productivity of covered firms?

$$DmVA_{ct} \equiv m(VA_{jct-1}) - m(VA_{jct-\ell-1})$$

$$DqVA_{ct} \equiv q(VA_{jct-1}) - q(VA_{jct-\ell-1})$$

$$\delta_{ct} = \beta_0 + \beta_1 DxVA_{ct} + \beta_2 Z_{ct} + e_{ct}$$

Table 5: Models for Change in Average Wage Floor in Renegotiated Collective Bargaining Agreements

	Measure of Distribution of Real Value Added per Worker Used:					
	Mean (1)	10th Pctile (2)	25th Pctile (3)	50th Pctile (4)	75th Pctile (5)	90th Pctile (6)
Change in Real VA/Worker	0.068 (0.014)	0.007 (0.005)	0.037 (0.011)	0.067 (0.015)	0.034 (0.011)	0.032 (0.007)
<i><u>Other Controls:</u></i>						
Cumulative Inflation since last renegotiation	0.202 (0.086)	0.032 (0.089)	0.034 (0.074)	0.142 (0.068)	0.115 (0.071)	0.040 (0.071)
Share of Females	0.015 (0.003)	0.017 (0.004)	0.015 (0.004)	0.014 (0.003)	0.016 (0.003)	0.015 (0.003)
Share of Univ. Grads	-0.002 (0.006)	-0.008 (0.006)	-0.008 (0.006)	-0.007 (0.005)	-0.006 (0.006)	-0.005 (0.006)
Mean Age of Workers	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)
Year effects/dummies for time since last renegotiation	yes	yes	yes	yes	yes	yes
R-squared	0.946	0.931	0.933	0.943	0.934	0.934

Table 6: Models for 2010-16 Change in Real Wage Floors -- Renegotiated CBA's

	Measure of Distribution of Real Value Added per Worker Used:					
	Mean (1)	10th Pctile (2)	25th Pctile (3)	50th Pctile (4)	75th Pctile (5)	90th Pctile (6)
<i><u>No other control variables:</u></i>						
Change in Real Value Added/Wor (2009-2015)	0.134 (0.025)	0.105 (0.027)	0.115 (0.037)	0.131 (0.025)	0.078 (0.023)	0.055 (0.026)
R-squared	0.475	0.383	0.421	0.510	0.284	0.178
<i><u>With Controls for Industry:</u></i>						
Change in Real Value Added/Wor (2009-2015)	0.093 (0.040)	0.068 (0.029)	0.074 (0.042)	0.094 (0.036)	0.040 (0.027)	0.033 (0.025)
R-squared	0.570	0.551	0.557	0.574	0.472	0.475

Notes: dependent variable is change in real average wage floor from 2010 to 2016 in collective bargaining agreements (CBA's) that were renegotiated at least once. Estimates are weighted by the number of workers in the agreement. Robust standard errors in parentheses. Models in different columns use different summary statistics -- as indicated in the column heading -- for the distribution of changes in real value added per worker among firms covered by the CBA over the 2009-2015 interval.

Q3: how do cushions adjust to changes in floors?

$$\begin{aligned}\Delta w_{it}^* &= \ln(W_{it-1} + F_{it-1}\Delta f_{it}) - \ln(W_{it-1}) \\ &\approx (F_{it-1}/W_{it-1})\Delta f_{it}\end{aligned}$$

Actual change in base wages:

$$\begin{aligned}\Delta w_{it} &= \ln(W_{it-1} + F_{it-1}\Delta f_{it} + \Delta H_{it}) - \ln(W_{it-1}) \\ &\approx (F_{it-1}/W_{it-1})(\Delta f_{it} + \Delta H_{it}/F_{it-1}) \\ &= \Delta w_{it}^*(1 + \gamma_{it})\end{aligned}$$

where $\gamma_{it} = \Delta H_{it}/\Delta F_{it} \in [-1, 0]$ is offset.

