

Part Time Pay Penalties Persisting

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EXECUTIVE SUMMARY

- Part time employment fulfills an important matching role in the labor market, given many workers' preference for less than full time workweeks with many employers' demand for less than full time labor input for certain jobs
- Currently, 18 percent of those employed work less than what BLS defines as full-time hours – however, about one-fourth of part-timers express a preference for full time.
- Do part time workers in the US labor market earn less per hour than otherwise comparable full timers? If so, which workers, where, by how much and why?
- The pay disparity, or disadvantage for working part time workweeks, is estimated here with a large, pooled data set, using the Current Population Survey's (CPS) Outgoing Rotation Group (ORG)', from 2003 to 2018. It contains 688 thousand matched observations. The estimation is intended to replicate and update those from an earlier period, 1995-2002 (Hirsch, 2005). The earnings disparity is found to be greater in the more recent than previous period.
- The estimated log earnings models sequentially start with the unadjusted, Raw pay penalty for usually working part time hours, with state and year fixed effects -- which is 52%,
- The Partially Adjusted part-time penalty shows that workers earn 29.3 percent less per hour worked than other workers with similar demographic characteristics and education levels.
- The Fully Adjusted part-time wage penalty is somewhat smaller but still substantial, 19.8 percent, when the worker's industry and occupation as well as demographics and education are controlled. This suggests that there is a wage penalty for being relegated to certain lower paying sectors or job types dominated by part-time work.
- 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. This suggests that men pay a noticeably higher price for working part time, although women constitute almost 4 in 5 of those part time employed, so women are more likely to bear the brunt of the wage penalty albeit smaller in relative size.
- By race and gender, 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 likely reflects a combination of whites' advantage in wages at their full-time jobs along with a shared disadvantage when in a part time job.
- By reason for working part time, the part-time wage penalty is greater for those working part-time but wanting a full-time job, a double penalty of fewer hours and less in wages: those with reduced hours because of "slack work and business conditions" experienced a 22.3 percent wage penalty while those in part-time work because they could not find a full-time job experienced a 29.5 percent wage penalty. Those working part-time but did not indicate they want full-time work still experienced a wage penalty, 18.3 percent, though less of a penalty than those who were part-time 'for non-economic reasons.' Thus, by reason for working part time, working less than 35 hours involuntarily comes with a substantially larger pay penalty.
- The more voluntary the reason the smaller is 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.
- By number of weekly hours, the part time pay penalty reflects in large part a "shorter hours" penalty. 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. This suggests full time work is better conceived of working 40 or more hours, when it comes to pay.

- Labor unions reduce the pay penalty for part timers, with a union pay premium among part timers of 16%.
- By type of industry, there is some variation in the pay penalty size, with no penalty in only one of the 50 intermediate level industries, and as high as near 50% in one -- most range from 15% to 40% earnings disparity.
- 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 and 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 the employed usually work part time.
- Within Retail, in Clothing Stores, the pay penalty is as high as 49 percent for those working shorter hours and even 27 percent for those with hours between 35 and 39. In Grocery stores, the penalty is 38 percent, and varies from 25% up to 37 % as usual hours get shorter. Within the restaurant industry, the pay penalty is 16% (smaller largely because earnings include tips). However, the pay penalty is higher, 22 percent, among those who work fewer than 20 hours per week.
- The pay penalty is near the average in Waste management and remediation at 30%, at 29 percent in Chemicals manufacturing, 28 percent in Food manufacturing and in Internet service providers, 27% in Utilities, 25% in Finance, Real Estate, Repair and maintenance and in Wholesale trade, at 23% in Textile, apparel and leather manufacturing, in Administrative and support services and in Membership associations and organizations. 22% in Primary metals and fabricated metal products, in Paper and printing and in Arts, entertainment and recreation, 21% in Transportation and warehousing, 20 percent in Construction and in Insurance, 19% in Accommodation, in Professional and technical services and Management of companies and enterprises, and 18% in Telecommunications.
- In some industries, the pay penalty is lower than the average. It is 16% in Food services and drinking places. It is also 16% in Agriculture and in Educational services, in Machinery Manufacturing, and at 10 to 15% in Mining in Plastics and rubber products, Non-metallic minerals and in Furniture and Fixtures manufacturing, in Wood products, Transportation equipment and in Electrical and Appliance Manufacturing, and in Personal and laundry services.
- 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 pay penalty, on the order of 6%, 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, for example, employment in Private households garners only a 3% pay penalty.
- In Accommodations, working part has a 21% penalty, but a higher 24% among anyone working fewer than 30 hours; In Services to Buildings industry, there is an 18% penalty, but higher, 25%, among those in the 20-29 hours range.
- An individual fixed effects model, to replicate Hirsch (2005), using 1995-2002 CPS panel data—to try to identify a “Pure” pay penalty that considers all the possible unobserved differences between those working full time and part time. It focuses only on the subset in the sample who have changed job status between full time and part time--about 10% of the CPS matched sample, in both directions, over the course of a 12-month interval.
- When the worker a year later has moved to a different occupation and industry, arguably a pure fixed effect model because there are likely not in the same firm, there is still somewhat of a substantive penalty, albeit reduced -- about 12%. This is somewhat higher than found for the earlier period.
- Among just those hourly-paid (some with tips, commissions, bonuses and overtime pay), in the fixed effects model, when they have changed sector and job, the penalty is a substantial 13% reduced pay. However, salary paid workers actually experience effectively zero pay penalty if they have changed both occupations and industries.
- The size of the “unexplained” pay differential for part time working, especially when involuntary but even when it is voluntary, is sufficient to warrant policies and standards that would curb or prevent this widening disparity in earnings. Policies that would dis-incentivize hours reduction and over-reliance on part time job creation at the expense of full time -- and incentivize a transfer of hours to the involuntarily part timers who prefer full time jobs at longer hours. This would not only reduce the harm to part-timer well-being, but perhaps also the rate of non-labor force participation and the sacrifice made by workers who are trying to combine work activity with other responsibilities, such as caregiving, partial or phased retirement or schooling.

Introduction

Part time work is an essential component of the labor market for both employers and employees. For the latter, working part time can be both a blessing and a curse. It is more of a blessing if a part time job provides the incumbent worker with the number of work hours and schedule that meets their needs or preferences for working, without unduly sacrificing other aspects. Indeed, part time positions were initially created to integrate into the work force those who have a preference and ability to work full time hours is currently about 5.5 million. While this number has gradually declined since the start of the recovery in 2009, and the percent of those at work in the previous week who are involuntarily part time has dropped recently, below 4 percent of the work force, it remains still somewhat above the 4 million observed before the Great Recession [EPI, 2016]. Moreover, voluntary part time working has been increasing in the last couple of years, and remains above 20 million of the employed. Thus it is crucial to provide a fresh look at the relative pay rates of part-time work vis-à-vis full time, the extent to which there is a “pay penalty” for working part time and if so, to what may we attribute this? How much of this pay disadvantage reflects characteristics of how part time workers are treated vs. their own attributes? Which workers face bigger or smaller penalties and which actually might receive pay premiums? Have pay gaps between part time and full time jobs increased over time? Are there nuanced differences among part time workers, such as those who hold such jobs voluntarily vs. those who would prefer full time working, and between those whose hours are closer to the full time workweek vs. those with only very short weekly hours. Aside from pay gaps, what are the differences in various benefits coverage for part time jobs vs. full time? Why should we care a penalty in compensation for part timers? Finally, should and could something be done with public policy measures to address existing or growing pay and benefit gaps?¹ Given that part time jobs appears to be more prevalent, not only with some cyclical element following the recession (e.g., Kroll, 2011), but with an apparent structural change whereby there remains a greater contingent who would prefer a full time job, it is crucial to new re-visit the topic of part time work conditions.

The purpose of this report is to explore the current part time wage and benefits penalties, their nuances by type of worker, job, usual hours and reason for taking part time work, and explore what, if anything, could be done with policy to address the disadvantages of such jobs and incumbent workers, to the extent they occur. The part – time pay penalty consists of three main elements – hourly pay, benefits and social insurance coverage and the schedules and inadequacy of work hours.² The emphasis in the empirical exploration is on the first, which has been relatively underexplored in the US context and is in need of updating part time workers, while previous EPI reports have found that part time workers are more likely to face more variable, unpredictable and inadequate work hours, i.e., be underemployed (Golden, 2015b; 2016).

Being here to stay, it is crucial to provide a fresh look at the relative wage and benefit rates of part-time work vis-à-vis full time, the extent to which there is a “wage penalty” for working part time and to what may we attribute this? How much of this wage disadvantage reflects characteristics of how part time workers are treated vs. their personal attributes? Which workers face bigger (or no) penalties? Have wage gaps between part time and full time jobs decreased or increased over time? Are there nuanced differences among part time workers, such as those who hold such jobs for reasons of choice under constraint vs. those who would prefer full time working, and between those whose hours are closer to the full time workweek vs. those with only very short weekly hours?

The structure of this paper begins with a review of the existing literature and descriptive evidence on the meaning and measurement of part time compensation differentials. The second part replicates and updates a past definitive attempt to systematically measure the part time pay penalty. It finds some commonalities but also some new developments with data that ended 15 years ago, which suggest that the wage penalty has increased in size since then. The size of the wage penalty is reduced, but remains significantly negative, when netting out the full range of worker, job and individual characteristics, with both pooled cross sectional data and a matched sample, pooled, from 2002 through 2016. Moreover, the size of the pay penalty depends much on the reason for working part time, particularly if full time is preferred, and the distance of weekly hours from a full time workweek. There is an “hours penalty,” not just part time. There are race and gender differences. In addition, there remains a gulf in benefits coverage between part time and full time jobs, as revealed by several, available surveys of both employees and employers. Pay gap levels may be smaller for women, but there

¹ No national legislation has been introduced in the US since 16. H.R.3682, in the 104th Congress (1995-1996) *Part-Time and Temporary Workers Protection Act of 1996* Sponsored by Rep. Patricia Schroeder.

² Human capital investment such as training could be a fourth and job insecurity a fifth inherent disadvantage of part time jobs, which speaks to long run effects on earnings trajectories of part time job holders (e.g., Ferber and Waldfogel, 1998; Ferber and Green, 2005; Wolf, 2014; Paul, 2016; Messenger and Ray, 2016; Pedulla, 2016) and their job satisfaction (e.g., Wheatley, 2016). Voluntary part-time working, while not in school, has a positive effect on longer term earnings for women but not for men. In the medium term, part time working, for those who have been unemployed, might not be a useful bridge, pathway or stepping stone, since it takes longer to become full-time working, on balance (Kyyrä et al 2017).

are far more women than men engaged in part time working. Given how prevalent part time working is in the US labor market – 35 to 40 times larger than estimates of those working in the “gig”/on-demand economy garnering so much current attention, and that part time working remains elevated above its pre-recession level, primarily due to workers not finding full time opportunities,³ it is time to broadly re-consider policy. The economic well-being of part time workers could be much improved with policy protections and incentives that would encourage creation of more full time job opportunities. The size and distribution of these wage penalties should inform public policy measures to address existing or growing wage and benefit gaps for the incumbents of part time jobs.

Part Time Work and Pay – Why Should We Care?

