PART TIME PAY PENALTIES PERSIST

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OUTLINE

I. Part time wage gap with full time—Reasons?

II. Lit Findings – by country, xsection/panel data

III. Part time penalty, by # of hours, hourly/ salary, economic/noneconomic reasons, gender

IV. Part time penalty with fixed effects estimation

V. Part time penalty by dis-aggregated industry

VI. Conclusions and implications for public policy

4 Motivations – Part time a blessing and curse

1) % Part time jobs, both voluntary and involuntary cycle but display an **upward** trend, due to **structural** forces (Golden, 2016), such as **industry composition changes** (Valletta et al 2018); are **concentrated** by **industry**

2) Little direct evidence of **part-time:full-time pay differential in the US,** since Hirsch (2005), and to what it can be attributable (HK, discrim, etc.)

3) Size, Incidence and Concentration of Part-time compensation disadvantage, since it includes: employee benefits, paid leaves, work scheduling)…is sparking Compensation Parity Policy Proposals: "Fair Workweek" ("Access to Hours" for part-timers and Predictability Pay).

Theoretical Foundation:

Why Part Time Work May Exhibit an Hourly Earnings Difference?

Ambiguous -- may lead to either a pay penalty or premium … or no net

Labor **Demand** side –

--**higher fixed cost** per hour, due to costs of daily start-up, firms' coordination and communication costs, admin/hiring/training of two part timers exceeds one full-timer (Montgomery, 1988).

–vs. **lower fixed cost** per hour, due to lower nonwage labor costs for PT, in US,

--employers will raise ratio of PT/FT (Carre&Tilly, , 2012)

--**productivity** differentials: MRP for output vs. MRP per hour (with fatigue effects) (Collewet and Sauermann, 2017; Jepsen, et al, 2005; Garnero, et al, 2014; O'Dorchai et al 2007.)

--firms with a large part-time employment share are relatively **more** productive.

Labor **Supply** side --

--PT provides a "job **amenity**" for which worker is willing to sacrifice some pay (e.g., more flexibilit in schedule)… a CWD (Hamermesh, 1996), or workers are willing to take low paid part time jobs as a way of queuing for full time jobs with higher wages (Hirsch, 2005).

--Long Hours Premium (Cha and Weeden, 2016; Goldin 2014) – earnings return to hours "investment"

Findings: non US – penalties common tho premia in some countries (Australia)

- in the UK, 22 to 26 percent. About half of the pay gap, among women, is "explained" by worker characteristics, but the remaining 10-13 percent is **unexplained** (Manning and Petrongolo, 2008).
- in Norway, wage differences between part-time and full-time workers are small (Hardoy and Schøne, 2006), suggesting little systematic differences between part-time and full-time
  - they attribute to Norwegian labor market providing more equal rights for part-time workers, strict rules against the discrimination of part-time workers, and a generous family policy enabling women to combine work and family life.
- more part-time work does **not** reduce **current** wages, although it leads **to negative longer-term** wage effects (Paul, 2016).
  - A study of women's part-time work and wage penalties, using fixed-effects estimation, find the smallest penalties for part-time employment where female labor force participation rates are lowest McGinnity and McManus, 2007).
- In US, within occupations: 9 percent wage penalty among workers in child care establishments, a 7 percent gap among teacher aides and no more than 0 percent among teachers or among nurses (Bardasi and Gornick, 2008; Montgomery and Cosgrove, 1995; Hirsch, 1995).

Estimation Model

$$ln(w_{ijt}) = \alpha_i + \phi_j + \mu_{ij} + \beta PT_{ijt} + \gamma X_{ijt} + \epsilon_{ijt}.$$

W = hourly earnings
PT = part time working (measures: “usually work PT” or “usually work <35 hours per week; or “actual hours last week”<35

Fixed effects terms = time-invariant, worker heterogeneity (PT worker’s innate ability, commitment, etc.); institutional settings/ features (e.g. unionization, protective/parity laws)

X vector – industries, occupations

Empirical Strategy:

- The disadvantage for working part time workweeks is estimated with a large, pooled data set, using the Current Population Survey's (CPS) Outgoing Rotation Group (ORG)', from 2003 to 2018.
  - intended to replicate and update from an earlier period, 1995-2002 (Hirsch, 2005).
  - N = 344k+ individuals, and with matching, 688k observations.
  - Each matched pair starts with rotation group 4 in the first year, with rotation group 8 in the following year...using the household identifier and the record line number.
    - Roughly HALF of each outgoing rotation group was eligible for a match: to form the panel, 75% of ALL individuals in rotation group #4 are matched successfully to their records the prior year, while 66% are matched and were employed in wage and salary jobs the following year

- Do part time workers experience an earnings per hour disadvantage and to what extent does that vary by type of worker, sector, #hours, gender/race and reason for part time working?
  - CPS defines "part time" as those with "usual hours" per week (and also, "actual hours") as below 35.