Consider

$$\Delta w_{it} = \theta_0 + \theta_1 \Delta w_{it}^* + \theta_x X_{it} + \xi_{it} \quad (8)$$

- $\theta_1 = 1 + \Delta H_{it} / \Delta F_{it} =$ “passthrough” rate
- OLS
- IV using $\Delta \bar{w}_{jt}^*$ (mean of Δw_{it}^* at firm j) as instrument

Can also look at “grouped reduced form”:

$$\Delta \bar{w}_{jt} = \rho_0 + \rho_1 \Delta \bar{w}_{jt}^* + \rho_x X_{jt} + \bar{\xi}_{jt} \quad (9)$$

Table 7: Models for Effect of Changes in Wage Floors on Changes in Real Wages of Stayers

	Models for Change in Log Base Wage of Stayers				Models for Change in Log Total Wage of Stayers			
	Individual-level wages		Firm-wide average wages		Individual-level wages		Firm-wide average wages	
	OLS	IV**	OLS	OLS	OLS	IV**	OLS	OLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Simulated Change in Base or Total Wage*	0.458 (0.016)	0.530 (0.020)	0.550 (0.021)	0.546 (0.031)	0.446 (0.034)	0.536 (0.044)	0.555 (0.045)	0.521 (0.049)
Change in Real Value-added per Worker at Firm (Coeff×10)	0.021 (0.005)	0.021 (0.005)	0.021 (0.005)	0.021 (0.005)	0.017 (0.008)	0.017 (0.008)	0.017 (0.008)	0.017 (0.008)
Share of Workers with Renegotiated Floor (Coeff×10)	--	--	--	0.000 (0.005)	--	--	--	0.000 (0.012)
Share with Renegotiated Floor × Simulated Change	--	--	--	0.008 (0.031)	--	--	--	0.068 (0.050)
Demographic Controls and Year Effects	yes	yes	yes	yes	yes	yes	yes	yes
First stage coefficient (instrument=mean simulated change for all workers present in previous year)	--	1.029 (0.004)	--	--	--	1.027 (0.004)	--	--
R-squared	0.092	0.092	0.229	0.229	0.030	0.030	0.078	0.078

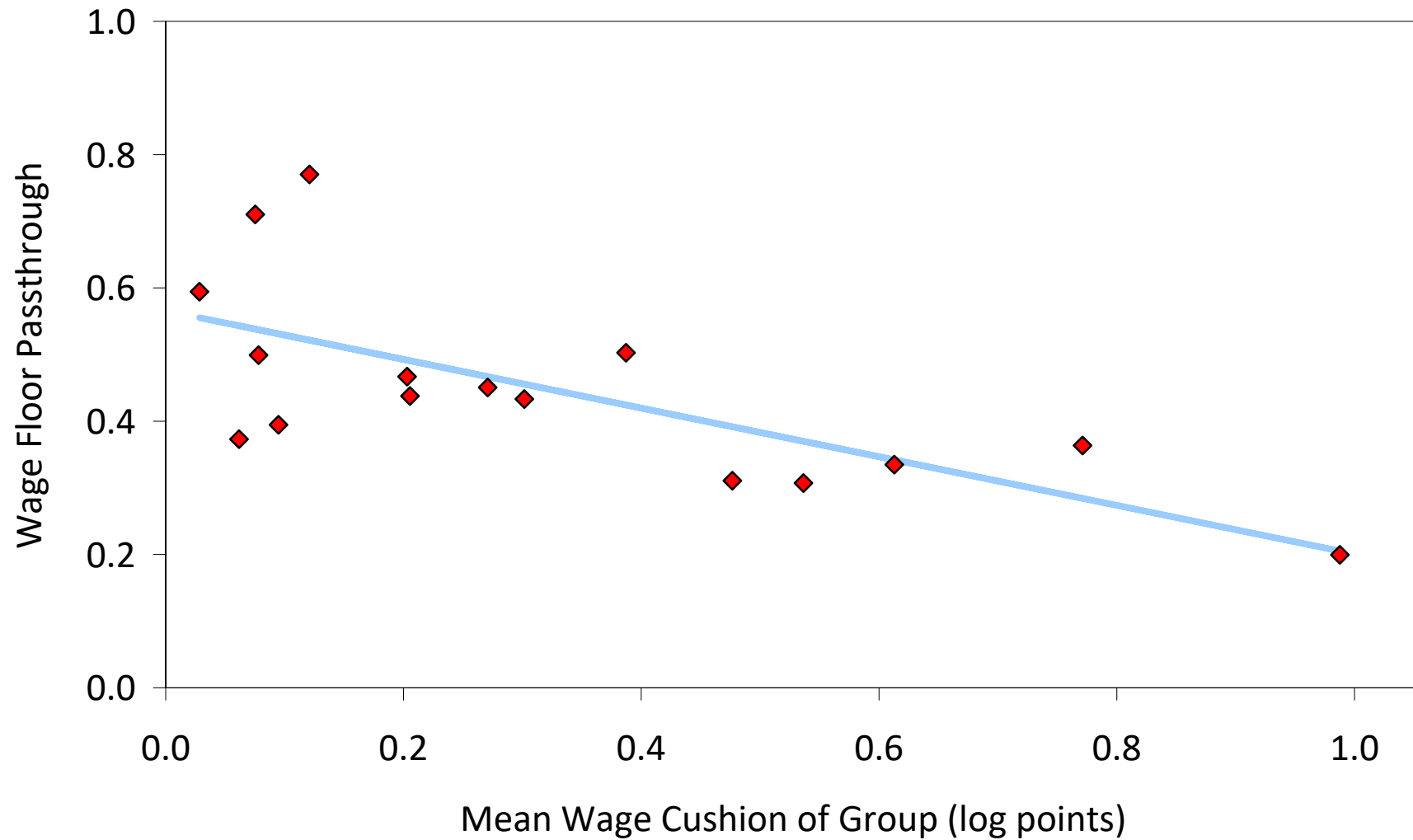
Table 8: Estimated Passthrough Rates for Floor Increases, by Subgroup