As is clear from CPS surveys, which show over 20 million work part time for reasons that might be considered a kind of voluntary status, to combine work with other responsibilities or activities, provides workers a useful option between full time workweeks and no labor force commitment. Employers benefit from the partial commitment as well, to cover or extend their office, shop or opening hours, receive human capital that complements their full time work force, and have buffer stocks of employees to cushion their labor demand for unforeseen cyclical fluctuations. Employers also benefit from their short term cost savings, which might be driving a structural adjustment toward more reliance on part time positions, at least in several, growing sectors of the labor market (Golden, 2016; Valetta et al, 2020; Borowczyk-Martins and Lale, 2019a, 2019b).⁴ Moreover, the presence of part time working remains a considerable number and share of total employment [see Appendix A and B].

What is crucial is to distinguish involuntary from the more voluntary reasons for part time working, since the former have far more deleterious effects on workers than part time that is more voluntary (Glauber, 2013; Zukin and van Horn, 2015; Horemans, Marx and Nolan, 2016).⁵ Moreover, the proportion of part-time workers who are “primary earners” in their households has grown slowly, but steadily. They recently comprise almost 4 in 10 of all part-time workers, up substantially from earlier decades (Shaeffer, 2009). These part-time primary earners appear to face a relatively high risk of poverty and a risk of going without health insurance, compared to part timers who are secondary earners in the household. They seem to be a distinct group that is not highly correlated with either voluntary or involuntary part-time work.⁶ Nevertheless, “involuntary part-time” workers have considerably lower income streams than other workers (Glauber 2013). The median income for families in which women work part-time for involuntary reasons (\$36,000) was far lower than for women working part-time. Moreover, such underemployment tends to disproportionately burden certain labor force subgroups (Kler et al, 2017)--males, youth, Hispanics (Young, 2016), immigrants, and blue-collar job holders.

Regarding part-time working that is voluntary; Pew Research periodically tracks people’s preferences for part-time work. It asks respondents, “Considering everything, what would be the ideal situation for you — working full-time, working part-time, or not working at all outside the home?” The findings reveal the widespread desirability for part time work. Among women with at least one child under the age of 18, part-time has consistently been the top preference. Among mothers who currently work full-time, many (44 percent) would rather be working part-time. However, an almost equally high proportion of mothers who are not employed actually would prefer to be working part-time (22 percent who regard working full-time as ideal). This suggests a hidden underemployment, in addition to those who work part-time but desire full-time workweeks. In addition, interestingly, the share of mothers preferring full-time work increased sharply between 2007 and 2012 (from 20 percent to 32 percent). Mothers in the bottom half of the income scale are far more likely than more affluent mothers to prefer working full-time—40 percent of mothers with annual family incomes of less than \$50,000 said full-time work would be ideal, compared with 25 percent of mothers with incomes over \$50,000 (Wang 2013).⁷

Foundation and Literature: The Part Time Wage Differential

Labor economic theory provides a foundation regarding why employers may favor creation of jobs with part time hours, or conversely, fewer, in favor of more full time positions. On the demand side, a lower variable cost might lead employers hire more part timers, if the total compensation per hour worked is sufficiently significantly less than that for full timers’ (Carre and Tilly, 2012). On the other hand, there may be lower human capital among part time job incumbents, such as skills and experience, as compared to full timers, leading employers to curb the ratio of part time to full time jobs (Montgomery, 1988). The total administrative cost of having two part time rather than one full time job to oversee may not only be higher, but also higher per unit for part time jobs, thus,

³ Golden (2016).

⁴ Although frequently identified as a main culprit pushing employers to create more part time jobs, the cost of health benefits, at the state level, are not associated with the incidence of part time work in the state and were insignificant predictors of involuntary part time work (Valletta et al , 2020).

⁵ Past analysis of CPS data confirms that those classified as involuntary part-time workers indeed work part-time “involuntarily” (Stratton 1996).

⁶ Li and McCully (2016) confirm that part time for economic reasons closely track more general indicators of underemployment, in two other national surveys that included questions regarding preferred and actual weekly hours.

⁷ Furthermore, another recent survey, by *Working Mother* magazine, of only men, found that almost 60 percent of working fathers would choose part-time work if they could still have a meaningful and productive career only slightly higher than men without children at home.

incentivizing employers to hire fewer part timers. Employer preferences for the ratio of full time and part time jobs will depend on the ratio of fixed labor costs to the hourly wage rate (variable costs) (Montgomery and Cosgrove, 1993; Zeytinoglu, 1992; Hamermesh, 1996; Tilly 1996; Golden, 2015a). To the extent part-time provides a job amenity (e.g., schedule flexibility),⁸ and their fixed costs per hour are higher, any differential found for part time workers might reflect a traditional, equilibrium-compensating wage differential in hourly wages for part-time work, thus discounting it as a pure penalty (Blau and Kahn, 2017; Goldin, 2014; Friesan, 1997).

On the other hand, part time working might be more productive per hour, at least in medium-skilled service sector work, if there are fatigue effects in the quantity of output (if not necessarily quality) over the course of a day (Collewet and Sauermann, 2017). A higher productivity rate per hour, and thus higher marginal revenue product for an hour of part time work, suggests that employers might benefit from splitting work into two part time jobs. Indeed, Dutch firms with a large part-time employment share are relatively more productive--a 10% increase in the part-time share is associated with almost 5% higher productivity. However, this is attributable mainly to their ability to allocate the part-time force more efficiently across working days to meet the flow of demand (Künn-Nelen, et al 201x). Moreover, the higher the skill level of employees, the higher might be both the administrative costs and the relative productivity per hour, as well (Jepsen, et al, 2005). Thus, at least certain groups of part-timers generate “rents” for employers, either as relatively lower wages or relatively higher productivity among part-timers (Garnero, et al, 2014; Benton et al, 2017).

On the labor supply side, where voluntary, workers make a choice into part time employment at least in part to comply with the role(s) or identity to which they adhere; others choose to work part-time because they are unable to integrate the competing and incoherent claims made by the different roles to which they adhere (Russoa, 2012). If workers prefer part or full time hours, then “part time wage differentials can result from differences in labor supply” (Hirsch, 2005). Workers can be heterogeneous not only in skills, but also in preferences and job search. Workers with strong preferences, perhaps due to stages in their life cycle, for part time working, may be “willing to accept low wages” (Hirsch, 2005). Some use evidence that part time employment levels across virtually all countries correspond closely to the female share of the labor force. Nevertheless, differences in preferred hours are not a sufficient condition to produce a wage penalty for part time, if either part timers have identical skills and/or there are no fixed labor costs to employers -- wages would equalize as employers create a mix of jobs reflecting preferences of employees.

Thus, in sum, a wage differential arises for at least three reasons. One, when workers are not fungible (homogeneous) AND employers have preferences regarding how they schedule hours among workers.⁹ Two, a part time wage differential also can arise if workers are willing to take low paid part time jobs as a way of queuing for full time jobs with higher wages (Hirsch, 2005). This suggests an alternative, “occupational crowding model” is at work, where there is not only efficiency wage leading to higher pay for full time, but an enlarged supply of workers with preferences for fewer than full time hours (e.g., mothers, students). Third, when fixed costs per hour worked are higher for part time than full time, wage rates for the part timers might reflect an equalization of labor cost. The part time hourly wage penalty reflects a combination of possible factors (Messenger and Ray, 2015). The “gross” or “raw” pay gap is typically considered as the average pay differential between part time and full time workers in a given sample. Whether a wage premium or wage penalty is observed depends largely on whether employers share the “rents” with the job incumbent the greater relative productivity or lower costs per hour through a pay boost. There may be a pay premium for some and a pay penalty for others (Jepsen, et al, 2005). For example, part time work might command a premium if these two part time positions generate greater productivity than the one full time jobs sufficient to more than overcome the fixed costs. In addition, there may be a compensating wage differential necessarily developed to recruit and retain workers into part time positions, given its other adverse working conditions, in particular, its fewer or outright absence employee benefits, as well as undesirable schedule times or variability.

The size of the penalty or premium found is an empirical issue. There is mixed evidence, with quite wide range of estimates. Much of the research starts by estimating the “unadjusted,” or “raw” wage difference between part time and full time jobs or work per hour. This is an important first estimate because it relates most directly to workers’ choices in the labor market regarding hours of work and to consequences for their income. Estimations then typically adjust this raw differential for demographic and human capital factors such as age, experience in the labor market, education, etc., to get an “adjusted” penalty (or premium). This typically lessens the size of the penalty (Baffoe-Bonnie, 2004). Full-time workers possess more human capital and experience than part-timers, on average. In addition, labor market conditions such as unions and pension plans favor full-timers (Bivens et al 2017; Berg, et al 2014). The results indicate that the adjustment of the wage equations to reflect the above mentioned differences reduces the national wage differential between full-time and part-time workers by 10 percent, with much variation across regions and industries, where there is considerable variation in the full time vs. part time composition (Fallick, 1999). Studies within industries and occupations suggest there are part time penalties but small, when controlling for schooling, experience, occupation and establishment size (Hirsch, 2005).

⁸ For more direct indicators of “schedule flexibility,” in contrast to those used, see Golden (2009), Golden et al (2013) and Berg et al (2013).

⁹ Hirsch (2005) uses college towns to illustrate this, where students care very much about which hours of the day are scheduled, and their skills differ markedly from those demanded by employers for full timers.

Some then use panel data, to control for potential individual heterogeneity among part time and full time workers, using individual-fixed effects models (Hirsch, 2005; Booth and Ward, 2008). With US data (1994-95), for men, the raw wage penalty for part time working might be as high as a 67 percent penalty (O’Durchai, etal 2007). Among women, this was on the order of about 22 percent (Bardasi and Gornick, 2007), With somewhat later data, 1994-2002, Hirsch (2005) found a 37 percent penalty for men and about 20 percent for women, although he proceeds to make a series of adjustments that reduce this estimate considerably (see below). The pay penalty was as high as 22 to 26 percent in the UK (in 2001 data). About half of the pay gap, 13 percent among women, is “explained” by worker characteristics, but the remaining 3 to 10 percent (by gender) is unexplained, thus a more pure pay penalty (Manning and Petrongolo, 2008). With North American data, including Canada, a 12 percent pay premium is what is found, once standard controls for personal and job characteristics are included (Bardasi and Gornick, 2010). Within occupations, one study finds OLS finds almost a 9 percent wage penalty among workers in child care establishments, but only 7 percent among teacher aides and no more than 0 percent among teachers or among nurses, once instrumental variables or random effects estimations are conducted (Montgomery and Cosgrove, 1995; Hirsch, 1995). In caregiving jobs, being able to arrange part-time work is negatively associated with wages, i.e., care workers, on balance, trade-off wages for this type of job flexibility (Smith and Folbre, (2016). In jobs that have been outsourced – considered a form of “nonstandard” working as with part time –the outsourcing wage penalty ranged from 4% to 7% for janitors and from 8% to 24% for security guards (with similar findings on health benefits), and were not a reflection of their lower hours (or skill differences nor compensating differentials for higher benefits). Thus, there may be changes over time. For example, in pharmaceutical occupations, the pay penalty has been shrinking, attributable to the re-organizing in that industry (Goldin and Katz, 2014).

