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### Low Pay in Rich Countries: Institutions, Bargaining Power and Earnings Inequality in the U.S., U.K., Canada, Australia and France

Working Paper

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#### ABSTRACT

The canonical explanation for four decades of American wage stagnation and rising inequality has been that competitive market forces, driven by new computer-driven production technologies, have sharply reduced the demand for workers without good college degrees, complemented by the downward wage pressures from increasing global competition. If this is right, there should have been similar patterns of pay stagnation and inequality in other rich countries. This paper explores evidence for an alternative explanation that shifts the focus to profound shifts in the balance of bargaining power between employers and workers, driven by political choices that weakened protective labor regulations. National pay distributions are shown to be strikingly different across the rich world, with country rankings that have remained, with few exceptions, stable for many decades - whether measured by conventional inequality indicators for all workers (e.g., the OECD's 50-10 earnings ratio and low-pay rate) or by new measures of the incidence of poverty- and decent-pay (Howell, 2019; 2021), To explain this extensive range and stability of pay structures, an index of Institutional Bargaining Power (IBP) is developed from conventional indicators of wage-setting institutions and social protection policies. Like pay distributions, cross-country IBP scores are found to show wide variation and almost perfectly stable country rankings since the 1980s. A close statistical correspondence is shown between the IBP index and pay structures for the five-country sample, with particular attention to the incidence of poverty-pay and decent-pay jobs for young (18-34) male and female workers without a college degree. A similarly tight statistical fit is shown between the IBP index and conventional OECD inequality measures for a much larger set of rich countries. While other factors surely matter, the inequality of national pay structures and closely associated measures of earnings quality of jobs in the bottom half of the distribution can be nearly entirely accounted for by the inclusive nature of national regulatory regimes directed at earnings and employment protection.

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Consistent with the conventional textbook explanation of labor market outcomes, the most influential scholarship of the last generation has explained the spectacular post-1980 rise in American wage inequality and accompanying wage stagnation as a consequence of shifts in the demand and supply of skills, driven by workplace computerization (e.g., Goldin and Katz 2007, 2008; Acemoglu and Autor 2011, 2012; Autor 2010, 2014; Autor, Goldin and Katz, 2020).<sup>1</sup> But the empirical evidence relied upon to support this competitive market account has been contested (e.g., Card and DiNardo, 2002; Mishel, Shierholz and Schmitt, 2013; Hunt and Nunn, 2019; Mishel and Bivens, 2021; for an overview, see Howell and Kalleberg, 2019). An alternative political economy perspective shifts the focus from the market for skills to the balance of bargaining power between employers and employees, as argued long ago by Adam Smith (1937, Chapter 8) and several generations ago by the American post-war labor relations school, which included Dunlop, Kerr, Reynolds, and Lester (Kaufman, 1988). A great deal of recent empirical work has lent strong support to this view of the centrality of institutional bargaining power for the wage structure (DiNardo, Fortin and Lemieux, 1996; Kristal and Cohen, 2014; Fortin, Lemieux and Lloyd, 2019; Stansbury and Summers, 2020). Tomas Piketty (2014: 308) sums up the challenge for the canonical story with a cross-country perspective:

"... important episodes of compression and expansion of wage hierarchies ... are very difficult to explain solely in terms of the supply of and demand for various skills.... The problem with the theory of marginal productivity is quite simply that it fails to explain the diversity of the wage distributions we observe in different countries at different times. In order to understand the dynamics of wage inequality, we must introduce other factors, such as the institutions and rules that govern the operation of the labor market in each society."

This paper presents new cross-country evidence on the correspondence between the distribution of earnings quality and the bargaining power workers derive from national institutional and policy arrangements. With a focus on the bottom half of the pay distribution, the paper documents the striking range and stability of a variety of measures of earnings inequality, whether measured by conventional OECD<sup>2</sup> indicators for the entire employed workforce - the 50-10 ratio of gross earnings and the incidence of low pay – or by the incidence of new measures of the incidence of poverty-pay and decent-pay jobs. These new incidence measures have been calculated separately for workers grouped by age, gender and education for five countries: the

<sup>&</sup>lt;sup>1</sup> Claudia Goldin and Lawrence Katz sum up this view (2008: 28), "Stripped to essentials, the ebb and flow of wage inequality is all about education and technology."

<sup>&</sup>lt;sup>2</sup> Organization for Economic Cooperation and Development.