	Fraction of Stayers in Group (1)	Mean Relative Wage Floor (2)	Mean Wage Cushion (3)	Mean Wage Supp's (4)	Estimated Passthrough Rate of Wage Floor Changes	
					Base Wage (5)	Total Wage (6)
Males						
<High School, Age 18-24	0.011	0.074	0.078	0.183	0.50 (0.06)	0.68 (0.11)
<High School, Age 25-44	0.206	0.162	0.203	0.182	0.47 (0.03)	0.54 (0.09)
<High School, Age 45-64	0.188	0.190	0.271	0.173	0.45 (0.03)	0.46 (0.06)
High School, Age 18-24	0.007	0.108	0.095	0.201	0.39 (0.09)	0.48 (0.16)
High School, Age 25-44	0.086	0.297	0.302	0.186	0.43 (0.05)	0.42 (0.12)
High School, Age 45-64	0.031	0.429	0.536	0.163	0.31 (0.04)	0.23 (0.12)
University, Age 25-44	0.061	0.545	0.613	0.125	0.33 (0.06)	0.29 (0.09)
University, Age 45-64	0.016	0.720	0.988	0.112	0.20 (0.06)	0.24 (0.13)

Table 8: Estimated Passthrough Rates for Floor Increases, by Subgroup

	Fraction of Stayers in Group (1)	Mean Relative Wage Floor (2)	Mean Wage Cushion (3)	Mean Wage Supp's (4)	Estimated Passthrough Rate of Wage Floor Changes	
					Base Wage (5)	Total Wage (6)
Females						
<High School, Age 18-24	0.005	0.028	0.028	0.153	0.59 (0.04)	0.56 (0.12)
<High School, Age 25-44	0.121	0.093	0.075	0.157	0.71 (0.02)	0.63 (0.07)
<High School, Age 45-64	0.099	0.120	0.121	0.152	0.77 (0.03)	0.76 (0.05)
High School, Age 18-24	0.005	0.067	0.062	0.189	0.37 (0.13)	0.36 (0.15)
High School, Age 25-44	0.074	0.223	0.205	0.172	0.44 (0.04)	0.53 (0.09)
High School, Age 45-64	0.023	0.322	0.387	0.144	0.50 (0.04)	0.47 (0.07)
University, Age 25-44	0.057	0.442	0.477	0.129	0.31 (0.05)	0.37 (0.08)
University, Age 45-64	0.009	0.618	0.771	0.106	0.36 (0.07)	0.31 (0.10)

Figure 4: Estimated Passthrough Rates of Floor Increases to Base Wages, by Group



Note: based on estimates in Table 8. Fitted OLS line shown, R-squared = 0.49.

Q3: how do cushions adjust to changes in floors?

Key conclusions:

- on average passthrough $\approx 0.50 - 0.55$
- lower for high-wage workers
- higher for low-wage workers
- contrast with evidence on spillover effect of min. wage?