There may be some nuanced, important differences by hours of work, even among part time workers. Those whose hours were longer, near the full time workweek, were more productive per hour than those at much shorter weekly hours level, in Belgium (Garnero et al 2014). In particular, male part-timers received working more than 25 hours, whereas the share of female part-timers is associated with wage penalties. This is interpreted to reflect women’s different prime motive for reducing working hours and the types of part-time jobs available to them, or more to accommodate domestic constraints by downgrading to more flexible jobs. In Germany, accounting for all available observed as well as time-constant unobserved individual characteristics yields a wage reduction for part time workers of about 10 percent, with part-time working men subject to higher wage penalties than women (Wolf, 2014). Again, once differences in observed characteristics are taken into account, the reduction for “marginally” employed employees is far greater than those whose reduced working hours are covered with social security, especially among women. In contrast, male part-time work is frequently related to training programs and collectively negotiated reductions in hours that do not affect hourly pay (Garnero et al 2014).

Indeed, in the US, recent changes in the representation of gender and parents who are working part-time work is associated with a decline in the gender wage gap among parents and in the motherhood wage penalty, but also with an increase in the fatherhood wage premium (Weeden et al, 2016; Yu and Kuo, 2017). The part time wage gap in the US is actually smaller among women than men, which suggests that the general wage gap is much more a phenomenon among full time than part time workers (Hirsch, 2005: 544). In several European countries, part time jobs are flexible but insecure – while they help workers reconcile work and family life and increase women’s labour force participation, analysis of labor market transitions in Denmark, France, Italy, the Netherlands and Spain finds that being employed part time (mostly women) leaves one at higher risk of unemployment (Blázquez and Carcedo, 2014).

Indeed, the part time penalty may be part of general penalty for shorter work hours, the flipside of a premium for longer work hours -- while lower earners experience a wage penalty for fewer than 40 hours per week. (Goldin, 2016: Cha and Weeden 2014).¹⁰ Substantial penalties are found for working shorter hours per week or per year generally (Bertrand, Goldin and Katz, 2010), clearly for workers’ annual earnings but also for average hourly earnings (Blau and Kahn, 2017). To the degree part time work actually offers incumbents greater flexibility, there is an exponential return to greater current hours of work, in high-paying occupations (Goldin, 2014).

On the other hand, pay premia are found, for both genders, in Australia – particularly among their “casual” labor contracts, which in Australia explicitly lack long-term job security and other social insurance security protections (Campbell 2009). Findings of pay premium could reflect a combination of several possible sources—the lack of employee benefits, so cash in lieu, the variability of hours and thus weekly earnings among hourly self employed, the lower job security provided by part time positions. For example, the lack of benefits explains the entire pay premium found for workers on part time in South Africa (Posul and Muller, 2007). Similar findings occur with 2002 data from Australia (Rodgers 2004). With just the pooled data, women face a very small wage penalty of one percent (Booth and Ward, 2008). However, when controlling for unobserved individual heterogeneity (fixed effects models), using four waves of a panel survey, part-time men and women in Australia typically earn an hourly pay premium over those in full-time (Booth and Ward, 2008). This finding survives many robustness checks, such as removing very short hours part timers and also those

¹⁰ While in most occupations, this penalty is not related to gender, or is even greater for part-time men than women (Pedulla, 2016), because women are far more likely to work fewer paid hours than men (Boushey and Glynn, 2016; Blau and Kahn, 2017), they experience this pay penalty more commonly than do men.

working very close to the cut off point of 35 hours, who might have been mis-reported either as full time or as part time. The size of the penalty varies for both genders somewhat with its interaction with being on a “casual” labor contract, which comes with no pension benefits or longer term job security. Because of the consistent premium found, on the order of 8 to 15 percent, they conclude that there is self selection into part time employment. This follows the procedural methodology employed by Hirsch (2005). Fixed-effects panel estimates also find that working part-time in Germany yields more a pay premium than penalty (Wolf, 2014).

In contrast, wage differences between part-time and full-time workers are small in Norway (Hardoy and Schøne, 2006). Thus, there is no evidence of systematic selection bias, suggesting there is little systematic differences between part-time and full-time workers regarding the selection process. They attribute the lack of difference in earnings capacity to the 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. Norway thus suggests the importance of an institutional setting characterized by relatively strong employment protection, for both part-time workers and full-time workers. Partly as a consequence of this, a large proportion of Norwegian women are working part-time. Institutions help shape the penalty or premium outcomes in a country (McGinnity & McManus, 2007). Similarly, estimating a wage equation using a random effects model, capturing the employment history and dynamic choice of employment status, controlling for the institutional context, with panel data on German workers, finds that working part-time with a relatively small number of weekly hours has a large causal effect on current wages, whereas more extensive part-time work does not reduce current wages at all (although both lead to negative longer-term wage effects (Paul, 2016).

A study of women's part-time work and wage penalties, using panel data and fixed-effects wage estimation, find the smallest penalties for part-time employment where female labor force participation rates are lowest (Germany). The United States has steep penalties for part-time work, as does Britain, but part-time work is much more prevalent in Britain. Thus, the combination of national family policy, welfare state and labor market structures jointly determine the financial consequences associated with part time working. Indeed, other developed countries have surpassed the US in higher rates of women and mothers' labor force participation in part due to policies and institutions that encourage and support working while having a family (Blau and Kahn, 2013). The implication is that if there is a pay penalty found, it might be logically smaller for those groups that have a relatively higher preference for working part time – mothers of young children, students, retirees, etc. Thus, the degree of voluntariness may play a role, for example, explaining why the penalty may be larger for those who are less likely to prefer part time working, e.g., men. In addition, it may be smaller for those who work near a full time workweek, however that cut off or threshold is defined.¹¹ Moreover, the size of a penalty or premium might vary by industry sector. Finally, a penalty also may be smaller, if not an outright premium, for those compensated as salaried as opposed to hourly paid. No previous study has focused on the degree of voluntariness of taking or holding a part time job, which may be associated with different compensating differentials or some of the other reasons for a penalty.

The main aim of the pivotal Hirsch (2005) study was to re-test Blank's (1990, 1998) findings with earlier PSID panel and March CPS data (1988, for year 1987), which tracked workers transitions moving in and out of part time employment. The part time penalty estimates were found to be sizable – for men 26% and for women, 19%, using the single cross sectional data. Then controlling for “unmeasured skill differences,” using two methods to account for the potential self-selection (endogeneity) into part time status, found that estimates were highly sensitive to methods. For example, the estimate using ordinary least squares (OLS) went from an average wage penalty of 21 percent to 6 percent using an instrumental variables (IV) method. However, for men it switched from about a 30 percent penalty to an 82 percent premium, with huge penalties for women. However, the selection model found wage advantages for women, on the order of a 17 percent premium for part time, but a disadvantage for men, an 18 percent penalty. The vast differences suggest that “unmeasured job heterogeneity” is also likely important, with key differences across occupations.¹² Without demographic and work controls, in the full sample, the raw wage penalty, with no controls, is -26% women; -49% men. With the full battery of typical control variables (entered sequentially, are: personal and location variables; industry dummies, then occupation), the wage penalty found is -10% for women and -17% for men (or 9 and 19 log points difference, respectively) (Hirsch, 2005).

Hirsch (2005), however, then stresses this importance of the workers' “unobservables” (unmeasured person-specific skills and tastes characteristics) as an important determinant of part time wage difference. He takes advantage the very large CPS ORG earnings files, Sept 1995 through December 2002, and its panel feature, allowing two observations per worker available in the CPS, matching individuals exactly ONE YEAR apart, starting with Sept 1995-96 and ending with December 2001-02. The empirical technique employed is to estimate the wage gap between full and part time, starting with part time status just included in the log wage equation in a giant pooled cross section of data. Control variables (standard): experience, education, marital status, race/ethnic, region, metro

¹¹ See Booth and Wood (2008), Baffoe-Bonnie and Gyapong (2017) for the sensitivity of wage differential estimates to the definition of the full time part time cut off point.

¹² The substantially larger wage penalty among men than for women is consistent with the 25% wage penalty for men who cut their work week from 40 to 20 hours, at retirement ages, but no such effect among women at the same ages (Aaronson and , 2004).

size, union, private/public/nonprofit; industry, occupation, and Year...plus state unemployment rate and log employment changes using 3-month averages centered on survey month. Like Hirsch, we experiment with the variable representing part time status – this year vs. one year ago. Hirsch finds larger negative coefficients on part time working in the prior than in the current year. We add a comparison regarding whether the worker's status is "usually part time," or "actually part time," where the latter is simply that they were both "at work" the previous week of the survey and they worked 34 or fewer hours that week.

While Hirsch (2005) decidedly attempts neither to directly model for selection into part time employment, nor to strictly identify the causal impact of working part time on wage rates, he does attempt to control for the possibly unobserved difference between part-time and full time job incumbents. While the dependent variable is still "log wage," with the panel data, it becomes constructed as the "Wage Change" between period t and $t-1$. The sample is restricted to those who changed their status from full time to part time (or the reverse, from full time to part time, which is arguably symmetrical). He deploys the CPS ORG by matching individuals to exactly 12 months prior (despite potential false matches).¹³ To accomplish the fixed effects estimates, he 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, and 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. The assumption is that fixed effects will be small, because most of the "unmeasured skill differences" (part of acquired human capital) between workers will be captured by their prior status part time (or full time) status. The fixed effect estimator will be the observed coefficient on the change in PT status, between those who are "switching to/from PT status" vs. those who remain either FT or PT employees (though "measurement error in change variables may bias downward that Coefficient).

One major challenge is that only about one-tenth of the CPS sample changed into, or out of, part time status. However, in the CPS, this still yields more than 8 thousand observations. In addition, a bit more than half (5/8) of these changed either or both their industry and/or occupation, whereas the other (3/8) of "changers" remained in the same classification. Hirsch then separates out those who "changed" either industry or occupation and those who changed both, so that there are three groups to contrast to those changers who stayed in same occupation and industry. Hirsch's hypothesis is that "leavers" are different. With perfect fixed effects, coefficients will shrink naturally, if there's imperfect matching. Indeed, he finds that fixed effects account for virtually all the pay penalty estimates observed in the pooled entire sample (erasing the 10 percent and 17 percent observed pay penalties, for women and men respectively.) The one, crucial exception is that there is a pay penalty, of about 7 percent, found for those who changed status not only from full time to part time (or vice versa), but also changed both industry and occupation type.¹⁴

Model, Data and Method

Our empirical strategy is to replicate what Hirsch (2005) had generated with the CPS ORG sample with 1995 to 2002 data, with updated data from 2003 through 2018.¹⁵ We go a few steps further, however, by sub-dividing the sample by those who are paid hourly wages (plus those who also get tips) vs. those who are paid salaries (annual, monthly or weekly).¹⁶ Also, we distinguish by gender but also pool genders for an overall estimate.¹⁷ Most importantly, we estimate the raw, controlled for and matched wage penalties by reason for working part time. We break out part time (PT) into 3 types -- PTNER (Noneconomic, "voluntary" reasons; and Part Time for Economic (involuntary) reasons ("PTER") --PTER-SWBC (slack work or business conditions); PTER-COFPT. The hypothesis is that a change toward any part time job will have larger negative effect (penalty) for involuntary than voluntary reasons. For symmetry, a change from part time to full time is expected to have a larger wage premium for PTNER (voluntary) than for PTER (involuntary) reasons. Furthermore, we have a focus on industry, with an eye toward discerning differences where there is a relatively higher

¹³ It excludes: those who cannot be matched across the 2 years, either because in one of the years they were: students; self-employed rather than wage/salary; at the top code for weekly earnings (more than \$150/hour, less than \$2/hour); have imputed weekly hours of work (i.e., are salaried?) - "this is a large number..."38% of all workers, similar for men and women...those who moved out of the household, or whole household moved.

