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The Effects of Pay Transparency: A Brief Review

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Workforce Disrupted
Seeking the Labor Market's Next Equilibrium

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Abstract

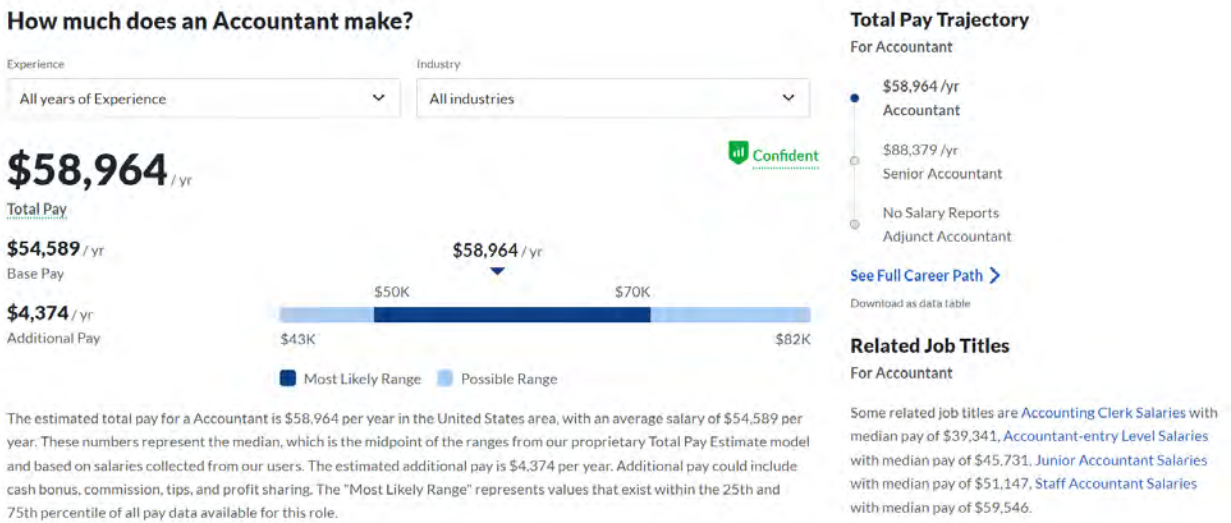
Pay transparency policies are increasingly popular among governments in the United States and around the world. For instance, many European countries require large employers to report gender-disaggregated pay statistics, and most U.S. states make the salaries of state employees available to the public. I summarize a growing body of academic work measuring the effects of transparency policies. These studies reveal that certain policies had the intended effects, such as reducing gender pay gaps. On the other hand, there is growing evidence of undesired effects. I conclude with policy recommendations and avenues for future research.

Introduction

Employees utilize salary information for a range of purposes, such as advocating for better compensation during negotiations, evaluating the competitiveness of positions or potential employers, and making informed career decisions. Improving pay transparency by making employee salary information openly accessible has become an important cause for many worker advocates in recent years. When pay transparency is limited, employees' access to accurate and comprehensive salary data largely depends on their ability to collect and share information (Caldwell & Harmon, 2018). Yet there are significant information frictions for those trying to learn about salaries (Cullen & Perez-Truglia, 2022). These information frictions are due to a combination of factors including privacy norms, which discourage individuals from openly discussing their salaries, and employees' fears of potential retaliation from employers if they disclose or inquire about salaries (Cullen & Perez-Truglia, 2023).

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Figure 1: screenshot of a search result in www.glassdoor.com, showing salaries for accountants.



These information frictions have led to a widespread lack of pay transparency, which may have far-reaching implications for the labor market. The informational opacity could, for instance, exacerbate workplace discrimination by allowing gender and racial disparities in pay to persist unnoticed. If employees are uninformed about their market value, employers would have the upper hand in salary negotiations, which could suppress wages and hinder efforts to achieve fair compensation.

