Table 1: Earnings Function Estimates, using Sample up to 64-year-old, Variables of Occupation Tenure are not Controlled.

	OLS			IV		
	(1)	(2)	(3)	(4)	(5)	(6)
Employer tenure	0.0142***	0.0120***	0.0157*	0.0029	0.0038	0.0108
	(0.0019)	(0.0044)	(0.0084)	(0.0057)	(0.0091)	(0.0142)
Emp.ten.$^2 \times 100$	-0.0135***	0.0031	-0.0398	-0.0069	-0.0120	-0.1016
	(0.0049)	(0.0260)	(0.0832)	(0.0150)	(0.0583)	(0.1489)
Emp.ten.$^3 \times 100$		-0.0003	0.0014		0.0000	0.0038
		(0.0004)	(0.0030)		(0.0010)	(0.0057)
Emp.ten.$^4 \times 1000$			-0.0000			-0.0000
			(0.0000)			(0.0000)
Old job	0.0760***	0.0880***	0.0786**	0.0531	0.0561	0.0451
	(0.0267)	(0.0293)	(0.0329)	(0.0437)	(0.0451)	(0.0482)
Total experience	0.0209***	0.0011	0.0287**	0.0428***	0.0143	0.0501*
	(0.0025)	(0.0070)	(0.0145)	(0.0079)	(0.0160)	(0.0280)
Experience^2	-0.0004***	0.0005*	-0.0016	-0.0007***	0.0006	-0.0022
	(0.0000)	(0.0003)	(0.0010)	(0.0001)	(0.0007)	(0.0020)
Exp.$^3 \times 100$		-0.0012***	0.0050*		-0.0017*	0.0064
		(0.0004)	(0.0030)		(0.0009)	(0.0059)
Exp.$^4 \times 10000$			-0.0000**			-0.0000
			(0.0000)			(0.0000)
N	8601	8601	8601	8601	8601	8601

Notes: Robust standard errors are in parentheses.
*, ** and *** Denote statistical significance at the 10%, 5% and 1% level, respectively.
The dependent variable is log real hourly wages. Other covariates include an intercept, education dummies, occupation and industry dummies, a union member dummy, a marital status dummy, firm size dummies, and regular employee dummy. Columns (1) and (2) denote the coefficients of earnings function (??) which is estimated by the OLS, and columns (3) and (4) denote those by AS's IV method.

- OLS: 2次近似ではテニュアも労働経験もきれいな凸型の関数。係数も有意 OJ ダミーは以前より小さくなったけど1番係数大きくて有意。3次4次と増やすと OJ ダミー以外星が消えていく

- IV: ほぼすべての係数が有意ではない。2次の労働経験のみに星がつく。係数だけで見ても符号が安定しない。

- グラフでリターンを見ても IV はほぼ横ばいで有意に正にもならない

- 職業のテニュアは入れても入れなくてもほぼ結果は変わらない

Table 2: Earnings Function Estimates, using Sample up to 64-year-old, including Non-regular Workers and Specialists, Variables of Occupation Tenure are Controlled.