¹⁴ Even if fixed effects models are ideal, there are flaws about looking only at those who are switchers – the reasons for switching out of PT or into PT are underexplored by Hirsch. Hirsch then goes on to use O*Net observations, regarding the character of occupations, to knock down further the raw and controlled estimates of the wage penalties. It is open to interpretation why changers experienced a pay penalty, while others' is eliminated.

¹⁵ The matching is accomplished using IPUMS identifiers, which results in slightly different sample sizes than what Hirsch used.

¹⁶ Computing the "wage rate" is "usual weekly earnings on the primary job" (includes OT, tips, bonuses...) divided by "usual hours worked per week."

¹⁷ The validity of our model is established by replicating what Hirsch found using the 1995-2002 data. 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, with some exclusions (see above) that reduce the sample size further. Total sample size is 688 thousand, with 344 thousand pairs of matches (slightly higher men)." The Full CPS-ORG sample," all years, has $n = 398.8k$ women plus $407.1k$ men = 806 thousand.

presence of part time jobs (Bishow, 2015) – with as much as half of all jobs, which is in Accommodation/ Food Services, Arts/Entertainment/Recreation and in Retail Trade. While Hirsch does, to his credit, distinguish wage effects by shorter or longer part time working hours--Part Time [1-20; 21-34] and among Full time, too [35-39, 40; 41-49, 50+], we subdivide part time further and use 40 hours as the omitted category. Finally, we likewise take advantage of the panel aspect of observations in the monthly CPS, to try to account for individual fixed effects, using a “matched sample.” We contrast the effect of part time working in the previous versus the current year, in other words, after 12-months. We replace with “change in hours” variable for those transitioning between full time and part time (PT) or vice versa –subdivide as “small” or “large” change, with median change as the dividing point.

All multi-variate regressions use logarithm of the hourly earnings as the dependent variable and are weighted using the ORG sample weights. The regressions are on the same dependent variable with the same controls and same (hierarchical approach). A standard wage model is estimated, with X a vector of personal, human capital and work characteristics.

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

The total sample size applied in these estimations, pooled within the period 2003-2018, is 1,756,419 individual observations. The sample consists of hourly and non-hourly wage earners, ages 16+, in the 2003-2018 EPI extracts of the CPS-Outgoing Rotation (ORG) files (since the regular monthly CPS does not ask about earnings, only in their out-going month). Observations with allocated hourly wages or weekly earnings are excluded, as are all observations with hourly wages less than \$2.00 or more than \$150.00 per hour (as in Hirsch, 2005). All standard errors are clustered by state. The **dependent variable is the log of the wage earnings** for a worker. Hourly wages are defined first as the straight time wage for non-tipped workers (observations with allocated values are dropped); when that value does not exist, hourly wages are weekly earnings divided by usual hours (observations with allocated values for either weekly earnings or usual hours are dropped); for workers with varying hours, weekly earnings divided by last week’s hours (observations with allocated values for either weekly earnings or last week’s hours are dropped). The key independent variable is the part time work (PT) status of the individual. Part-time status is defined as working less than 35 hours per week as measured by **usual** hours. Observations with allocated hours worked are dropped. We use the Basic CPS hourly earnings question, even though in the ORG, those employed are asked about hours per week. We define “part time” by using the “usual hours at your main job,” as Hirsch (2005) does.¹⁸ For workers with varying hours, last week’s hours are used for the 35-hour cutoff (in one’s primary job), using “hours last week.” 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. All regressions use logarithm of the hourly wage as the outcome and are weighted using the ORG sample weights. There are 14 years and 51 state fixed effects. In the final step, we estimate a fixed effects model, using the sub-sample that switched between part time and full time job status over the period of the CPS panel.

First, the models are run with the entire sample of all workers, with no Controls, except for the 15 years and 51 state fixed effects. Then, sequentially adding controls, first the set of demographic and work characteristics and then adding industry and occupation controls, to get the “adjusted” estimates. We break down the part time penalty by types of workers by race and gender and the type of part-time work (e.g. non-economic and economic reasons), then add industry controls.

Part Time Wage Penalty Empirical Tests: Findings for Log Earnings Model, with 2003-2018 CPS ORG Data

We distinguish four different measurements of the wage gap. The first is the “gross” or “raw” wage gap—a simple comparison of part-time and full-time hourly wages — is typically considered as the average wage differential between part time and full time workers in a given sample. The size of the penalty or premium found is an empirical issue. There is mixed evidence, with quite wide range of estimates. Much of the research starts by estimating the “unadjusted,” or “raw” wage difference between part time and full time jobs or work per hour. This is an important first estimate because it relates most directly to workers’ choices in the labor market regarding hours of work and to consequences for their income. Estimations then typically adjust this raw differential for demographic and human capital factors such as age, experience in the labor market, education, etc., to get an “adjusted” penalty (or premium). This typically lessens the size of the penalty, by controlling for full-time workers possessing more experience and education than part-timers, on average.¹⁹ In addition, full-timers tend to have better benefits, like pensions, and be represented by unions.

¹⁸ Hirsch used the Basic CPS rather than ORG “usual” hours question. We substitute the answer regarding “usual hours” in the ORG with the same question in the basic CPS, to observe consistency. We also substitute the actual hours worked in the previous week being fewer than 35, and contrast. Finally, we used the “usually work part time” question, as a dummy variable, to contrast to “usual hours” being fewer or more than 35.

¹⁹ Baffoe-Bonnie, 2004.

We test for the following questions – the extent to which the estimated size of the part time wage penalty is different:

- 1) in size as it was in the earlier period, ending in 2002, as a raw or adjusted wage gap. The “raw” wage gap in wage levels, with just state or year fixed effects excluded and then included, clearly is expected to be largest.
- 2) than the “Adjusted” penalty, with the model first, “partially,” controlling for all personal and demographic characteristics, education, location (region, SMSA), union status and private vs. government/nonprofit sector, then “fully,” controlling for workers’ industry and occupational classification.
- 3) by race and gender and its combinations, although part time work is disproportionately female.
- 4) between relatively shorter versus longer part time hours per week, and economic versus non-economic reasons for working part time weekly hours. by the non-economic versus economic motivations for working part time hours.
- 5) by individuals’ industry of employment, perhaps where part time jobs are more prevalent or full time pay rates are high.
- 6) when focusing on just those 10% who have switched between part time and full time job status, into a different industry and occupation, to try to capture a “pure” pay penalty that controls for the unobserved heterogeneity between part time and full time workers – and focusing on those in hourly paid more than salaried workers moving between part time and full time employment.

The Unadjusted Wage Penalty for Part Time Work

Part time jobs, on average, over the period 2003 to 2018, average 52.4 percent less wages per hour, vis-à-vis working full time. When factoring in just the effects of location (States) and state of the economy in sub periods (year), the ‘Raw’ wage penalty is 53.2 percent (see **Table 1**) This represents a substantial size reduction in absolute earnings per hour. This suggests that part timers earn less than 50 cents per hour on the dollar earned by their full time worker counterparts. To put in perspective, the order of magnitude is over twice the size of the raw gender gap in the US.²⁰ Furthermore, this represents a marked increase in the size of the unadjusted wage penalty from 1994-2002, which was on the order of 33 percent--between the 46 percent for men and 22 percent for women (Hirsch, 2005).

While the Raw Wage Penalty for working part time is a massive one, how much of this represents different qualities of part time and full time workers, such as their age (a proxy for work experience) or education levels (a proxy for skills brought to a job)? Because of the many different, possible characteristics of workers, that are observable in the CPS, we next measure the “Adjusted” wage penalty for working part-time vs. full-time. Controlling for workers’ demographic and “human capital” (i.e., 16 educational) level characteristics is arguably a more meaningful measure of the penalty experienced by a given worker for part time working, and is the most common, accepted way of measuring it with large, representative surveys in the US and other countries.²¹ The “Partially Adjusted Wage Penalty” estimates control for the “observable” differences among workers in their personal/demographic and education features, but also their location (region, SMSA residence); union status; and, government or nonprofit sector employment.

The Partially Adjusted Wage Penalty, controlling for workers’ demographic characteristics and education level, is 29.3 percent (see **Table 1**). So, the inclusion of demographic and education controls “knocks down” the size of the wage penalty for usually working part time hours, as expected, but this “partially adjusted wage penalty” remains substantial. This means that otherwise comparable workers who work usually work part time hours earn almost 30 percent less than their full-time working counterparts. This is higher than the wage differential found for the 1994-2002 era, which was closer to 24 percent (18 percent for women, 33 percent for men).

The Fully Adjusted Wage Penalty, which controls also for the worker’s industry and occupation in which they are employed, is 19.8 percent. This suggests that part-timers get paid about 20 percent less than otherwise comparable full-timers simply because they are in part time jobs, independent of whatever occupation and industry they work in. Thus, about one-third of the only partially adjusted wage gap is attributable to part time workers being employed in certain lower paying sectors or job types. Nevertheless, two-thirds of the wage gap is not explained by their industry or occupation of employment. In the earlier period, “measurable” characteristics accounted for 60 percent of the raw wage penalty (Hirsch, 2005). The fully adjusted wage penalty for part-timers, is strikingly higher recently – almost 20 percent versus less than 15 percent (19 percent for men, 9 percent for women) in the earlier, 1995-2002 period.

²⁰ Blau and Kahn, 2017; Yu and Kuo, 2017; Weeden et al 2016; Goldin, 2014; Matteazzi et al, 2014; Leslie et al, 2012; Harkness and Waldfogel, 2003.

²¹ Controls for age show that there is a significant positive effect of age on wages, but little influence of the exponentials. That is to say, earnings rise with age, but neither more nor less than proportionally. In unreported results, the size of the penalty for working “usual part time” is contrasted briefly to measuring part time with workers’ “actual” hours last week being shorter than 35. The latter display somewhat lower pay penalties, which can be attributed to “actual” hours including many full time workers who worked fewer than 35 hours the previous week because of an absence.

Part-time Wage Penalties by Race and by Gender

Within the 19.8 percent, fully adjusted wage gap, there are there notable differences by workers' race or ethnicity in **Table 2**. For whites, the penalty is 20.7 percent, a tick higher than the average, on par with the 20.2 percent penalty for Blacks. The wage gap is just under 15 percent for Hispanic-Americans, or about three-fourths of the overall. Thus, the penalty for part time working appears to be due to the part time job itself, experienced by all incumbents across racial/ethnic groups, with only slight differences in size.²²

Table 2 breaks down the overall and race results by gender. Women experience a substantial wage penalty for working part time hours of just under 16 percent. For men, it is substantially larger; the wage penalty being over 25 percent. Again, these differentials are somewhat greater than those found in the earlier period, which were 11 percent for women and 22 percent for men (Hirsch, 2015). While smaller in size, the scope and the impact of working part-time is greater for women than men, even though the actual size of the part-time wage penalty is larger for men than women. This is because women are twice as likely to work part time as men, 25.8 percent of all female workers are part time as compared to 12.7 percent of all male workers.