In the past two decades, there has been broad-based, steady movement towards enhanced pay transparency. Technological advances that make it increasingly straightforward for employees to gather accurate information about salaries are in part to thank. As illustrated in Figure 1, employees can use the online services of companies such as Glassdoor, Comparably, levels.fyi or LinkedIn to anonymously search for the typical salary range in a specific occupation. Another app called Blind allows employees to have anonymous conversations with their coworkers about their pay. And in some companies, such as Google and Microsoft, some employees have created spreadsheets where coworkers can make the information about their own pay available to one another (Kurter, 2019; Stewart, 2021). While these market solutions play a non-marginal role, government policies have been at the forefront and the main driver of the upward trend in pay transparency.

Figure 2: screenshot from www.openthebooks.com, a website that allows you to look up the salaries of every New York State employee

The screenshot shows the Open The Books website interface. At the top is a navigation bar with the logo, 'Our Story', and links for Petitions, Reports, News, Maps, FAQs, Videos, and Contact Us. There are also buttons for SEARCH, SIGN UP, and DONATE NOW!. Below the navigation bar, the breadcrumb 'Home > New York State Employees' is visible, followed by the title 'New York State Employees'. A message states 'Results: Top 10,000 of 2,411,985 salaries found.' Below this is a pagination bar with numbers 1 through 15, where '1' is highlighted. The main content is a table with the following data:

Year	Employer	Name	Title	Annual Wages	Source
2021	Upstate Universal Hospital	Corona Jr Robert J	Vice Pres Hosp Affair	\$823,933.78	New York State Comptroller
2020	Upstate Universal Hospital	Corona Jr Robert J	Vice Pres Hosp Affair	\$787,288.21	New York State Comptroller
2020	City University of New York	Matos Rodriguez Felix Vicente	Chancellor	\$786,682.25	New York State Comptroller

Pay Transparency Policies

A handful of national and state-level policies promoting pay transparency have been enacted in the United States and in other countries as well. While these transparency policies differ significantly from state to state and from country to country, five of the most prevalent policy archetypes are summarized below:²

- **Disclosure of individual salaries:** Policies of this type make the salaries of employees publicly available. The salaries of nearly all U.S. state employees, for instance, are easily accessible online. Figure 2 provides a screenshot of a website that anyone can search to look up the salary of every New York State employee along with their full names, employer, and position; there are similar websites for nearly every other U.S. state.³ Other countries, such as Canada, have similar policies

² For a more comprehensive discussion of transparency policies see Cullen (2023).

³ While there is no single website that provides data for all U.S. states, there are innumerable websites sharing this type of information at the state level. For example, the website in the above image, Open The Books (www.openthebooks.com), collects data on salaries and pensions for 120 million public employees.

in place. Still others, such as Sweden, Finland and Norway, have related policies that make the data available but not as easily accessible.

- **Disclosure of gender pay gaps:** These policies require employers to compute statistics related to the gender pay gap and disclose them to their own employees and, in some cases, to the general public. Policies of this kind have been enacted in many European countries including Denmark, France, Italy, Switzerland and the United Kingdom, and in some countries outside of Europe, such as Australia, Canada, Israel and Japan.
- **Disclosure of pay bands:** On the books in some U.S. states, such as California and Colorado, these policies require companies to provide salary information or salary ranges for a specific position when advertising job openings, or to make the pay band available for existing employees if they request this information.
- **Salary history bans:** Many U.S. states, such as Massachusetts and New Jersey, have in recent years enacted laws of this type, which prohibit employers from asking job candidates about their salary or compensation history during the hiring process.
- **Right of workers to talk:** Laws of this type protect worker's right to disclose salary information to their coworkers and to ask coworkers about their salaries. Several U.S. states, such as California and Illinois, have recently passed legislation to guarantee the right of workers to talk about their pay. Similar policies have been enacted recently in other countries, including Canada and Australia.