	OLS			IV		
	(1)	(2)	(3)	(4)	(5)	(6)
Employer tenure	0.0130***	0.0090*	0.0080	0.0037	0.0071	0.0097
	(0.0021)	(0.0048)	(0.0090)	(0.0060)	(0.0099)	(0.0154)
Emp.ten.$^2 \times 100$	-0.0115**	0.0177	0.0267	-0.0109	-0.0303	-0.0592
	(0.0057)	(0.0293)	(0.0881)	(0.0164)	(0.0629)	(0.1660)
Emp.ten.$^3 \times 100$		-0.0005	-0.0004		0.0002	0.0013
		(0.0005)	(0.0031)		(0.0010)	(0.0066)
Emp.ten.$^4 \times 1000$			-0.0000			-0.0000
			(0.0000)			(0.0000)
Old job	0.0858***	0.0986***	0.0929***	0.0556	0.0522	0.0471
	(0.0277)	(0.0306)	(0.0342)	(0.0445)	(0.0461)	(0.0492)
Occupation tenure	0.0020	0.0059*	0.0138***	-0.0053	0.0007	0.0023
	(0.0016)	(0.0032)	(0.0050)	(0.0043)	(0.0070)	(0.0113)
Occ.ten.$^2 \times 100$	-0.0039	-0.0314	-0.1202***	0.0159	-0.0382	-0.0706
	(0.0049)	(0.0206)	(0.0463)	(0.0137)	(0.0528)	(0.1594)
Occ.ten.$^3 \times 100$		0.0004	0.0033**		0.0010	0.0027
		(0.0003)	(0.0013)		(0.0010)	(0.0067)
Occ.ten.$^4 \times 10000$			-0.0026**			-0.0023
			(0.0011)			(0.0085)
Total experience	0.0221***	0.0027	0.0364**	0.0446***	0.0163	0.0549*
	(0.0026)	(0.0075)	(0.0160)	(0.0082)	(0.0167)	(0.0295)
Experience^2	-0.0004***	0.0005	-0.0020*	-0.0008***	0.0006	-0.0025
	(0.0001)	(0.0003)	(0.0011)	(0.0001)	(0.0007)	(0.0021)
Exp.$^3 \times 100$		-0.0011***	0.0062*		-0.0017*	0.0072
		(0.0004)	(0.0032)		(0.0009)	(0.0061)
Exp.$^4 \times 10000$			-0.0000**			-0.0000
			(0.0000)			(0.0000)
N	8463	8463	8463	8463	8463	8463

Notes: Robust standard errors are in parentheses.
*, ** and *** Denote statistical significance at the 10%, 5% and 1% level, respectively.
The dependent variable is log real hourly wages. Other covariates include an intercept, education dummies, occupation and industry dummies, a union member dummy, a marital status dummy, firm size dummies, and regular employee dummy. Columns (1) and (2) denote the coefficients of earnings function (??) which is estimated by the OLS, and columns (3) and (4) denote those by AS's IV method.

Table 3: Earnings Function Estimates, using Sample up to 64-year-old, including Non-regular Workers and Specialists.

	OLS		IV	
	(1)	(2)	(3)	(4)
Employer tenure	0.0142***	0.0130***	0.0029	0.0037
	(0.0019)	(0.0021)	(0.0057)	(0.0060)
Emp.ten.$^2 \times 100$	-0.0135***	-0.0115**	-0.0069	-0.0109
	(0.0049)	(0.0057)	(0.0150)	(0.0164)
Old job	0.0760***	0.0858***	0.0531	0.0556
	(0.0267)	(0.0277)	(0.0437)	(0.0445)
Total experience	0.0209***	0.0221***	0.0428***	0.0446***
	(0.0025)	(0.0026)	(0.0079)	(0.0082)
Experience^2	-0.0004***	-0.0004***	-0.0007***	-0.0008***
	(0.0000)	(0.0001)	(0.0001)	(0.0001)
Occupation Tenure	No	Yes	No	Yes
N	8601	8463	8601	8463

Notes: Robust standard errors are in parentheses.

* , ** and *** Denote statistical significance at the 10%, 5% and 1% level, respectively.

The dependent variable is log real hourly wages. Other covariates include an intercept, education dummies, occupation and industry dummies, a union member dummy, a marital status dummy, firm size dummies, and regular employee dummy. Columns (1) and (2) denote the coefficients of earnings function (??) which is estimated by the OLS, and columns (3) and (4) denote those by AS's IV method.

- その他のテニュアの年数区間をコントロールしたうえでのその年数区間の上昇率？

- OLS: 0-¿1 の上昇率は非有意で係数の値も小さい。25 年で上昇率が上がってその後はテニュアとともに下降するけど有意

- IV: テニュアとともに係数は下降気味だけど25~30 年で上昇している。25 年以降以外非有意。

Table 4: Estimated Returns to Employer Tenure, using Sample up to 64-year-old, including Non-regular Workers and Specialists.