Table 3 shows the gender and race distribution of part-time working, by reason, and illustrates the incidence of the part-time pay gap among workers. By gender, it shows that women are more likely to work part-time hours generally, both noneconomic and economic reasons. Women comprise 50.7 percent of part-time workers, in contrast to 42.8 percent of full time workers, whereas men are more likely to work full time hours. Hispanic and black women are both more likely to be working full time than part time (both for noneconomic and economic reasons). By race/ethnicity alone, Blacks and Hispanics are slightly less likely than others to be working part-time, thus more likely working full-time. Nevertheless, Blacks and Hispanics are more likely to be working part time for the noneconomic (e.g., family related) reasons. Hispanics constitute 24.9 percent of all those working part-time for non-economics reasons, in contrast to being only 16.9 percent of all those at work. Broken by gender and race, it is revealed that the latter is due mainly to Black men disproportionately working part-time for the non-economic reasons—comprising 7.9 percent versus 5.8 percent of all those at work, and Hispanic men making up 13.2 percent of part-time working for non-economic reasons while being 9.7 percent of all at work. Because both Black and Hispanic men are more likely than women to be working full-time than part-time, and for non-economic than economic reasons, women of color appear to bear a disproportionate brunt of the part time earnings penalty.

Earnings Disparity by Reason for Working Part Time

In the CPS, the employed who report “usually” working fewer than 35 hours are asked explicitly, *What Is Your Main Reason for Working Part-Time?* The responses are grouped by BLS into 10 different categories of responses: 1. Slack Work/Business Conditions (SWBC); 2. Could Only Find Part-Time Work (COPFPT); 3. Seasonal Work or Between Jobs; 4 Child Care Problems; 5 Other Family/Personal Obligations; 6 Health/Medical Limitations; 7 School/Training; 8 Retired/Social Security Limit On Earnings; 9 Full-Time Workweek Is Less Than 35 Hours; 10 Other.

When broken out into the 3 categories of part time for economic reasons (“involuntary”) and the 2 categories of non-economic reasons (“voluntary”), we find some notable differences around the average 26 percent wage penalty, see **Table 1** (above). There are clearly differences in the part-time wage penalties based on the reason a worker works part-time. It is common to characterize the reasons for working fewer than 35 hours per week, with the division between “economic” and “noneconomic” reasons whether or not they would prefer full time work were it not for these noneconomic reasons.²³ In the CPS, the employed who report “usually” working fewer than 35 hours are asked, *What is your main reason for working part-time?* The responses are grouped by BLS into 10 different categories of responses. The main two categories within “part-time for economic reasons” are those working part time because of Slack Work or Business Conditions (SWBC) and Could Only Find Part-Time Work (COPFPT). Others, besides those working seasonal jobs, are characterized by the BLS as “part-time for noneconomic reasons.” Those working part-time for non-economic reasons includes workers, disproportionately women, who seek part-time work more by choice, but under the constraint that they might have little access to any supports for child care, sick leaves, and other social or family obligations that, if supported more, would help enable them to work full-time hours. Thus, if one works part-time hours on a regular basis because of “childcare problems” or “other family/personal obligations,” then BLS considers that one works part-time “for non-economic reasons.”

²³ Thus, workers are provided three separate chances in the CPS to demonstrate that their part time hours are truly “involuntary.” This includes those who did not get asked the question of whether or not they wanted full time—about three-fifths have multiple jobs and thus aren’t asked about their “reason” for being part time; another non-negligible share of them have hours vary. Another one-fifth’s job is considered full time though their workweek is, e.g., only 32 hours while another share say their usual hours are part time but ‘regular hours are “full time” – thus their main job is part time but their hours are 35 or greater because they have multiple part time jobs. Finally, there are those who say their main job is part time but could be holding another job that have full time hours.

The results in **Table 1** show that those working part time for economic reasons suffer a greater wage penalty. When working fewer than 35 hours for “economic reasons, such as “slack work and business conditions,” the fully adjusted wage penalty is 22.3 percent. However, those working part time because they have only been able to find part time work, there is a considerably higher penalty, at 29.5 percent. In contrast, those working part time for ‘non-economic’ reasons, face a wage penalty of 18.3 percent, smaller in size than that faced by ‘economic’ part timers. Thus, there is a gradation apparent, that the more employer-side determined is the part time work, the larger is the wage penalty. This means that workers who work part time but want full time are not only hours-constrained underemployed, but also suffer even lower relative hourly earnings rates among all part time workers. This finding is not consistent with a compensating wage differential theory, which would imply that for those whose working shorter hours as a personal choice should be more willing to sacrifice pay. Those who are part-time for economic reasons, in post-recession years, increasingly comprised of those who settle for part time jobs in lieu of full time, rising to constitute one-third of the total among all (ten) reasons provided for working fewer than 35 hours, i.e., part time (Golden, 2016; Glosser and Golden, 2018).

The Part-time Wage Penalty by Weekly Hours Status

Do weekly hours of work matter for the size of the pay penalty? Is working part time at least in part more of more general penalty for fewer work hours, i.e., a premium for long work hours? The answer to both these questions appear to be, “yes.” When broken out by four sub-ranges of weekly hours (more than by Hirsch, 2005), there appears to be a quite smooth gradient to the part time work hours penalty.²⁴ If working below 19 hours per week usually.²⁵ **Table 4** shows that the pay penalty appears to be the greatest. Relatively shorter hours workers received a 30 penalty for being part time. For working 20 to 29 hours, the penalty is smaller but not much – 28 percent. Usually working hours in the 30 to 34 hours range yields lower but still substantial penalties, of 22.2 percent. While only half the latter in size, working beyond 35 but less than 39 hours also experiences a penalty vis-à-vis usually others – an 11.4 percent penalty. Thus, in addition to a part time pay penalty, there appears to be an “hours penalty” within part time working.²⁶

Indeed, findings regarding the size of the wage penalty by the length of workweeks (also Hirsch, 2005), reveals that the part time penalty is in large part, more of a more penalty for fewer work hours. When broken out by sub-ranges of weekly hours there appears to be an hours gradient to the part time wage penalty. Working 20 or fewer hours has the largest penalty, although not much larger than working 20-29, but larger than in the 30-34 hours range. However, even when working beyond 35, but less than 39 hours, there is some penalty vis-à-vis those usually working 40. Thus, there appears to be an “hours-related wage penalty” within part time jobs.²⁷ Moreover, if BLS’s definition of what constitutes “full time” (35 or more) were changed to the more legal and normative “standard” workweek of 40 hours, the impact of the wage penalty would be more widespread, given the millions working 35 to 39 hours.

Part time Pay Penalty by Worker’s Industry of Employment and Detailed Industries of Interest, 2003-2017 CPS

Figure 1 shows the distribution of part time employment by major industry. Clearly, the distribution of part time is somewhat more concentrated in some industries more than others (See Appendix C, Table 9). However, it is at least 10 percent in all but one industry, when measured as the percent of total number at work and includes both those who usually work part time and full time. Thus, while it might matter more in Retail/Wholesale Trade, Leisure/Hospitality and Services such as education, health and private households, the pay penalty for part timers matters in virtually every sector. Part time working is notably higher in Leisure and hospitality; Private households services and in Wholesale and retail trade; three sectors where the part time wage penalty may be of substance, at least at the aggregate level and when measured by working part time hours last week

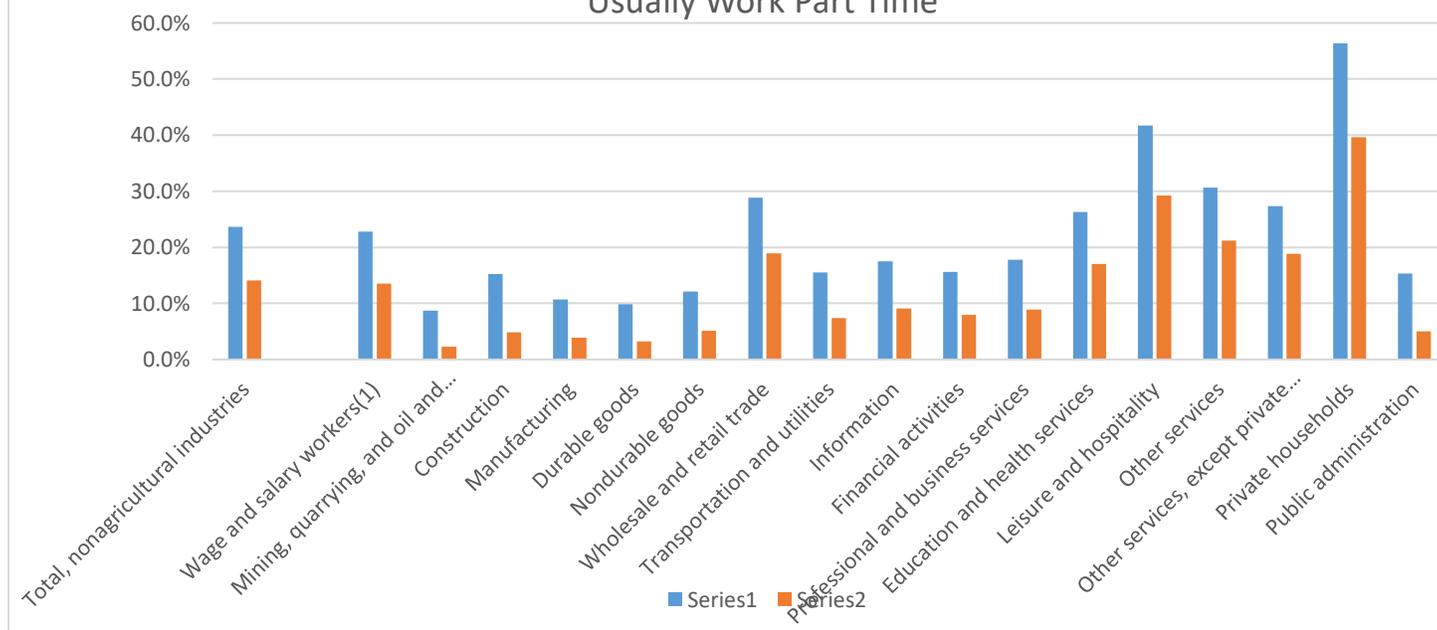
²⁴ The “hours vary” response to the employed’s question regarding their “usual hours” -- which constitutes about 5 percent of the CPS but over 10 percent of those with part time work, are not included. Future research should add hours vary variable into ln w equation – as separate variable dummy – or be proxied with their “actual” hours in the previous week. Moreover, perhaps employers desire more hours from their lower wage part time employees than those workers’ preferred hours (Hirsch, 2005: p. 527), thus making some involuntary part time workers more underemployed than others, perhaps in the shortest hours bracket.

²⁵ The cutoff of 20 hours was chosen because many employers face certain state unemployment insurance and pension rules if employees average 20 or more hours per week. The next cutoff of 29 was chosen because of employer incentives to keep part time employees’ hours underneath the 30 hours threshold of the Affordable Care Act’s Shared Responsibility provision for inclusion for coverage under their private health insurance plan. The next range up to 34 makes it consistent with the BLS’s definition of what constitutes “full time” working, while the 35 to 39 range considers more expansively the notion of part time, to see if there are penalties for anyone working shorter than the commonly worked, legal and normative “standard” workweek of 40 hours.

²⁶ This suggests full time work is best conceived of 40 or more hours, when it comes to pay, since working 35 to 39 hours appears to be more of a hybrid between full time and part time working, not entirely resembling full time work at 40 hours or above.

²⁷ This also suggests full time work is likely better conceived of 40 or more hours, when it comes to pay, since working 35 to 39 hours appears to be more of a hybrid between full time and part time working, not entirely resembling full time work at 40 hours or above.