Governments have implemented pay transparency policies with the expectations that the laws will have certain desirable effects, including mitigating gender and racial pay and increasing employees' leverage in salary negotiations. In action, however, these policies are often less effective than expected. Policies may even backfire, producing the opposite of intended effects or coming with unanticipated, negative side effects. It is therefore well worth our while to empirically examine the slew of pay

transparency policies that have been enacted to date and strive to discover if they are achieving the desired effects. Economists have analyzed the available data, producing some insights on the *actual* effects of pay transparency. A summary of a selection of recent studies is given below, grouped by the outcome of interest.⁴

Effects on the Gender Pay Gap

Two studies examining pay transparency policies, one in Denmark and another in Canada, suggest that these policies may mitigate pay discrimination. Bennedsen, Simintzi, Tsoutsoura & Wolfenzon (2020) exploit a 2006 law enacted in Denmark that requires firms with over 35 employees to report gender-disaggregated wage statistics. To study this new policy's effects on the gender pay gap, the authors use a regression discontinuity design to compare employees in firms just above the 35-employee threshold with employees in firms right below this threshold. The researchers find that, because of the new policy, the gender pay gap declined by two percentage points (or 13% relative to the pre-legislation mean). The second study, conducted by Baker, Halberstam, Kroft, Mas & Messacar (2023), yields a similar conclusion while examining a very different sample: university faculty salaries in Canada. Their research design leverages the staggered introduction of pay disclosure laws in Canada that required the release of individual salaries of university faculty (along with all the other public employees). The researchers conclude that the newly established pay transparency reduced the gender gap by at least 1.2 percentage points (or 20% relative to the pre-legislation mean).⁵

⁴ This review is not meant to provide a comprehensive list of studies on the effects of pay transparency on the gender pay gap. Some other examples are Duchini, Simion & Turrell (2020), Davis, Ouimet & Wang (2022), and Gulyas, Seitz & Sinha (2023). And for reviews of the literature, see Bennedsen, Larsen & Wei (2022) and Duchini, Simion & Turrell (2023).

⁵ For other studies on the effects of pay transparency on the gender pay gap, see for example Duchini, Simion & Turrell (2020), Davis, Ouimet & Wang (2022), Bennedsen, Larsen & Wei (2022) and Gulyas, Seitz & Sinha (2023).

Effects on Average Pay

Evidence suggests that higher transparency is an effective method of reducing gender pay gaps, yet there is also evidence that indicates that such policies negatively effect salary growth. The two studies mentioned above, Bennedsen et al. (2020) and Baker et al. (2023), find that the observed reduction in the pay gap is largely achieved through a decrease in wage growth for male employees. A third paper, Cullen & Pakzad-Hurson (2023), examined the staggered introduction of laws protecting the right of workers to discuss pay in 13 U.S. states. The researchers conclude that these transparency laws caused average wages to decline by approximately 2%. The authors explain the puzzling finding by theorizing that, as a reaction to the increased transparency, employers are more reluctant to increase wages to any one worker because that would prompt costly renegotiations with other workers.

Effects on Employee Morale

Beyond impacts on wages, pay transparency can also affect employee morale and behavior. In a seminal study, Card, Mas, Moretti, & Saez (2012) conducted a field experiment with a sample of employees from the University of California. In early 2008, after a court ruling on California's "right to know" law, the *Sacramento Bee* newspaper launched a website allowing users to search and access the salaries of state employees. Months after the website's introduction, Card et al. (2012) sent an email to a random subset of their sample, informing them about the new website that listed the pay of University employees. A few days later they surveyed all employees in their sample, asking them about their pay satisfaction, job satisfaction, and job search intentions. They compare the responses of individuals in the treatment group (who were informed about the site) with those in the control group (who were not informed). The investigators find that knowledge of the website had a significant effect on employees with salaries below the median for their pay unit and occupation – that is, on the employees who were being under-paid. For that group, knowing about the website resulted in lower pay- and job-satisfaction and a higher stated intention to look for a new job.