| | AS's IV | | | | 2SFD |
| | OLS | | IV | | |
	(1)	(2)	(3)	(4)	(5)
2 Years	0.1039***	0.1113***	0.0586	0.0626	
	(0.0256)	(0.0265)	(0.0405)	(0.0411)	
5 Years	0.1437***	0.1477***	0.0659	0.0715*	
	(0.0248)	(0.0258)	(0.0404)	(0.0414)	
10 Years	0.2046***	0.2040***	0.0754	0.0820*	
	(0.0251)	(0.0264)	(0.0479)	(0.0496)	
15 Years	0.2588***	0.2545***	0.0814	0.0869	
	(0.0260)	(0.0276)	(0.0582)	(0.0600)	
20 Years	0.3062***	0.2992***	0.0840	0.0865	
	(0.0267)	(0.0285)	(0.0686)	(0.0699)	
25 Years	0.3469***	0.3383***	0.0831	0.0806	
	(0.0271)	(0.0289)	(0.0801)	(0.0808)	
Occupation Tenure	No	Yes	No	Yes	No
N	8463	8463	8463	8463	

Notes: Robust standard errors are in parentheses.
* , ** and *** Denote statistical significance at the 10%, 5% and 1% level, respectively.
 The dependent variable is log real hourly wages. Other covariates include an intercept, education dummies, occupation and industry dummies, a union member dummy, a marital status dummy, firm size dummies, and regular employee dummy. Columns (1) and (2) denote the coefficients of earnings function (??) which is estimated by the OLS, and columns (3) and (4) denote those by AS's IV method.
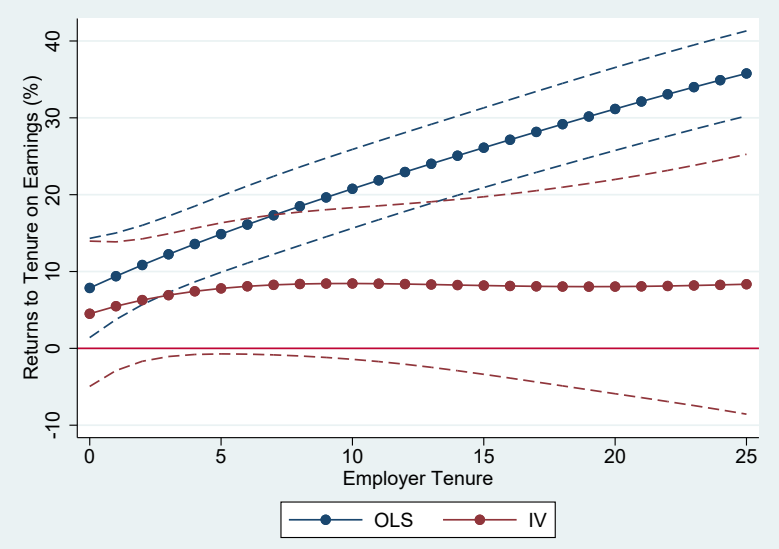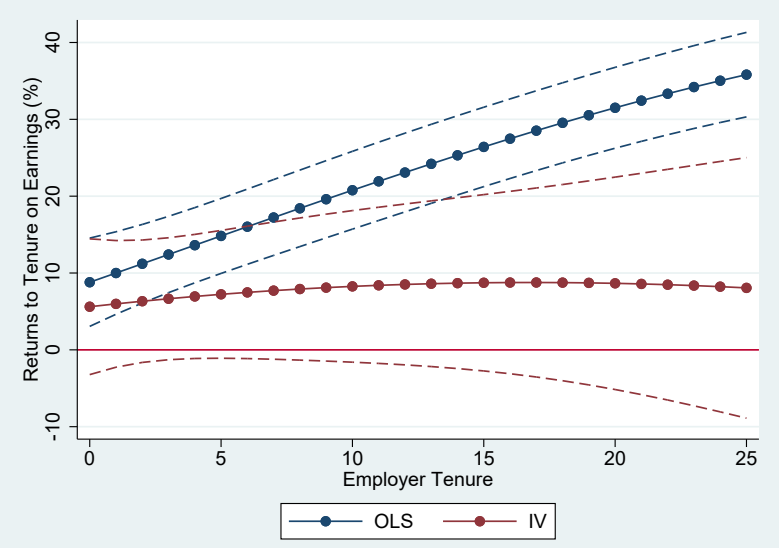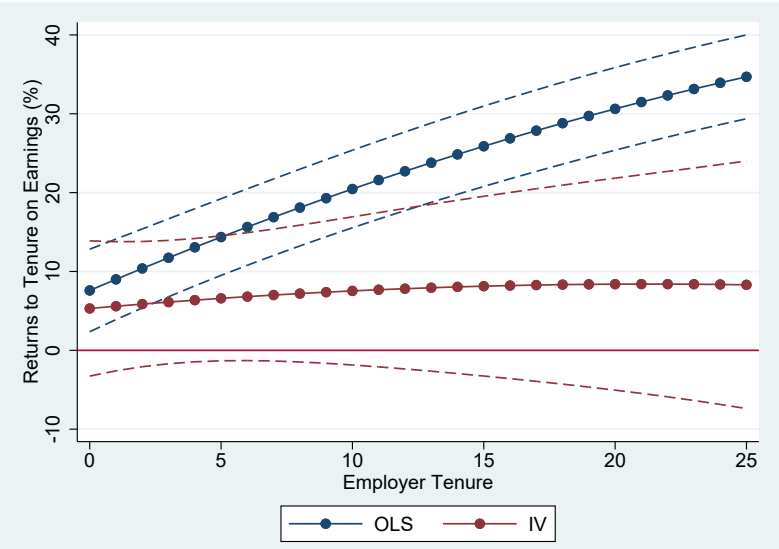
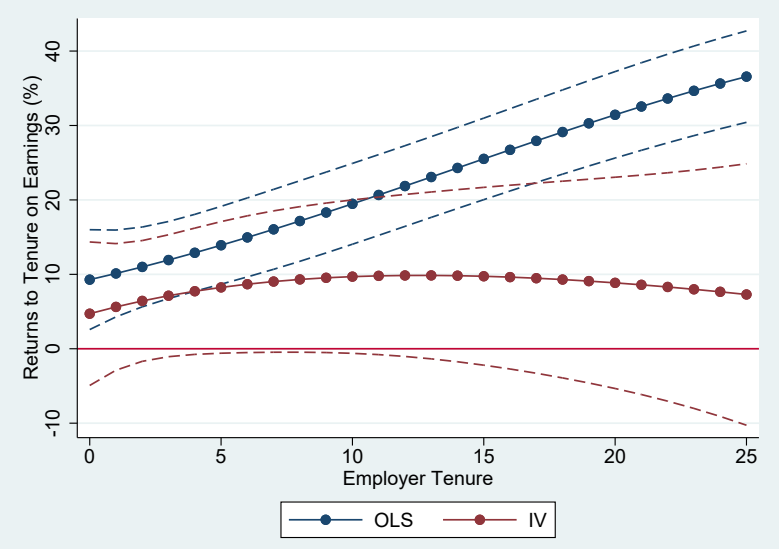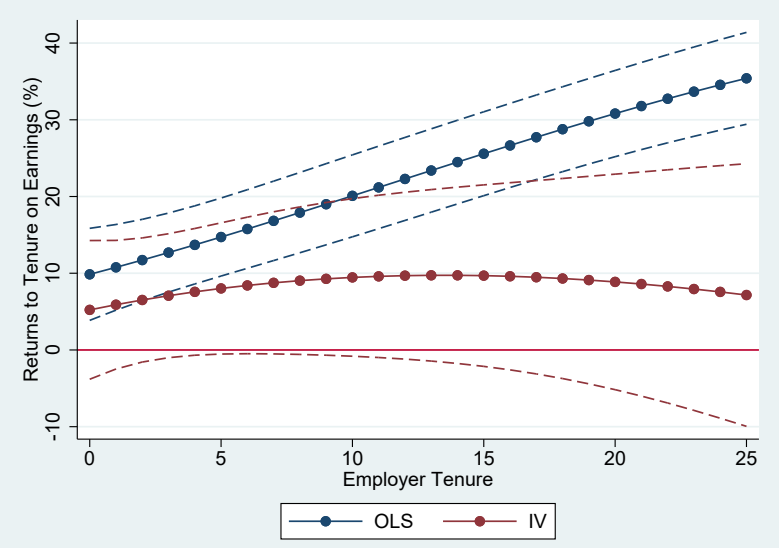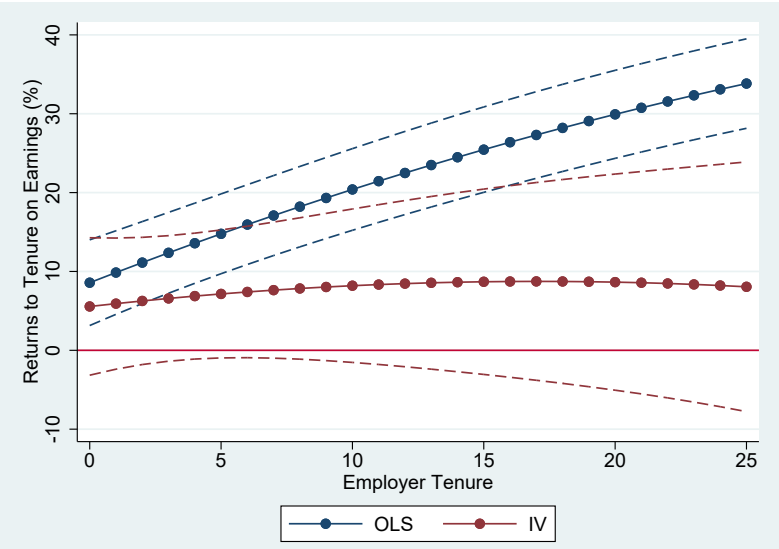Table 5: Estimated Returns to Employer Tenure, Employer Tenure is Treated as Dummy Variables