Figure 1: By Major Industry, As % of total at work, Worked 1-34 Hours or Usually Work Part Time



Does the part time wage gap itself vary by industry? Is there a pay premium or at least no penalty in some industries and huge penalties in others? The answer is yes, there is variation. When conducting log earnings regressions for part time workers, with controls for personal characteristics, replacing the major with the intermediate industry, the coefficients on the latter All but one industry, the pay penalty falls in the range from 6 to 50 percent (see **Table 5**). However, the size of the penalty mainly clusters near the average of 25 percent (using the CPS ORG 2003–2017 only), and virtually all range from 15 to 40 percent.²⁸

The pay penalty is also well above average in the detailed industry where part time work is most prevalent -- in Retail Trade—which is at 32 percent. In several industries, the pay penalty is above that in Retail, although never any more than twice. It is over 49% in Rental and leasing services, at 46% in Motion picture and sound recording and in Other Information services, 45% in Internet publishing and broadcasting (though sample size is not large), 44% in Petroleum and coal, 38% in Beverage and tobacco products, 36% in Publishing, 35% in Miscellaneous/non-specified manufacturing. In other industries, the penalty is at least somewhat above the average, such as the Broadcasting and Waste management and remediation at 30 percent, and 29 percent in Chemicals manufacturing,

In many industries, the pay penalty is right near the average. It is at 28 percent in Food manufacturing, and in Internet service providers. It is at 27% in Utilities, 25 percent in Finance, Real Estate, Repair and maintenance and in Wholesale trade, 23 percent in Textile, apparel and leather manufacturing, in Administrative and support services and in Membership associations and organizations. In some other industries, it is just slightly below the average. It is 22 percent in Primary metals and fabricated metal products, in Paper and printing, and in Arts, entertainment and recreation. It is also 21 percent in Transportation and warehousing, 20 percent in Construction and in Insurance, 19 percent in Accommodation, in Professional and technical services and in Management of companies and enterprises, and is 18 percent in Telecommunications.

In some industries, the pay penalty is noteworthy, but lower than the average. It is 16 percent in Food services and drinking places, as well as that in Agriculture and in Educational services and in Machinery Manufacturing The penalty is 15 percent in Mining and at 14 percent in Plastics and rubber products and in Non-metallic minerals and in Furniture and Fixtures manufacturing. It is at 11 percent in Wood products, Transportation equipment and in Electrical and Appliance Manufacturing, and at 10 percent in Personal and laundry services. Employment in Private households garners only a 3% pay penalty in contrast to working full time hours.

The sole exception among all industries is part-timer pay is in hospitals –where there is a 3% pay premium. However, in health care industries other than hospitals, there is somewhat of a penalty, of 6 percent – not overly large negative, but it suggests there is something unique about working part time in hospitals over and above than in health services industries more generally. The lower

²⁸ In 5 of the intermediate level industries, the total sample size was less than one thousand, and are thus not emphasized -- Forestry, logging, fishing, hunting, and trapping ; Motion picture and sound recording industries; Internet service providers and data processing services; Management of companies and enterprises; and, Private households

penalties in certain sectors might reflect greater wage compression generally in those industries, in contrast to a wider pay disparity in other industries, particularly outside of health care.

Moreover, in Hospitals –among those working the shorter workweeks, 1 to 19 hours, the premium is zero, thus neither a penalty nor a premium. Working 35 to 39 hours explains most of the pay premium observed in the hospital sector (see below). This suggests there is an “hours penalty” at work even in the sole sector where there is, on average, a pay premium for working part time hours. Thus, in only one sole industry of 50 total intermediate level industries is there no penalty – there is a small pay premium in the hospital sector, which is only for those who work at least 20 hours per week. The size of a pay penalty will not only reflect relatively lower per hour earnings for part time jobs, but higher pay for the comparison group of otherwise comparable full-time job holders. Moreover, a pay penalty might be large and the headcount small, or vice versa, in a given industry. Thus, a smaller sized penalty should not be conflated with good compensation for part timers.

Five Selected Detailed Industries of Interest

Next, five selected, more detailed industries of interest are explored, with an eye toward policy proposals targeted to these particular sectors as priorities to address conditions of part time employees (**Table 6**). Within the retail sector, in Clothing Stores the adjusted pay penalty is sizeable, at 38%. Moreover, we also break this down by hours to observe the “hours penalty.” The penalty is as high as 49 percent for those working shorter hours and even 27 percent for those with hours between 35 and 39. A second sub-industry, Grocery stores, has a penalty that varies from 25 up to 37 percent, depending on the length of their workweek.

The pay penalty for the Accommodations industry is 21 percent, slightly below the average for all industries. In accommodations, the penalty is at a somewhat higher 24 percent among anyone working fewer than 30 hours. In the Restaurants sector, it is at 16 percent, right at the same level of its more aggregate industry category that includes drinking establishment. This penalty size is likely smaller than might be expected largely because earnings include tips. However, the pay penalty is higher, 22 percent, among those who work fewer than 20 hours per week. In this same range is in the Services to Buildings industry, which has an 18 percent penalty.

Part Time Pay Penalty Union versus Nonunion Workers

Do labor unions provide part time workers any reduction in the pay penalty? Part timers who report being in a labor union might have hourly pay closer to that of otherwise comparable full timers, but not necessarily so if unions provide a relatively bigger boost to full time members. Unions on average raise 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). Our focus here is on whether part time workers who are part of a union receive a pay premium relative to nonunion part timers. In wage levels, among part-timers who appear in the ORG, **Table 7** shows that there is a 15.6 percent advantage over their nonunion similar counterparts. Thus, unions deliver a slightly higher gain for part timers than they do generally for all workers, at 13 percent. Indeed, the union relative wage effect for full time workers is in the neighborhood of 8 to 11 percent. Unions only serve to close the disparity in earnings among full time workers, but even more so for part timers, on average.

Individual Fixed Effects Models and Estimates of the Part Time Wage Penalty for a Panel Subset

Is there evidence that the pay differential (penalty) reflects worker heterogeneity – differences between those workers in part time jobs versus full time workers which are not captured by traditional personal or work characteristics? We now test an “individual fixed effects” estimation model, replicating Hirsch’s model here, using the 2003-2017 matched panel in the CPS.²⁹ As Hirsch did, we consider possible individual, unobserved differences between workers by examining only those who changed status in the 12-month interim, from full time to part time (and symmetrically, vice versa), to isolate the effects of part time employment. Thus, we deploy only about 10 percent of the full sample (total n = 24 thousand individuals, 48 thousand cases) – about half of individuals exhibited a switch in one direction and half in the other. These individuals’ wage changes are contrasted to those who stayed in the same status, as either full time or part time, both before and after the 12-month period. As with Hirsch, fixed effects estimation technique that looks just within a given individual, is expected to knock down the size of the wage penalty estimate, if not eliminate it.

²⁹ All these industry regressions use a matched sample of wage earners from the CPS-ORG over 2003-2017. The Total sample size is smaller here, 668,924, with 344 thousand pairs of matches (slightly higher among men), from the Outgoing Rotation Groups (ORG) of the CPS, within the period. Longitudinal identifiers from IPUMS link CPS-ORG respondents one year apart. To ensure match quality, we additionally drop observations that report a change in gender, a decrease in age or an increase in age over two years, or a change in state of residence.

The estimates in **Table 8** are intended to capture the more “pure” wage penalty, by observing the average change in earnings associated with a change in the same individual’s status between part-time full-time, when they changed their industry and occupation, in contrast to those who changed neither. Such a change is most likely to reflect a change in employment to a different employer, thus not confounded with pay changes that might have occurred by moving upward within the same organization. **Table 8** shows the additional fixed effects regression results, with the worker characteristics controls included. For those whose changed involved a part time job in a different industry and occupation, they incurred a penalty, of 11 percent.³⁰ This penalty is noticeably higher than the 7 percent penalty found by Hirsch for 1995-2002 period.

Distinguishing hourly from salary paid workers reveals a key finding. When we split the sample, using the “*wagestatus*” CPS question re: how earnings get calculated – hourly or weekly --so that one group is [hourly pay + hourly plus tips], this group makes up 56% of employed (about 10% switched status over the course of a year, to or from salaried status). When omitting those earn a weekly, monthly or annual salary, the hourly pay penalty for those paid by the hours is considerably larger. Those who were hourly part timers (the majority) incur over a 13 percent pay penalty if they switched both. In contrast, salaried part timers actually received a 0% pay penalty if they changed both industry and occupation. Thus, it is the inclusion of salaried part timers that creates the impression of little to no pay penalty, even a small premium for part time working, but for hourly workers even fixed effects models find a noteworthy pay gap. The effectively zero penalty reflects the net effect of a penalty for part time work that is paid hourly and an actual premium for part time working for a salary.

Thus, hourly paid part time working is where the penalties are concentrated, and salaried jobs—and switching into them from hourly in particular – are rewarded some kind of off-setting pay premium to counter the penalty for part time rather than full time working. This is quite consistent with findings for Retail sector that part time positions are used to screen for filling full time positions from the part time work force (CPD, 2017). Workers who switch occupational titles, perhaps through promotion, thus get higher wage rates. In sum, there are wage penalties even when just looking at the sub-sample who changed status over the course of a year, to control for individual fixed effects, among those who change both industry and occupation from and to or from part time. The findings suggests there may be a role for the involuntariness of such changes. It is more likely that changing both one’s occupation and industry was initiated by the employer, in contrast to changing neither or just one. Thus, when relatively more voluntary, the penalty might reflect in part an accepted compensating wage differential. However, to the extent is involuntary, then it reflects more a compounding, downward mobility, forced by having to change from one’s initial job. Salaried workers change to and from part-time, however, do so at virtually “no cost,” but for the hourly paid (+tips), a substantial penalty occurs.

Limitations of the Analyses and Implications for Future Research

Continuing research ought to use interaction terms in the log earnings model estimation for both part-time working and industry, rather than simply estimating the industry coefficients on the part-time employed sample (and use the updated, fuller) 2003-2018 data.

Policy Implications of the Findings – Addressing the Rise of Part Time and Pay Penalty: Both Causes and Consequences

1) Providing Priority Access to Hours, as Part of Fair Scheduling Rights to Request Additional or Minimum Hours, such as the Schedules that Work Act (STWA), proposed in the US Congress, and in many statehouses and city councils across the US, contain at least three provisions that would serve to diminish the income and pay disadvantages experienced by incumbents of part time jobs. The bills generally permit employees to request changes to their work schedules without fear of retaliation and to ensure that employers consider these requests, and to require employers to provide more predictable and stable schedules for employees, either in certain occupations or industries or for virtually all hourly paid employees. The most direct is Access to Hours. For example, in Seattle’s *Secure Scheduling* ordinance adopted in 2017, “Access to hours” ensured that, for current employees, before hiring new employees, an employer must post notice of available hours for 3 days and offer the job or work to qualified, current employee(s). In San Jose, CA, the “Opportunity to Work” campaign resulted in an ordinance that required, without specifying the number of hours for the period, that employers first offer available, additional hours of work to its existing part time work force, before hiring (sub)contractors, temps or new part time workers, who in the employer's good faith and reasonable judgment, have the skills and experience to perform the work (and must use a transparent and nondiscriminatory process to distribute the hours of work among

³⁰ For the penalty when changing both industry and occupation, the average among whites was about a percentage point higher, at 12.3 percent, another percentage point higher beyond that among Blacks, at 13.7 percent, for “other” race, at 14.5 percent, but among Hispanics, a somewhat lower penalty of 9.5 percent

those existing employees). Employers are not obliged in the event the additional hours would result in premium-owed overtime hours. The provisions in the San Francisco, Seattle, New York City, state of Oregon and virtually proposed bills included some requirement for **Predictability Pay** – if a worker’s posted schedule is altered or their shift length or hours or is cut, the employee is owed at least some pay for that. In certain cases, just an hour or two’s pay, in others, no less than half the hours of the originally scheduled shift. Similarly, **Reporting Pay** requirements, which pre-date the proposed scheduling ordinances (CLASP, 2014), require a minimum payment for showing up to work and having one’s hours eliminated or cut. All these would lean against pay suppression experienced by workers in part time positions, not only for those who work part time involuntarily – where the pay gap is more egregious – but for those working part time for more voluntary reasons, as well, who deserve such protections, too. Finally, because part time workers are twice as likely as voluntary part-time workers to be given unfavorable work schedules (Zukin and van Horn, 2015; Swanberg et al 2014; Alexander and Haley, 2015; Ruan and Reichman, 2014), other provisions of the Schedules That Work Act – such as minimum advance notice (posting) and prohibition of on-call work and clopening – would improve dimensions of part time workers’ well-being less directly associated with pay. The “right to request” modifications in hours (and schedules) – in the STWA and in cities and two states with such laws (VT and NH) – could expressly include a right to request additional work hours by part timers. A minimum hours regulation for part-time workers would guarantee a certain number of hours per week (such as 24 in France) to workers when hired, unless they prefer otherwise (Peck, and Traub, 2011).