Employment effects?

Building on IV strategy for wages:

$$\Delta \ln E_{jt} = \tau_0 + \tau_1 \Delta \bar{w}_{jt}^* + \tau_x X_{jt} + \zeta_{jt} \quad (10)$$

Table 9: Models for Effect of Changes in Wage Floors on Change in Firm-wide Employment

	Dependent Variable = Change in Log Employment					
	All Firms			Firms Covered by Sectoral CBA's		
	(1)	(2)	(3)	(4)	(5)	(6)
Mean of Simulated Change in Total Wage of Employees	0.432 (0.168)	0.165 (0.177)	0.373 (0.186)	0.412 (0.179)	0.104 (0.190)	0.317 (0.198)
Change in Real Value-added per Worker at Firm	0.027 (0.003)	0.026 (0.003)	0.026 (0.003)	0.029 (0.003)	0.028 (0.003)	0.028 (0.003)
Share of Workers with Renegotiated Floors (Coeff×10)	--	--	-0.030 (0.037)	--	--	-0.027 (0.040)
Share with Renegotiated Floor × Mean Simulated Change	--	--	-0.303 (0.305)	--	--	-0.316 (0.316)
Demographic Controls	no	yes	yes	no	yes	yes
R-squared	0.014	0.027	0.027	0.015	0.029	0.029

Q4: sources of wage flexibility under SB: Δ floors, Δ cushions, reallocation of workers to floors?

Approach: counterfactual simulations, compare 2010 to 2016, focus on same skill groups as before (gender/educ/age)

Scenarios

A: all workers in 2010, with actual 2010 floors, cushions, supplements

B: start with A, increment each floor by actual change 2010-16 (captures *floor adjustments*)

C: start with B, reweight skill groups to 2016 shares (captures *demographic change*)

C: 2010 workers, floors updated to 2016, reweighted to 2016 shares

D: all workers in 2016, with 2016 floors, 2010 cushions+supplements (captures *reallocation of workers across floor groups*) - similar to DFL “pasting” of lower tail under different min. wage.

E: D, with 2016 cushions, 2010 supplements(captures *adjustment of cushions within floor-groups*)

F: all workers in 2016 with 2016 floors, cushions ,supplements (captures *adjustment of supplements within floor-groups*)

Table 11: Components of Adjustment of Real Wages, 2010-2016

	Components of Real Wage in 2010			Change in Real Wage 2010-2016	Simulated Components of Real Wage Change				
	Rel. Floor	Cushion	Supplt's		Change in Floors	Reweighting across Skill Groups	Reallocation to New Floor Groups	Change in Cushion within Floor Group	Change in Supplt's within Floor Group
	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)
All	0.272	0.195	0.166	-0.017	-0.022	0.074	-0.048	-0.025	0.005
Males	0.293	0.234	0.174	-0.022	-0.028	0.077	-0.050	-0.026	0.006
Females	0.242	0.140	0.154	-0.001	-0.015	0.079	-0.045	-0.024	0.004
Educ<HS	0.164	0.122	0.160	-0.022	-0.014	0.009	-0.012	-0.007	0.002
Educ=HS	0.350	0.228	0.187	-0.126	-0.033	0.025	-0.092	-0.034	0.007
Educ=Univ.	0.633	0.468	0.160	-0.161	-0.044	0.019	-0.084	-0.062	0.010
Age 16-24	0.137	0.040	0.176	-0.009	-0.004	0.040	-0.038	-0.016	0.009
Age 25-44	0.282	0.192	0.167	-0.025	-0.024	0.071	-0.046	-0.029	0.004
Age 45-64	0.281	0.234	0.163	-0.024	-0.023	0.065	-0.051	-0.020	0.006