	OLS (1)	AS's IV (2)
$T_{ij} \geq 1$	-0.0076	0.0207
	(0.0335)	(0.0422)
$T_{ij} \geq 2$	0.0567**	0.0060
	(0.0269)	(0.0305)
$T_{ij} \geq 5$	0.0401**	0.0395
	(0.0183)	(0.0255)
$T_{ij} \geq 10$	0.0891***	0.0080
	(0.0183)	(0.0266)
$T_{ij} \geq 15$	0.0216	-0.0013
	(0.0192)	(0.0299)
$T_{ij} \geq 20$	0.0104	0.0008
	(0.0196)	(0.0295)
$T_{ij} \geq 25$	0.0919***	0.0458
	(0.0235)	(0.0344)
$T_{ij} \geq 30$	-0.0289	0.0371
	(0.0217)	(0.0371)
Total experience	0.0202***	0.0434***
	(0.0024)	(0.0072)
Experience^2	-0.0003***	-0.0008***
	(0.0000)	(0.0001)
N	9437	9437

Notes: Robust standard errors are in parentheses.
*, ** and *** Denote statistical significance at the 10%, 5% and 1% level, respectively.
The dependent variable is log real hourly wages. Other covariates include an intercept, education dummies, occupation and industry dummies, a union member dummy, a marital status dummy, firm size dummies, and regular employee dummy. Columns (1) and (2) denote the coefficients of earnings function (??) which is estimated by the OLS, and columns (3) and (4) denote those by AS's IV method.

Returns to Tenure on Earnings (%)

40

30

20

10

0

-10

0   5   10   15   20   25
Employer Tenure

OLS   IV

Returns to Tenure on Earnings (%)

40

30

20

10

0

-10

0   5   10   15   20   25
Employer Tenure

OLS   IV

Returns to Tenure on Earnings (%)