- Sequential wage regressions: "raw," "adjusted" for HK characteristics," "fully adjusted," fixed effects:
  - Latter using the panel feature of CPS ORG, fixed effects regressions, to control for individual heterogeneity that would create pay differences

Estimations:

1) starts by the **"unadjusted," or "raw"** wage difference between part time and full time jobs or work per hour.

--relates most directly to workers' choices in the labor market regarding hours of work and to consequences for their income.

2) **control for demographic and human capital** factors such as age, experience in the labor market, education, etc., to get a **partially "adjusted"** penalty (or premium).

--typically lessens the size of the penalty (Baffoe-Bonnie, 2004).

3) **"Fully adjusted"** controls for industry (and occupations)

4) **Fixed effects**, using 10% of sample that switched between part-time and full-time, 12 months lag: **focusing on those who changed to both a different occupation and industry ("leavers").**

Table 1
Estimated hourly wage penalty for part-time work

	Part time hourly wage penalty				
	Raw (1)	**Unadjusted** (2)	**Partially adjusted** (3)	**Fully adjusted** (4)	**Fully adjusted by type** (5)
Hourly wage penalty					
All Part-time (PT)	-0.524	-0.531	-0.293	-0.198	
Standard error*	(-0.001)	(-0.001)	(-0.001)	(-0.001)	
Involuntary-Slack work					-0.223
Standard error*					(-0.003)
Involuntary-Can only find PT work					-0.295
Standard error*					(-0.003)
Voluntary PT					-0.183
Standard error*					(-0.001)
Controls					
state (51)		x	x	x	x
year (16)		x	x	x	x
gender (2)			x	x	x
race (4)			x	x	x
education (16)			x	x	x
age (5)			x	x	x
occupation (10)				x	x
industry (13)				x	x

* Heteroskedasticity-robust standard errors in parentheses.

The sample of 1,756,419 observations is hourly and nonhourly wage earners, ages 16+, in the 2003-2018 EPI extracts of the CPS-ORG. Observations with allocated hourly wages or weekly earnings are excluded. Demographic controls include race, gender, and education dummies, and a quintic polynomial in age. Industry and occupation controls are dummies for Census recodes of major industry and occupation categories. Part-time is defined as working less than 35 hours per week on the primary job. Dependent variable is log hourly wages.

Key Findings: Fully adjusted wage penalty = 18% for "voluntary" PT; PTER: 22% for Slack work reason; 30% for in ability to find full time

- Part-time workers earn 29.3 percent less per hour worked than other workers with similar demographic characteristics, education levels.
- The part-time wage penalty is smaller, but still substantial, 19.8%, when the worker's industry and occupation as well as demographics and education are controlled ('fully-adjusted wage penalty').
  - suggests that there is a wage penalty for being relegated to certain lower paying sectors or job types dominated by part-time work.

- The more voluntary the reason, the smaller the pay penalty, is **not** consistent with **compensating wage differential** theory, which would suggest that workers with a stronger preference for part time hours would be willing to sacrifice more pay to attain that.
  - The finding for **women**, in particular, is **more strongly** in opposition to the theory—even just among those paid by the hour, which filters out many higher skilled part time positions.

Table 2

Estimated hourly wage penalty for part-time work by gender and race/ethnicity

	Part-time wage penalty	standard error
All	-0.198	(-0.001)
By race/ethnicity		
white	-0.207	-0.001
black	-0.202	-0.004
Hispanic	-0.142	-0.003
By gender		
female	-0.159	-0.001
male	-0.258	-0.002
By gender and race/ethnicity		
White male	-0.281	-0.003
White female	-0.164	-0.002
Black male	-0.246	-0.006
Black female	-0.172	-0.004
Hispanic male	-0.169	-0.004
Hispanic female	-0.123	-0.003

Regressions include controls for age (5), education (16), years (16). Industry (13), occupation (10) and state (51)

Hirsch (2005) had found, using 1994-2002 CPS data:

With the full battery of typical control variables—
the wage penalty found is:
-10% for women
-17% for men
(or 9 and 19 log points difference, respectively)