One interpretation of Card et al.'s (2012) finding is that employees are demoralized after finding out that their peers are paid more than them. If your peers have the same role and responsibilities, why should they get paid any more than you? Other recent studies have corroborated this finding in a number of different settings. Dube, Giuliano & Leonard (2019), for example, studied sales employees at a large U.S. retailer with hundreds of stores nationwide. To identify causal effects, the researchers leverage an arbitrary rule-based formula that the company uses to determine pay raises. The authors show that, conditional on an individual's pay, the higher the average wage of peers the more likely an employee quits.⁶ The magnitude of the effect is surprisingly large too: the researchers find that an employee's probability of quitting is roughly as dependent on peers' salaries as on the worker's own salary. This cited evidence comes from horizontal comparisons between a worker and their peers. The horizontal differences in pay tend to be rather small because within a particular firm and for a specific position employees' salaries tend to be fairly similar. Vertical differences in pay are much, much larger. Your boss may make twice as much as you, his or her boss may make a few times your pay, and the CEO makes hundreds of times your paycheck.⁷ How do employees react to the knowledge of vertical inequality?

To find out, Cullen & Perez-Truglia (2022) conducted a field experiment with a sample of 2,060 employees from a multibillion-dollar corporation in Southeast Asia. In this case, employees have large misperceptions about the average pay of their peers and their bosses. In one treatment arm, researchers flip a coin to decide whether to provide employees with accurate information about the pay of peers. Consistent with the findings from Card et al. (2012), Cullen & Perez-Truglia (2022) determine that employees are demotivated when they find out that their peers earn more than what they had initially

⁶ Breza, Kaur, and Shamdasani (2018) provide another intriguing example of the impact of peer comparisons on morale. In a month-long experiment involving manufacturing workers in India, the researchers randomly assigned coworkers within the same unit to receive either the same flat daily wage or differential wages based on their baseline productivity rankings. The study reveals that pay inequality exerts a substantial negative influence on both output and attendance. These effects, however, are only significant when coworkers' productivity is challenging to observe.

⁷ Among S&P 500 companies the CEO-to-Worker Pay Ratio was estimated to be 299-to-1 in 2020 (Jackson, 2021).

thought. In another treatment arm, the authors examine vertical comparisons, flipping a coin to decide whether to provide information on the actual salary of bosses. The results indicate that learning that one's boss is well paid has a motivating effect. When employees find out that their bosses earn more than what they had initially thought, they spend more hours in the office, send more emails and increase their revenues. This study provides evidence that the observed effects are driven by career expectations. The motivating effects are concentrated in the sample of employees that learn about pay in a managerial position to which they can realistically aspire. The study also reports that when employees find out that their bosses are paid better than they had believed, they increase their own salary expectations for five years in the future.

Privacy Costs

When a pay transparency policy discloses identifiable information, such as the full names and salaries of the employees, the policy may incur privacy costs to the individuals whose information is being disclosed. Two recent studies demonstrate that although employees value having access to salary information, they also value their privacy – sometimes more than the information.

The first study, Perez-Truglia (2020), leverages a natural experiment from 2001 in Norway, when tax records became publicly available and easily accessible online. This change enabled every Norwegian to discover the income of anyone else in the country with a simple web search. At their peak, these websites were among the most popular in the country. Survey data, administrative data and anecdotal reports suggest that most of the traffic came from people snooping on their friends and relatives (Reck, Slemrod, & Vattø, 2022). One popular app connected to Facebook to create leaderboards showing the highest and lowest earners among your Facebook friends. The privacy costs extended beyond the Internet, as [reports](#) came to light telling of children from low-wage households being bullied at school came and low-wage workers who were met with comments from strangers asking how they could possible live on such meager salaries (New York Times, 2009). The increased transparency could in this way damage

the self-esteem and social standing of poorer individuals. Wealthier individuals, on the other hand, may stand to gain from the new norm of income comparisons. Using survey data, the study supports this hypothesis, as both the happiness gap and life satisfaction gap between rich and poor Norwegians widened after the increase in income transparency. These results indicate that transparency policies may create winners and losers.