40

30

20

10

0

-10

0   5   10   15   20   25
Employer Tenure

OLS   IV
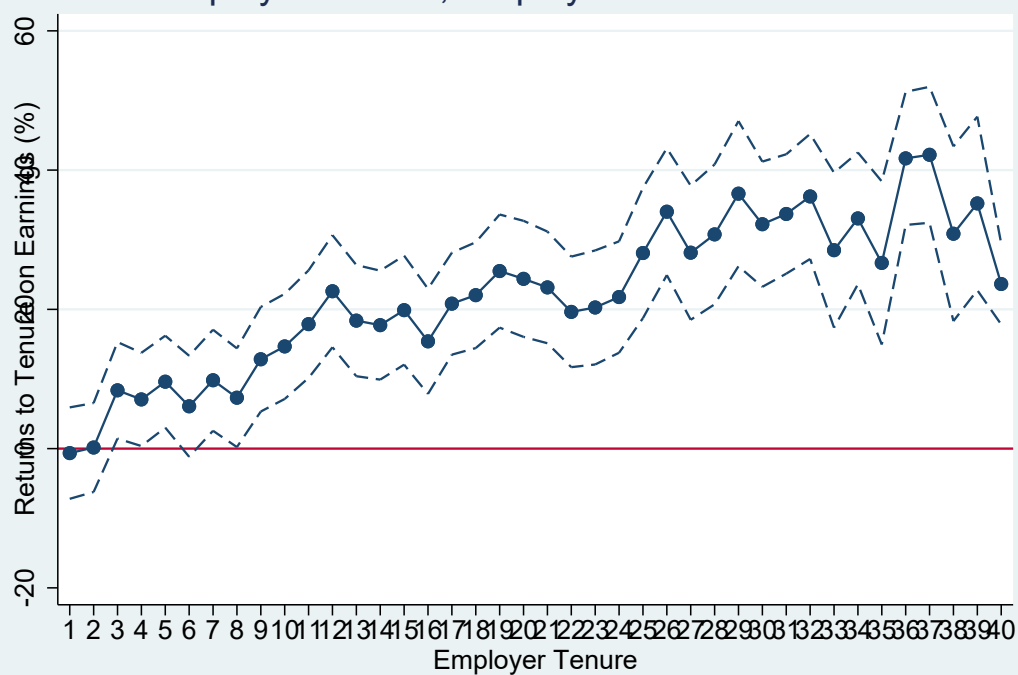
Returns to Employer Tenure, Employer Tenure is Treated as Dur

Table 6: Earnings Function Estimates, using Various Subsamples.

	Under 59-year-old		Large Firms (≥ 500)		Small Firms (< 500)		Non-Professional		Regular Employee	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Employer tenure	0.0132***	0.0016	0.0195***	0.0068	0.0127***	0.0029	0.0171***	0.0012	0.0138***	0.0025
	(0.0021)	(0.0064)	(0.0036)	(0.0100)	(0.0024)	(0.0074)	(0.0020)	(0.0064)	(0.0021)	(0.0062)
Emp.ten.$^2 \times 100$	-0.0080	0.0037	-0.0228***	-0.0136	-0.0130**	-0.0024	-0.0200***	-0.0056	-0.0111**	-0.0072
	(0.0058)	(0.0179)	(0.0086)	(0.0258)	(0.0064)	(0.0205)	(0.0052)	(0.0162)	(0.0056)	(0.0166)
Old job	0.0899***	0.0482	0.0363	0.0447	0.0978***	0.0497	0.0546*	0.0399	0.0883***	0.0549
	(0.0300)	(0.0501)	(0.0549)	(0.0834)	(0.0311)	(0.0530)	(0.0291)	(0.0502)	(0.0340)	(0.0578)
Total experience	0.0157***	0.0358***	0.0197***	0.0533***	0.0206***	0.0353***	0.0177***	0.0434***	0.0213***	0.0398***
	(0.0030)	(0.0090)	(0.0044)	(0.0140)	(0.0032)	(0.0108)	(0.0028)	(0.0087)	(0.0030)	(0.0087)
Experience^2	-0.0002***	-0.0006***	-0.0003***	-0.0009***	-0.0004***	-0.0007***	-0.0003***	-0.0007***	-0.0004***	-0.0006***
	(0.0001)	(0.0002)	(0.0001)	(0.0003)	(0.0001)	(0.0002)	(0.0001)	(0.0002)	(0.0001)	(0.0002)
N	7754	7754	3325	3325	5276	5276	7337	7337	7708	7708

Notes: Robust standard errors are in parentheses.

*, ** and *** Denote statistical significance at the 10%, 5% and 1% level, respectively.