2) Parity for Part Time Working and Workers would provide wage fairness and pro-rated benefit coverage, which is a basic, accepted precept of The International Labor Organization (ILO)’s Part-Time Work Convention, 1994 (No. 175) -- the globally accepted standard for providing proportional Parity for Part Time. It recognizes the “the economic importance of part-time work, the need for employment policies to take into account the role of part-time work in facilitating additional employment opportunities, and the need to ensure protection for part-time workers in the areas of access to employment, working conditions and social security,” relative to “comparable full-time workers” (who have the same type of employment relationship; are engaged in the same or a similar type of work or occupation; and are employed in the same establishment). The standard articulates that: “national law and practice shall be taken to ensure that part-time workers do not, solely because they work part time, receive a basic wage which, calculated proportionately on an hourly, performance-related, or piece-rate basis, is lower than the basic wage of comparable full-time workers...(Article 5). “These conditions may be determined in proportion to hours of work, contributions or earnings...(Article 6). It extends this proportional parity in pay norm to statutory social security schemes which are based on occupational activity, “so that part-time workers enjoy conditions equivalent to those of comparable full-time workers.” Finally, it promotes that measures be taken to ensure that part-time workers receive conditions equivalent to those of comparable full-time workers for maternity leaves, paid annual leave, paid public holidays, and sick leave – provided in proportion to hours of work or earnings (Article 7). The Netherlands have been at the forefront of creating pro-rata equivalence for part time workers (where 75 percent of women employed work fewer than 35 hours per week), particularly regarding salary levels and where reasonable, also for employee benefits (Visser, 2004).

3) A Lower Overtime Pay Threshold for Hourly Paid Part Timers 35 hours threshold for part timers, to be owed overtime pay (Zukin and van Horn, 2015), would also help redress the part time pay gap. The proportion of part-timers whose actual weekly hours exceeded 40 were a non-trivial 4 percent (Golden, 2009), and surely a far greater proportion have weekly hours of 35 or more, given that part timers are more than twice as likely to report working irregular shift times (Golden, 2015b).³¹

4) Part-time worker eligibility to continue receiving unemployment insurance benefits while working part time hours, for both involuntary and voluntary reasons. Eligibility for UI should be extended to anyone who wants to reduce his or her work schedule for compelling reasons, including personal health and child care responsibilities (Golden, 2016; Ben-Ishai 2016; Glauber 2013).. The federal government should enact a minimum standard in which workers qualify for UI benefits as long as the work being sought is for at least 20 hours per week. In addition, 29 states now provide partial unemployment insurance as “short-time compensation” (STC) payment eligibility to those who are involuntary part-time because employers have explicitly chosen to shorten workweeks of employees in lieu of instituting layoffs.

³¹ This policy is supported by wide margins, among both voluntary and involuntary part-time workers (Zukin and van Horn, 2015)

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Table 1:

Estimated hourly wage penalty for part-time work

	Part time hourly wage penalty				
	Raw	Unadjusted	Partially adjusted	Fully adjusted	Fully adjusted by type
	(1)	(2)	(3)	(4)	(5)
Hourly wage penalty					
All Part-time (PT)	-52.4%***	-53.1%***	-29.3%***	-19.8%***	
Involuntary-Slack work					-22.3%***
Involuntary-Can only find PT work					-29.5%***
Voluntary PT					-18.3%***
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 (12)				X	X

Notes: The symbols *, **, and *** indicate that wage penalty is significantly different from zero at the 0.10 level, 0.05 level, and 0.01 level, respectively, using heteroskedasticity-robust standard errors.

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.

Source: author's analysis of 2003-2018 CPS-ORG microdata.

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Table 2:

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

	Part-time wage penalty
All	-19.8%***
By race/ethnicity	
white	-20.7%***
black	-20.2%***
Hispanic	-14.2%***
By gender	
female	-15.9%***
male	-25.8%***
By gender and race/ethnicity	
White male	-28.1%***
White female	-16.4%***
Black male	-24.6%***
Black female	-17.2%***
Hispanic male	-16.9%***
Hispanic female	-12.3%***

Notes: The symbols *, **, and *** indicate that wage penalty is significantly different from zero at the 0.10 level, 0.05 level, and 0.01 level, respectively, using heteroskedasticity-robust standard errors.

Regressions include controls for age (5), education (16), years (16), industry (12), occupation (10) and state (51).

Source: author's analysis of 2003-2018 CPS-ORG microdata.

Economic Policy Institute

Table 3:

Incidence of full-time and part-time status for Blacks and Hispanics, by gender, 2017

Share of workers by part-time and full-time status, 2017

	Total at work	Part-time			Full-time
		Total	Noneconomic	Economic	
<i>All</i>	100.0%	100.0%	100.0%	100.0%	100.0%
<i>By gender</i>					
<i>Female</i>	46.9%	60.1%	50.7%	60.6%	42.8%
<i>Male</i>	53.1%	39.9%	49.3%	38.2%	57.2%
<i>By race/ethnicity</i>					
<i>Black</i>	12.3%	11.9%	17.2%	10.9%	12.4%
<i>Hispanic</i>	16.9%	16.5%	24.9%	15.0%	17.0%
<i>By gender and race/ethnicity</i>					
<i>Black male</i>	5.8%	4.7%	7.9%	4.1%	6.1%
<i>Black female</i>	6.5%	7.2%	9.2%	6.8%	6.3%
<i>Hispanic male</i>	9.7%	7.1%	13.2%	6.1%	10.5%
<i>Hispanic female</i>	7.2%	9.3%	11.7%	8.9%	6.6%

Note: Author we need to define what economic and noneconomic columns mean

Source: Bureau of Labor Statistics [Employment and earnings](#), 2018, Tables 22.

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Table 4: Adjusted Part-time wage penalty by Weekly Hours status					
logwage	# of Hours (referent = 40)	Coefficient	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 = 661,534
					R-squared = 0.3946
					Adj R-squared = 0.3945

Table 5 :						
Part Time Wage Penalties by 50 Intermediate Industries						
Industry Intermediate Level	Pay Penalty Coefficient	Std Err	t	P> t 	N	Adj R-squared
Agriculture	-.12933	.02885	4.48	0.000	4,503	0.3196
Mining	-.14796	.04864	-3.04	0.004	4,761	0.3054
<i>Forestry, logging, fishing, hunting, and trapping</i>	.31559	-.06928	-4.55	0.000	846	0.4664
Construction	-.19831	.01416	-14.00	0.000	34,829	0.3653
Manufacturing						
Nonmetallic mineral product manufacturing	-.13600	.07717	-1.76	0.084	2,531	0.3651
Primary metals and fabricated metal products	-.22281	.03567	-6.25	0.000	9,527	0.3277
Computer and electronic product manufacturing	-.10505	.05169	-2.03	0.047	7,878	0.5033
Machinery manufacturing	-.15641	.03020	-5.18	0.000	7,654	0.4196
Electrical equipment, appliance manufacturing	-.21085	.05098	-4.14	0.000	2,732	0.4689
Transportation equipment manufacturing	-.10657	.03276	-3.25	0.002	11,872	0.4707
Wood products	-.11281	.05652	-2.00	0.052	2,505	0.3467
Furniture and fixtures manufacturing	-.14461	.03041	-4.76	0.000	2,730	0.3575
Miscellaneous and not specified manufacturing	-.3496	.04109	-8.51	0.000	6,119	0.4884
Food manufacturing	-.27713	.03128	-8.86	0.000	9,459	0.4296
Beverage and tobacco products	-.37543	.10051	-3.74	0.000	1,301	0.3497
Textile, apparel, and leather manufacturing	-.22703	.02886	-7.87	0.000	3,197	0.4944
Paper and printing	-.22056	.03912	-5.64	0.000	6,062	0.3514
Petroleum and coal products manufacturing	-.44638	.22307	-2.00	0.051	898	0.3785
Chemical manufacturing	-.29140	.06109	-4.77	0.000	6,934	0.4590

Plastics and rubber products		-0.13683	.06700	-2.04	0.047	3,325	0.3789
Wholesale trade		-0.25387	.02320	-10.94	0.000	20,185	0.3509
Retail trade		-0.32218	.00969	-33.23	0.000	70,553	0.3708
Transportation and warehousing		-0.20752	.01500	-13.83	0.000	26,927	0.2297
Utilities		-0.26613	.05340	-4.98	0.000	7,724	0.3380
Publishing industries (except internet)		-0.35948	.03495	-10.28	0.000	4,092	0.3789
<i>Motion picture and sound recording industries</i>		<i>-0.46611</i>	<i>.05105</i>	<i>-9.13</i>	<i>0.000</i>	<i>957</i>	<i>0.5477</i>
Broadcasting (except internet)		-0.29814	.04762	-6.26	0.000	2,928	0.2988
<i>Internet publishing and broadcasting</i>		<i>-0.43002</i>	<i>.25324</i>	<i>-1.70</i>	<i>0.102</i>	<i>135</i>	<i>0.3453</i>
Telecommunications		-0.17905	.04277	-4.19	0.000	5,810	0.3999
<i>Internet service providers and data processing services</i>		<i>-0.27789</i>	<i>.06082</i>	<i>-4.57</i>	<i>0.000</i>	<i>675</i>	<i>0.5146</i>
Other information services		-0.45707	.02984	15.32	0.000	1,808	0.5070
Finance		-0.25001	.01536	-16.28	0.000	21,588	0.3904
Insurance		-0.19923	.02642	-7.54	0.000	13,813	0.3516
Real estate		-0.25351	.02108	-12.02	0.000	7,373	0.2617
Rental and leasing services		-0.49643	.03234	-15.35	0.000	1,972	0.4312
Professional and technical services		-0.18945	.01185	-15.98	0.000	38,170	0.3699
<i>Management of companies and enterprises</i>		<i>-0.38474</i>	<i>.06359</i>	<i>-6.05</i>	<i>0.000</i>	<i>734</i>	<i>0.4424</i>
Administrative and support services		-0.23196	.01270	-18.26	0.000	18,708	0.3582
Waste management and remediation services		-0.30467	.05953	-5.12	0.000	2,288	0.3054
Educational services		-0.16449	.00856	-19.21	0.000	83,933	0.4234
Hospitals		+0.03789	.01215	3.12	0.003	35,970	0.4046
Health care services, except hospitals		-0.05492	.01239	-4.43	0.000	47,335	0.4126
Social assistance		-0.22436	.00916	-24.49	0.000	14,362	0.4094
Arts, entertainment, and recreation		-0.244907	.02197	-11.14	0.000	10,907	0.3080
Accommodation		-0.19364	.02368	-8.18	0.000	7,732	0.3331
Food services and drinking places		-0.16022	.01091	-14.67	0.000	24,458	0.2268