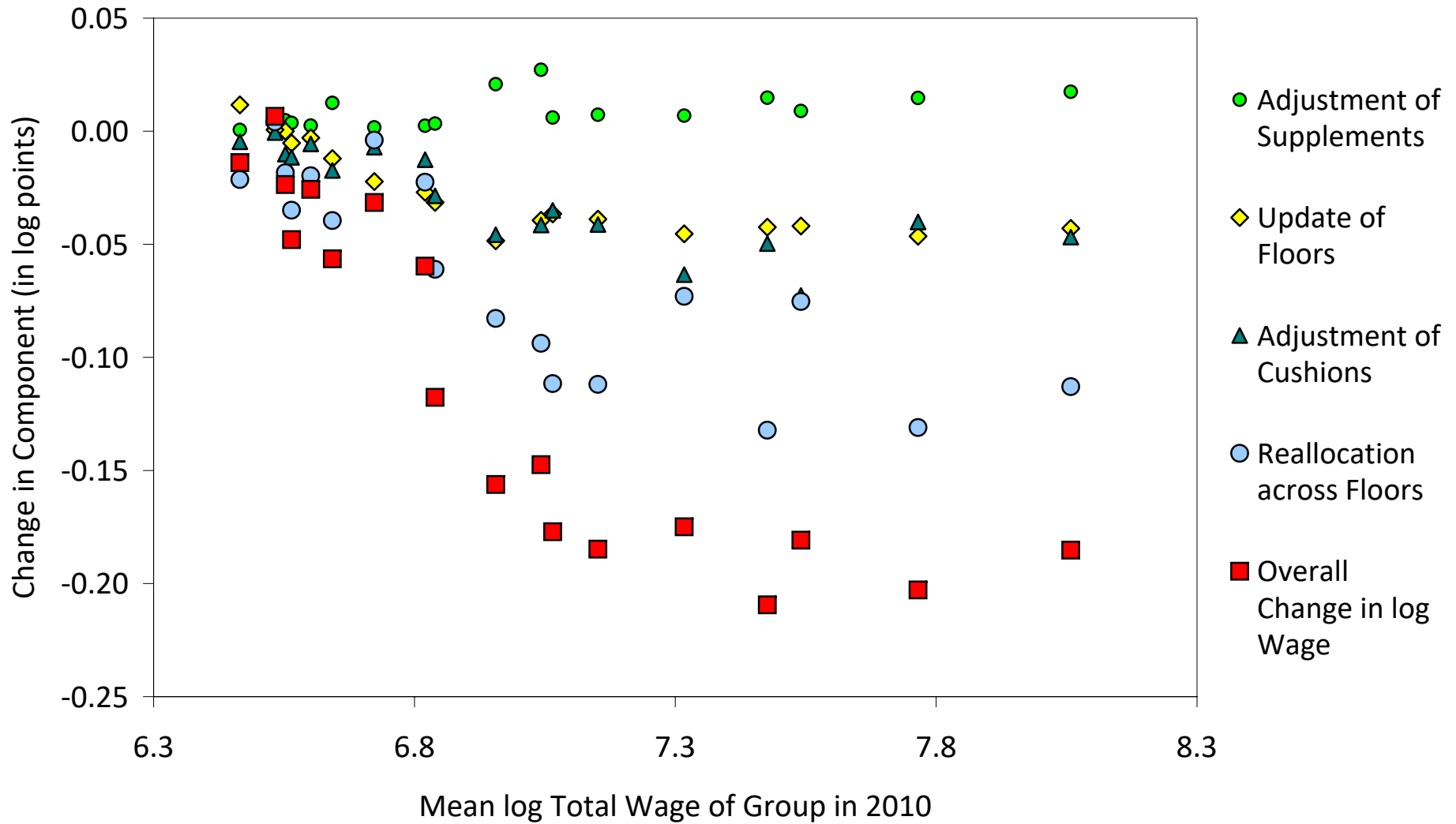
Summary of 2010-2016 changes

- Δ real wages = -1.7%
- Δ floors = -2.2% Δ cushion = -2.5%
- reallocation = -4.8% demographic gains = +7.4%

For college-educated workers:

- Δ real wages = -16.1%
- Δ floors = -4.4% Δ cushion = -6.2%
- reallocation = -8.4%

Figure 5: Components of Change in Mean log Real Wages Across Groups, 2010-2016



Conclusions

1. wage floors are like minimum wages - not actual wages
2. typical wage cushion 20% \Rightarrow potential flexibility
3. wage floors move lockstep; but react to avg. conditions in sector
4. passthrough of floors to wages closer to 50% than 1
5. over really bad years of the crisis, real wages fell a lot via:
 - cuts in floors
 - cuts in cushions
 - reallocations to lower-floor jobs