The dependent variable is log real hourly wages. Other covariates include an intercept, education dummies, occupation and industry dummies, a union member dummy, a marital status dummy, firm size dummies, and regular employee dummy. Columns (1) and (2) denote the coefficients of earnings function (**??**) which is estimated by the OLS, and columns (3) and (4) denote those by AS's IV method.

Table 7: Estimated Returns to Employer Tenure, using Various Subsamples.

	Under 59-year-old		Large Firms (≥ 500)		Small Firms (< 500)		Non-Professional		Regular Employee	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2 Years	0.1160***	0.0515	0.0743	0.0578	0.1226***	0.0554	0.0881***	0.0420	0.154***	0.0595
	(0.0288)	(0.0466)	(0.0533)	(0.0805)	(0.0296)	(0.0488)	(0.0279)	(0.0465)	(0.0327)	(0.0542)
5 Years	0.1539***	0.0570	0.1279**	0.0753	0.1578***	0.0634	0.1353***	0.0443	0.1545***	0.0654
	(0.0279)	(0.0465)	(0.0526)	(0.0833)	(0.0286)	(0.0496)	(0.0271)	(0.0464)	(0.0316)	(0.0532)
10 Years	0.2139***	0.0677	0.2081***	0.0991	0.2113***	0.0760	0.2060***	0.0459	0.2152***	0.0723
	(0.0282)	(0.0549)	(0.0538)	(0.0972)	(0.0288)	(0.0629)	(0.0275)	(0.0554)	(0.0315)	(0.0590)
15 Years	0.2699***	0.0802	0.2769***	0.1161	0.2584***	0.0873	0.2667***	0.0447	0.2704***	0.0756
	(0.0293)	(0.0669)	(0.0561)	(0.1121)	(0.0298)	(0.0818)	(0.0284)	(0.0678)	(0.0321)	(0.0684)
20 Years	0.3220***	0.0945	0.3342***	0.1264	0.2989***	0.0974	0.3174***	0.0406	0.3200***	0.0752
	(0.0301)	(0.0803)	(0.0579)	(0.1239)	(0.0305)	(0.1034)	(0.0292)	(0.0807)	(0.0326)	(0.0791)
25 Years	0.3700***	0.1107	0.3802***	0.1299	0.3329***	0.1064	0.3582***	0.0338	0.3641***	0.0713
	(0.0308)	(0.0962)	(0.0589)	(0.1339)	(0.0308)	(0.1287)	(0.0296)	(0.0945)	(0.0329)	(0.0919)
N	7754	7754	3325	3325	5276	5276	7337	7337	7708	7708