Thus, penalties have risen in the 2003-2018 era

- By race and ethnicity, the **fully adjusted** wage penalty is across-the-board – it is 20.7 for white, 20.2 percent for African-American and 14.2 percent for Hispanic-American workers,
  - suggesting majority workers are just as prone to the part-time wage penalty.
- By gender, the adjusted wage penalty is 15.9 percent for women and 25.8 percent for men,
  - suggesting that men pay a noticeably higher price for working part time,

- By gender and race, white men face the highest wage penalty, at 28.1 percent, followed by black men at 24.6 percent, while black women's penalty is 17.2 percent and white women 16.4 percent and Hispanic men 14.2 and women 12.3 percent, respectively.
  - The racial gap in part-time wage penalties reflects a combination of whites' advantage in wages at their full-time jobs along with a shared disadvantage when they are in part time jobs.

Hours Ranges (with Partial Adjustment, subset of data, centered on mean of 25.7% rather than 29.3%)

- The pay penalty for those whose hours are usually 1 to 19 is 30%.

--It is similar, about 28 percent, for those working 20 to 29 hours.

--Working 30 to 34 hours incurs a somewhat smaller, 22 percent penalty.

--Even 35 to 39 hours entails an 11 percent penalty.

By number of hours, the part time pay penalty reflects in large part a “shorter hours” penalty.

Table 5 : Adjusted Part-time wage penalty by Weekly Hours status					
logwage	# of Hours (referent = 40)	**Coefficient**	**Robust Std. Err**	**t**	**P>|t|**
Hours Category	1-19	-.30120	00889	-33.88	0.000
	20-29	-.27992	.00597	-46.85	0.000
	30-34	-.22158	.00763	-29.01	0.000
	35-39	-.11370	.01679	-6.77	0.000
					Number of obs = 661, R-squared = 0.394 Adj R-squared = 0.39 Within R-sq. = 0.11

This suggests full time work is better conceived of working 40 or more hours, when it comes to pay.

- Hirsch: CPS ORG matching individuals to exactly 12 months prior, employs the panel aspect of the CPS's 4 possible "states."

i) PT "stayers" (was part time in both initial and eventual periods);
ii) PT "joiners" – who changed from FT to PT;
iii) PT "leavers" – who changed from PT to FT,
iv) the reference group, those who were full time in the survey and also in the previous year, i.e., "full time stayers."

Using the four subgroups, three dummy variables should be capturing most of the "unmeasured skill difference" in explaining the change in earnings between their reported concurrent hourly earnings and their earnings in period (t-1), exactly 12 months prior.

- Fixed effects, among 10 % of the sample changing between full time and part time, in either direction show very small (though still statistically significant) penalty rates
  - However, among those changers who changed their industry and occupation – arguably a purer gauge – 11-13%
  - Higher penalty for Hourly paid, actually a premium for Salaried part timers
- For those who changed between FT and PT without changing occupation and industry (i.e., within same firm), had much smaller pay penalties, only 0-4%....as usually happens with fixed effects.
  - Actually a premium for Salaried PT, which offsets a greater, 4-5% penalty for HOURLY workers

Table 17 Part Time Working, By Major Industry, as % of total at work, Worked 1-34 Hours or Usually Work Part Time		
	Worked 1-34 Hours Last Week	**Usually Work Part Time**
Total, nonagricultural industries	23.7%	14.1%
Wage and salary workers(1)	22.8%	13.6%
Mining, quarrying, and oil and gas extraction	8.7%	2.3%
Construction	15.3%	4.8%
Manufacturing	10.7%	3.9%
Durable goods	9.9%	3.3%
Nondurable goods	12.2%	5.1%
Wholesale and retail trade	**28.9%**	**18.9%**
Transportation and utilities	15.5%	7.4%
Information	17.5%	9.1%
Financial activities	15.6%	8.0%
Professional and business services	17.8%	8.9%
Education and health services	**26.3%**	**17.1%**
Leisure and hospitality	**41.7%**	**29.2%**
Other services	**30.6%**	**21.2%**
Other services, except private households	**27.4%**	**18.9%**
Private households	**56.4%**	**39.6%**
Public administration	15.4%	5.0%
Source: Author's computations from BLS, Labor Force Statistics from the CPS November 2017 https://www.bls.gov/cps/cpsaat21.htm		

What about at Disaggregated (Intermediate) Industry Level?

Is there a similar pattern…including whether differential is related to the size of industries (n), particularly where part time jobs are less common?