Repair and maintenance		-.24903	.02985	-8.34	0.000	6,292	0.2685
Part-time wage premium for Personal and laundry services		-.10237	.02008	-5.10	0.000	5,483	0.2404
Membership associations and organizations		-.22791	.01087	-20.95	0.000	11,863	0.2591
<i>Private households</i>		-.02834	.03168	-0.89	0.376	873	0.2404
Public Administration		-.31137	.01288	-24.16	0.000	43,571	0.4037

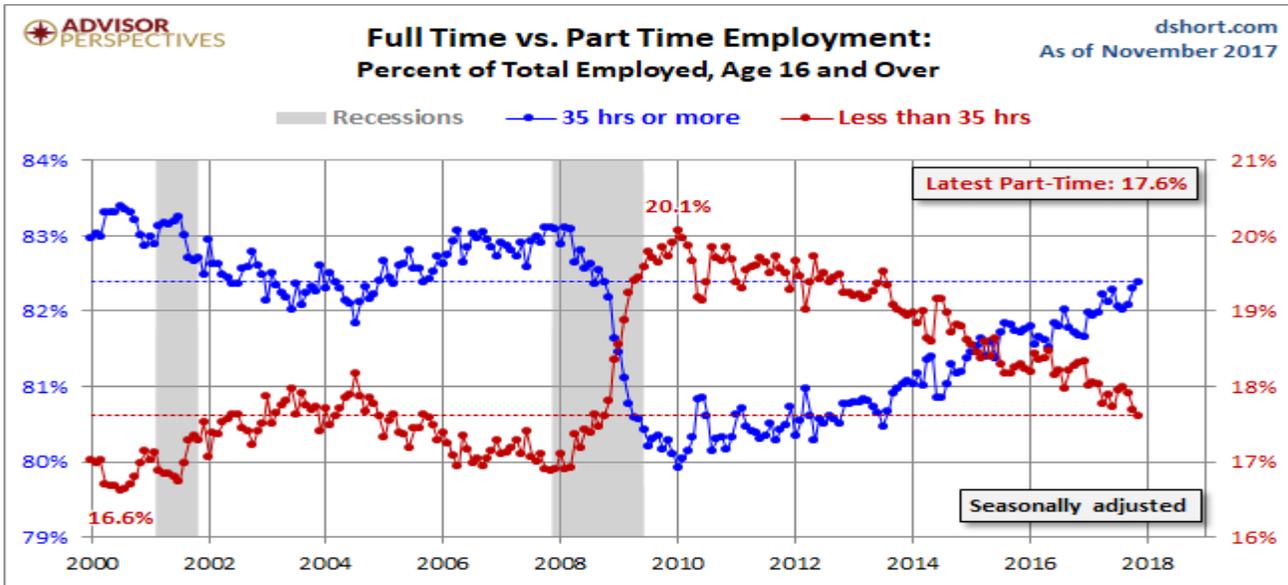
Table 6: Hourly Wage Penalties for Part Time Working, in 5 Detailed Industries	Hours Category (referent =40)	Part-time log wage penalty: Coefficient	Robust Std. Err	t	P> t 		Number of obs
RESTAURANTS	1=1-19	-.21954	.01750	-12.54	0.000		23,157
	2=20-29	-.21017	.01401	-15.00	0.000		
	3=30-34	-.18219	.01568	-11.61	0.000		
	4=35-39	-.16022	.01072	-14.94	0.000		
						R-squared = .2482 Adj R-squared = .245	
GROCERY	1=1-19	-.37267	.01764	-21.13	0.000		
	2=20-29	-.33939	.01843	-18.41	0.000		
	3=30-34	-.29486	.01878	-15.70	0.000		
	4=35-39	-.25227	.01405	-17.97	0.000		
						R-squared = 0.4189 Adj R-squared = .414	11,999
CLOTHING	1=1-19	-.49387	.03440	-14.35	0.000		
	2=20-29	-.43124	.02277	-18.93	0.000		
	3=30-34	-.36820	.02129	-17.29	0.000		
	4=35-39	-.26552	.03039	-8.73	0.000		
						R-squared = 0.4603 Adj R-squared = .442	2,859
ACCOMMODATIONS	1=1-19	-.23656	.03747	-6.31	0.000		

	2=20-29	-.24616	.02794	-8.81	0.000		
	3=30-34	-.17583	.02914	-6.03	0.000		
	4=35-39	-.12826	.04848	-2.65	0.011		
						R-squared = .3408 Adj R-squared = 0.332	7,177
HOSPITALS	1=1-19	.00764	.01547	0.49	0.623		
	2=20-29	.072512	.01450	5.00	0.000		
	3=30-34	.07001	.01825	3.84	0.000		
	4=35-39	.10017	.00910	11.01	0.000		
						R-squared = .4101 Adj R-squared = 0.409	35,547
SERVICES TO BUILDINGS	1=1-19	-.14495	.05136	-2.82	0.007		
	2=20-29	-.2481197	.02897	-8.65	0.000		
	3=30-34	-.1391474	.03084	-4.51	0.000		
	4=35-39	-.155993	.02867	-5.44	0.000		
						R-squared = .3080 Adj R-squared = 0.291	3,727

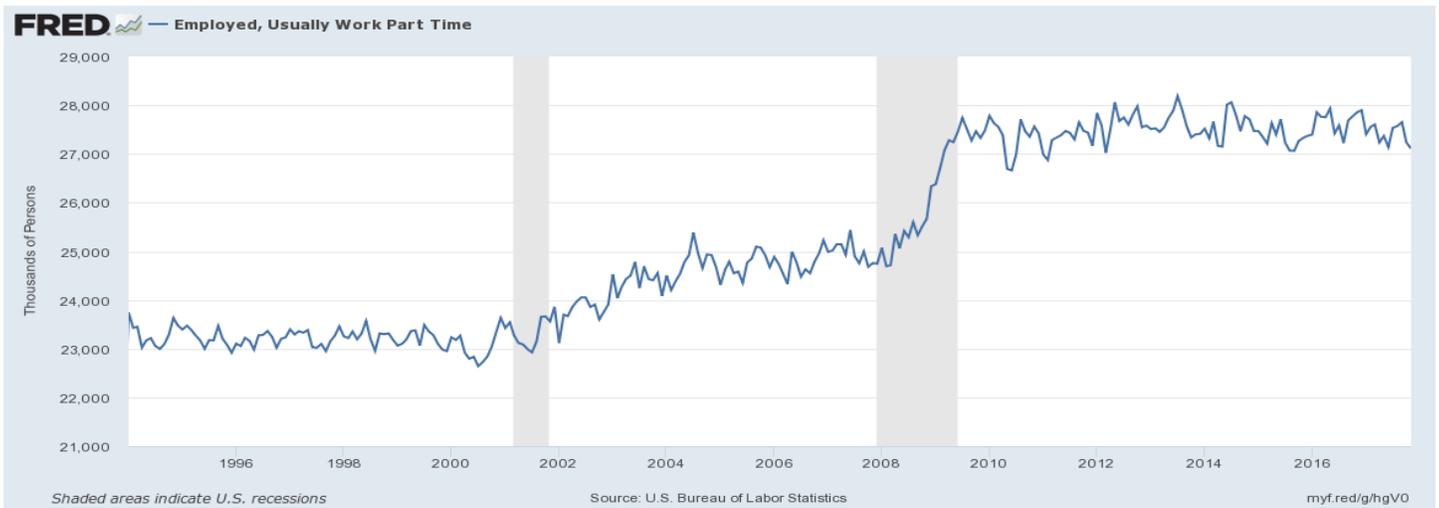
TABLE 7 : Union wage (level) premium for part-timers				
logwage	Coefficient	Robust Std. Err	t	P> t
	.1554	.0106	14.57	0.000
				Number of obs = 102,363 R-squared = 0.3328 Adj R-squared = 0.3322

Table 8	Individual Fixed Effects Estimations, Changing both Industry or Occupation vs. No Change, ALL Employed Part Time	Part Time Penalty (log of wages)			
	<i>Part Time Still with Change in Both Industry and Occupation</i>	Coefficient	Std. Err	t	P> t
		-0.1326	.0141	-9.41	0.000
					N = 668,924 R-squared = 0.9285 Adj R-squared = .8571
	Individual Fixed Effects Estimations, No Change of Industry or Occupation vs. a Change: Part Time Workers with No change in Hourly/Salaried status subsample:				
		-0.11975	.01313	-9.12	0.000
					N = 575,962 R-squared = 0.938 Adj R-squared = 0.876
	Individual Fixed Effects Estimations, Only HOURLY Paid Part Time Workers, with no hourly/salaried status change: No Change of Industry or Occupation vs. Some Change subsample				
		-0.1313	.01040	-12.52	0.000
					N = 326,844 R-squared = 0.9416 Adj R-squared = .8832
	Part Time Penalty with a Change of Industry or Occupation vs. Change of Industry or Occupation or Both– HOURLY Paid Only subsample				
		-0.1135	.0110	-10.29	0.000
					N = 575,962 R-squared = 0.9384 Adj R-squared = .8769
	Part Time Penalty With a Change of Industry or Occupation vs. Change of Industry or Occupation or Both– NON-HOURLY Paid Only				
		-0.0096492	.05327	-0.18	
					Number of obs = 249,118 R-squared = 0.8999 Adj R-squared = .7997

Appendix A : Time Trends in Percentages Part Time vs. Full Time, 2000-2017.



Appendix B: Usually Work Part Time, Trend 1994-2017, number employed



Appendix C:

Table 9 shows that variations in access rates are different for industries in which part-time (or full-time) employment is more prevalent, as measured by the survey of employers (see above for as measured by the CPS, via the household survey)[Bishow, 2015)]. Based on the relative percentage of part-time jobs in these industries, the three “lower hour” industries are the accommodation and food services; arts, entertainment, and recreation; and retail trade. The remaining industries are aggregated into a group referred to as “higher hour industries.” Employment in the lower hour industries is more evenly divided between full-time and part-time jobs. While in contrast, full-time jobs account for 85 percent of employment in the higher-hour-industries category

Table 9. Percentage of jobs that are part time, by industry, March 2013

Industry	Part Time Percent
Lower hour industries	
Accommodation and food services	60
Arts, entertainment and recreation	50
Retail trade	49
Higher hour industries	
Other services (except administration)	32
Health care	27
Administrative and support and waste management and remediation services	26
Educational services	22
Transportation and warehousing	20
Real estate and rental leasing	16
Professional, scientific, and technical services	11
Information	9
Wholesale trade	8
Finance and insurance	6
Management of companies and enterprises	6
Construction	5
Manufacturing	3
Mining	2
Utilities	1

Source: Bishow, 2015, *National Compensation Survey*, U.S. Bureau of Labor Statistics.