Notes: Robust standard errors are in parentheses.
*, ** and *** Denote statistical significance at the 10%, 5% and 1% level, respectively.
The dependent variable is log real hourly wages. Other covariates include an intercept, education dummies, occupation and industry dummies, a union member dummy, a marital status dummy, firm size dummies, and regular employee dummy. Columns (1) and (2) denote the coefficients of earnings function (??) which is estimated by the OLS, and columns (3) and (4) denote those by AS's IV method.
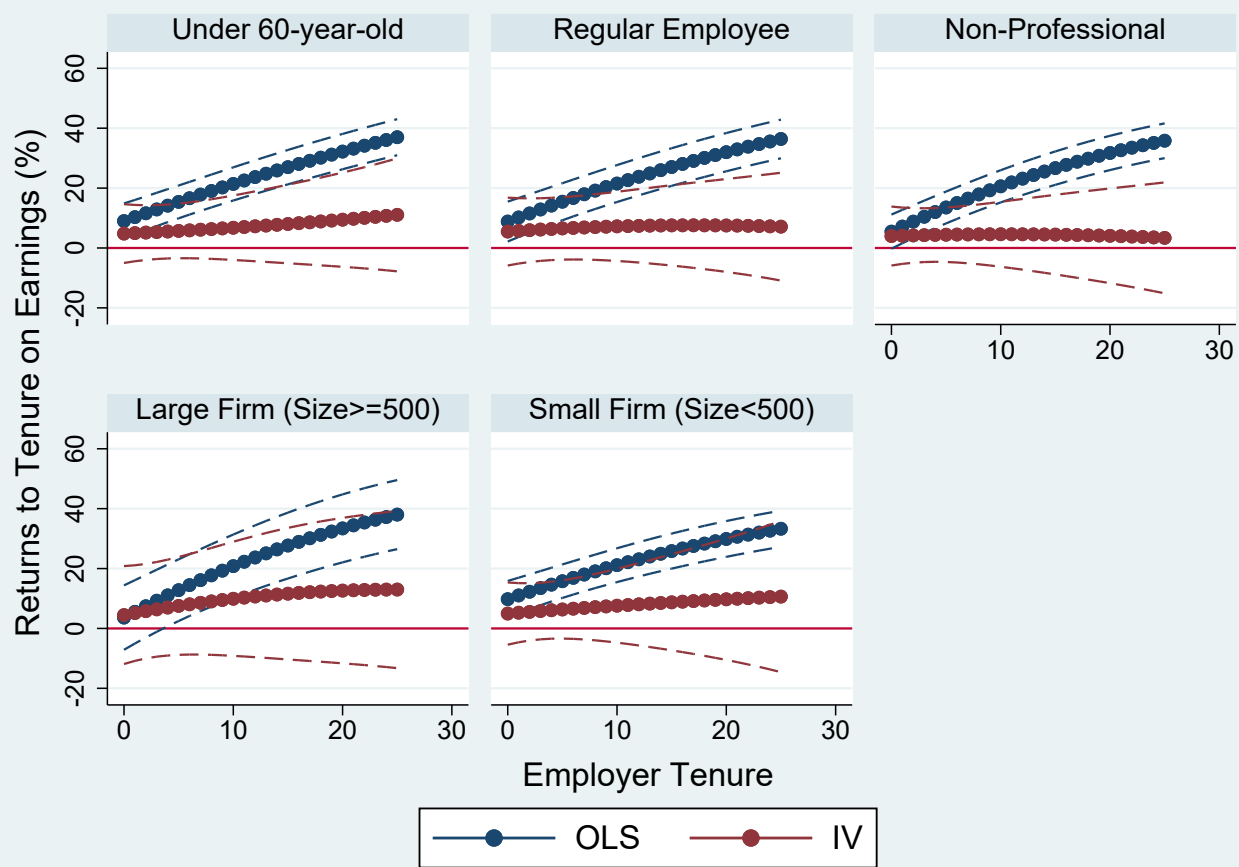
Table 8: Estimation Results, using the Method of 2SFD Estimation.

	(1)	(2)	(3)	(4)
1st stage				
Constant	0.1196***	0.2535***	0.3955***	0.4544***
	(0.0231)	(0.0248)	(0.0269)	(0.0276)
Emp.ten.$^2 \times 100$		-0.0672**	0.0023	-0.0696
		(0.0276)	(0.0944)	(0.2105)
Emp.ten.$^3 \times 1000$			-0.0031	0.0528
			(0.0167)	(0.0852)
Emp.ten.$^4 \times 10000$				-0.0102
				(0.0106)
Experience$^2 \times 100$		-0.2534***	-1.1988***	-2.3235***
		(0.0246)	(0.0946)	(0.2068)
Experience$^3 \times 1000$			0.1387***	0.5901***
			(0.0134)	(0.0702)
Experience$^4 \times 10000$				-0.0515***
				(0.0077)
2nd stage				
Total Experience	.0625***	.0625***	.0625***	.0625***
	(.0012)	(.0012)	(.0012)	(.0012)
Employer Tenure	.0571**	.1910***	.3329**	.3919***
	(.0229)	(.0277)	(.0372)	(.0425)
N	6042	6038	6038	6038
N	8807	8807	8807	8807

Notes: Robust standard errors are in parentheses.
*, ** and *** Denote statistical significance at the 10%, 5% and 1% level, respectively.
The dependent variable is log real hourly wages. Other covariates include an intercept, education dummies, occupation and industry dummies, a union member dummy, a marital status dummy, firm size dummies, and regular employee dummy. Columns (1) and (2) denote the coefficients of earnings function (**??**) which is estimated by the OLS, and columns (3) and (4) denote those by AS's IV method.