A second study, Cullen & Perez-Truglia (2023), provides related evidence on just how much people value their privacy. The authors conducted a field experiment with 755 employees from a large commercial bank. Employees are largely uninformed about the salaries of peers, and they are willing to pay significant amounts of money to acquire such information. In one of the treatment arms, researchers gave each employee the option of sharing or concealing salary information with a set of five coworkers. Roughly 20% of employees prefer to disclose their salaries and 80% prefer to conceal the information. Then, researchers offered employees real money in exchange for sharing or concealing the information, opposing their previously stated preference. Around 40% of employees were not willing to reveal their salaries even when offered \$125 – the maximum amount offered in the experiment – showing that a large share of employees values their privacy a lot.

Policy Recommendations

The evidence suggests that existing pay transparency policies can achieve some desired effects but may also bring about unintended negative consequences. In light of this evidence, the chief recommendation is to redesign transparency policies to preserve the positive impacts while minimizing the undesired effects.

Consider pay transparency policies that disclose sensitive data, such as the disclosure of salaries of state employees in the U.S. Perez-Truglia (2020) and Cullen & Perez-Truglia (2023) find that while employees value having access to salary information, they also value their own privacy – sometimes more

than having the information. Alternative ways of publicizing and disseminating information could reduce privacy costs while preserving the desirable effects of transparency.

One proposed model would anonymize the information that is easily accessible online by removing the identifiable information from the itemized records (e.g., first and last names) or by disclosing aggregate information, such as salaries by position and employer. Removing specific names would allow individuals to see how much a worker in a given position earns, while preventing the disclosure of personalized salary information for the world to see. To protect individual privacy, the itemized records with full names could still be publicly available as long as they are not easily accessible. The government, for instance, could introduce a small cost to request information, such as filing an online form or paying a small fee. That barrier would likely dissuade the majority of unintended uses of the data, such as snooping on friends, while still allowing for legitimate uses of the data, such as researching market salaries or investigating a corruption scandal. Indeed, most employees in Cullen & Perez-Truglia's (2023) study, when asked directly, supported disclosing average salaries by position but opposed disclosing individual salaries.

An alternative approach would be to remove the anonymity of those doing the searching so that if you look up someone's income, the subject of your search can see that you looked up the information. This is the approach used in some Scandinavian countries, like Sweden, and also the approach ultimately adopted by the Norwegian government. This approach was quite effective: Norway's tax agency reported that the number of searches dropped by 88% after this policy went into effect. While the website remained popular, most people visiting the website were not looking up the income of others but were checking if anyone else was looking them up (Perez-Truglia, 2020).

Avenues for Future Research

There is an implicit assumption in the literature that transparency's effects chiefly stem from employees learning of – and reacting to – the disclosure of salary information. It is possible, however, that employers also react to the disclosure of salary information. Consider, for example, Cullen, Li & Perez-

Truglia's (2022) study, which finds that employers have limited information about the market pay for the positions that they recruit and acquire data from third parties to be better informed. This practice is known as salary benchmarking. When pay transparency makes high-quality data available for free, it is natural to expect employers to use the data to inform their compensation strategies. Following a mandate to disclose pay ranges in job postings, firms may look at their competitors' compensation to inform their own salary levels. Future research could fill this gap in the literature by studying how transparency policies affect the behavior of employers.

The studies discussed in this paper were conducted almost exclusively in developed countries (more precisely, in North America and Europe). The two exceptions are the field experiments, Breza, Kaur & Shandasani (2018) and Cullen & Perez-Truglia (2022), which were conducted in India and Southeast Asia, respectively. Gathering evidence from a broader set of countries would help us extrapolate the findings to a wider set of contexts. Bennedsen et al. (2020) and Baker et al. (2023), for instance, find that higher transparency reduced the gender pay gap in Denmark and Canada. Yet, given that these two are already among the most progressive countries in the world, pay transparency may not have the same effects in other countries with different gender norms. When tax records became publicly available in Norway there was no indication that the information was being used to target rich individuals for criminal purposes (Perez-Truglia, 2020). Norway is among the most crime-free countries in the world. In countries with high crime rates, the criminal uses of tax records could become a first order concern for the general public. Additional research conducted in a broader, more varied mix of cultural and social environments would provide valuable insights on the mechanisms by which pay transparency affects labor markets and the whole of society.

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