Part Time Wage Penalties by 50 Intermediate Industries							
Industry Intermediate Level		Pay Penalty Coefficient		t		N	Adj R-squared
Agriculture		**-.12933**		-4.48		4,503	0.3196
Mining		**-.14796**		-3.04		4,761	0.3054
Forestry, logging, fishing, hunting, and trapping		**.31559**		-4.55		846	0.4664
Construction		**-.19831**		-14.00		34,829	0.3653
Manufacturing							
Nonmetallic mineral product manufacturing		-.13600		-1.76		2,531	0.3651
Primary metals and fabricated metal products		-.22281		-6.25		9,527	0.3277
Computer and electronic product manufacturing		-.10505		-2.03		7,878	0.5033
Machinery manufacturing		-.15641		-5.18		7,654	0.4196
Electrical equipment, appliance manufacturing		-.21085		-4.14		2,732	0.4689
Transportation equipment manufacturing		-.10657		-3.25		11,872	0.4707
Wood products		-.11281		-2.00		2,505	0.3467
Furniture and fixtures manufacturing		-.14461		-4.76		2,730	0.3575
Miscellaneous and not specified manufacturing		-.3496		-8.51		6,119	0.4884
Food manufacturing		-.27713		-8.86		9,459	0.4296
Beverage and tobacco products		-.37543		-3.74		1,301	0.3497
Textile, apparel, and leather manufacturing		-.22703		-7.87		3,197	0.4944
Paper and printing		-.22056		-5.64		6,062	0.3514
Petroleum and coal products manufacturing		-.44638		-2.00		898	0.3785
Chemical manufacturing		-.29140		-4.77		6,934	0.4590
Plastics and rubber products		-.13683		-2.04		3,325	0.3789

Part Time Wage Penalties by 50 Intermediate Industries						
Industry Intermediate Level		Pay Penalty Coefficient	t	P>|t|	N	Adj R-squared
Wholesale trade		**-.25387**	-10.94	0.000	20,185	0.3509
Retail trade		**-.32218**	-33.23	0.000	70,553	0.3708
Transportation and warehousing		**-.20752**	-13.83	0.000	26,927	0.2297
Utilities		**-.26613**	-4.98	0.000	7,724	0.3380
Publishing industries (except internet)		**-.35948**	-10.28	0.000	4,092	0.3789
Motion picture and sound recording industries		**-.46611**	-9.13	0.000	957	0.5477
Broadcasting (except internet)		**-.29814**	-6.26	0.000	2,928	0.2988
Internet publishing and broadcasting		-.43002	-1.70	0.102	135	0.3453
Telecommunications		**-.17905**	-4.19	0.000	5,810	0.3999
Internet service providers and data processing services		**-.27789**	-4.57	0.000	675	0.5146
Other information services		**-.45707**	15.32	0.000	1,808	0.5070
Finance		**-.25001**	-16.28	0.000	21,588	0.3904
Insurance		**-.19923**	-7.54	0.000	13,813	0.3516
Real estate		**-.25351**	-12.02	0.000	7,373	0.2617
Rental and leasing services		**-.49643**	-15.35	0.000	1,972	0.4312
Professional and technical services		**-.18945**	-15.98	0.000	38,170	0.3699

Part Time Wage Penalties by 50 Intermediate Industries					
Industry Intermediate Level	Pay Penalty Coefficient	t	P>|t|	N	Adj R-squared
Professional and technical services	-.18945	-15.98	0.000	38,170	0.3699
Management of companies and enterprises	-.38474	-6.05	0.000	734	0.4424
Administrative and support services	-.23196	-18.26	0.000	18,708	0.3582
Waste management and remediation services	-.30467	-5.12	0.000	2,288	0.3054
Educational services	-.16449	-19.21	0.000	83,933	0.4234
Hospitals	**+.03789**	3.12	0.003	35,970	0.4046
Health care services, except hospitals	-.05492	-4.43	0.000	47,335	0.4126
Social assistance	-.22436	**-24.49**	0.000	14,362	0.4094
Arts, entertainment, and recreation	-.244907	-11.14	0.000	10,907	0.3080
Accommodation	-.19364	-8.18	0.000	7,732	0.3331
Food services and drinking places	-.16022	-14.67	0.000	24,458	0.2268
Private households	**-.02834**	**-0.89**	0.376	873	0.2404

- **Sum, There is some variation in the pay penalty by type of industry, between no penalty and as high as 50%, however most range from 15 to 40%.**

- **Penalties mainly cluster near the average of 25%. They range from 6% to 50% (hospitals only outlier).**

- **The pay penalty is well above average in several industries:**
  - **49% in Rental/leasing services and at 44% in Petroleum and coal.**

- **The pay penalty exceeds 40 percent in information services sand tech industries -- though smaller sized in employment – such as in Internet publishing, Broadcasting and in Motion picture and sound recording.**
  - **It is at 38% in Beverage and tobacco production, 36% in Publishing, 35% in Miscellaneous and non-specified manufacturing.**

- **Penalties are higher in Retail Trade, at 32 percent – an industry where 29 percent of employed usually work part time.**
  - **Within Retail, we will dig deeper into Clothing Stores, Grocery stores, and within the restaurant industry…**

- **The sole exception to a pay penalty is in hospitals, where there is a 3% pay premium, but in other health care industries there is a 6% pay penalty, and in hospitals there is no such premium if hours are less than 20 per week.**

- **Lower penalties might reflect greater wage compression generally in low wage industries,**
  - **Case in point: Private households garners only a 3% pay penalty.**

Part Time Pay Penalty Union versus Nonunion Workers: Do labor unions provide part time workers any reduction in the pay penalty?

Unions on average raise ALL members' earnings by 13.2 percent than a peer with similar education, occupation, and experience in a nonunionized workplace in the same sector, varying with the state of the business cycle, types of occupation and industry and **union** presence in labor markets over time (Bivens, et al 2017).

Unions' overall compensation plans may favor full-timers (Berg, et al 2014).

Finding—union coefficient itself: Unions deliver a slightly higher gain in hourly earnings for part timers than they do generally for all workers, at 15.5%.

--Thus, Unions serve to close the disparity in earnings even more so for part timers, on average.

Conclusions:

- Massive pooled data set, 2003-18 using CPS ORG's
  - picking up where Hirsch, 2005, ended: PT pay penalty is **higher** in more **recent** years
- Part time Pay Penalty is substantial (and somewhat higher than past)
  - Raw penalty, for usual hours being <35, = 53%
  - Adjusted for personal characteristics and hours = 29%
  - Adjusted or the above and workers' industry and occupation = 20%
  - Fixed effects range from no penalty ("stayers") to 13% (total "switchers")
  - Fixed effects estimations knocks down size effects of penalty substantially, which might reflect heterogeneity or selection into PT jobs
  - The part-time wage penalty is greater for those working part-time but wanting a full-time job, thus, a double penalty of fewer hours and less in wages
  - By range of hours, penalty nonlinearity – higher at lower hours, thus, PT Penalty better conceived as **an "hours penalty"** that sometime **mirrors** the "long hours **premium**"
  - Labor unions reduce the pay penalty for part timers, with a union pay premium, among part timers of 16%.

- To Do– Explore:
  - The substantial Variation in Gaps by Industry – how aligns with % density in industries, where PT is common or uncommon? Why Hospitals get a premium? Why Salaried get a premium”
  - Explanation that PT wage gap is mainly a linear “Short Hours” penalty
  - Full compensation difference/disadvantage include Benefit coverage probability, re: well being would include work schedules—more unstable and more unpredictable (EPI, forthcoming, 2019)
  - Is the rise in PTER (Glosser, Lale) post recession traceable in part to a higher penalty rate, which in turn, heightens the “preference” for FT hours (since the PT penalty is more accurately, a “short hours” penalty)?
  - Would improved PT Parity policies (e.g., ILO standards) reduce BOTH the pay penalty rate AND the PTER – i.e., PT working would become more for the underlying “noneconomic” reasons, so-called “voluntary”?

Policy Formulation

1) ACCESS to HOURS – first San Jose, NYC, OR…proposed in Chicago, NJ, passed in Philadelphia

2) **Pay Parity** for PT to comparable FT (ILO, etc.)(and prorated benefits coverage)

3) Establishing **"minimum hours"** requirements, **Washington, D.C., "guaranteed minimum hours"** law establishing a **30-hour minimum** workweek for janitors in large commercial buildings; Proposed in Jersey City, NJ, Montgomery County MD).

4) A **Lower Threshold for Overtime Premium** Pay for Hourly Paid Part Timers, at **35 hours** for part timers, to be owed overtime pay (Zukin and van Horn, 2015),

5) Right to Request a Flexible Working Arrangement, a modified Work Schedule, **including …additional shifts or hours**; changes in days of work or shift start and/or end times; **limitations on availability**; part-time employment with transition back to full time.