U.S., U.K., Canada, Australia and France (Howell, 2019; 2021).<sup>3</sup> With these conventional and new measures of pay inequality (and pay quality), earnings hierarchies are shown to be vastly different across rich countries with rankings that have remained largely unchanged for decades.<sup>4</sup>

These large and stable differences in earnings structures suggest, as Piketty argues, that national pay hierarchies reflect fundamental features of national institutional and policy regimes designed to regulate labor markets and protect worker interests. This political economy (or classical/institutionalist) perspective is explored with indexes of Institutional Bargaining Power (IBP) designed to measure the strength of collective wage-setting institutions and social policies that offer some employment protection and provide safety-net income not conditional on employment. This index is produced for the five-country sample as well as for the larger sample of rich OECD countries (distinguished only by the absence of minimum wage component in the latter). The IBP index is found to be nearly unchanged across countries over the last several decades and is shown to be highly associated with the 50-10 and pay quality incidence indicators, frequently almost perfectly. While there are surely other determinants of the shape and change in pay hierarchies across rich countries, including shifts in the supply/demand for skills and persistent differences in the tightness of labor markets, these results show that indicators of wage-setting and social protection regimes can do a good job of accounting for these cross-country pay outcomes. At the same time, evidence is presented in Howell (2021) strongly suggests that there the strength of protective labor and social regulatory protection and the degree of egalitarian outcomes for the bottom half of pay distributions has little or no adverse effects on cross-country employment performance, as measured by employment and unemployment rates. These findings contribute to the understanding of the political economy of institutions, low pay and employment performance and point to the potential benefit to bottomhalf workers from interventions that strengthen protective labor and social regulation.

<sup>&</sup>lt;sup>3</sup> Using national household surveys, Howell (2019; 2021) measures the earnings quality of jobs for five rich countries - four of which are Anglophone liberal market economies - by the incidence of decent-, low- and poverty-pay jobs for the post-1980 period (the years covered vary by country). Unlike the OECD's low-pay incidence measure, these pay quality incidence rates take account of the adequacy of worktime (approximated by involuntary part-time employment) and are calculated for a variety of demographic groups (distinguished by age, gender and education). Wage quality is measured with two wage thresholds set with reference to basic-needs budget evidence for the United States. The decent-wage/low-wage cutoff is set at two-thirds of the *mean* wage for full-time prime-age workers (\$17.50 for the U.S. in 2017); the poverty-wage threshold is the conventional (OECD) low-wage cutoff: two-thirds of the *median* wage for full-time workers (\$13.33 in 2017).

<sup>&</sup>lt;sup>4</sup> For a different view, see John Van Reenan's (2011) 2010 Adam Smith Lecture, in which he argues that "the canonical demand and supply model does a reasonable job at explaining the main trends in inequality between skill groups" (730). While he notes that institutions and worker bargaining power are not entirely irrelevant, supply-demand forces overwhelmingly dominate long-run cross-country patterns of inequality: "However, in terms of these major long-term (wage) trends, many of the similarities across countries suggests (sic) to me that country-specific institutions are unlikely to be the fundamental causes (sic) of such changes, as institutions differ so much between nations" (2011: 731).

#### 1. The Size and Stability of Cross-Country Pay Inequality

Conventional indicators of inequality highlight two central features of pay distributions in the post-1980 rich world - vast differences in inequality across countries and country rankings that have remained largely unchanged. For example, for 14 rich countries, the U.S. had the highest 90-10 ratio for household disposable income per member in both 1980-85 and 2005-08 (rising from 4.9 to 5.65), while the Netherlands, Finland and Sweden had the lowest in 1980-85 (2.8, 2.57, 2.53) and were among the five lowest in 2005-08 (Howell, 2013, figure 2).

The concern in this paper is more narrowly focused on worker pay, especially in the bottom half of the pay distribution. Figures 1-3 document the range and stability in cross-national wage inequality across countries with three OECD indicators - the 90-10 and 50-10 earnings ratios and the incidence of low pay.<sup>5</sup> Figure 1 presents the 90-10 earnings ratio for 2002 and 2018 for 19 OECD countries, ranked by their 2002 levels. The five countries with the lowest 90-10 pay inequality all show increases but remained the five lowest countries in 2018 (Sweden, Norway, Belgium, Denmark, and Finland), with ratios below 2.6 - about half the U.S. ratio (4.95). In the middle of the distribution, Switzerland, New Zealand, France, Australia, and Austria report little or no change over these two decades, while the four highest inequality countries in 2002 (the U.K., Canada, Korea, and the U.S.) were among the highest six in 2018. In both 2002 and 2018, Sweden had the lowest and the U.S. the highest 90-10 inequality. The correlation between 2002 and 2018 across these 19 countries is nearly perfect (.95).





\*For 2002, the ratio for Austria is for 2004; for 2018, the ratio for Belgium is for 2017. Source: OECD.Stat, "Decile ratios of gross earnings: Decile 9/Decile 1".

<sup>&</sup>lt;sup>5</sup> The ratio of gross earnings (weekly or monthly depending on the country) of the 90<sup>th</sup> decile to the 10<sup>th</sup> decile worker and the 50<sup>th</sup> to the 10<sup>th</sup> decile worker, and the share of workers with gross hourly earnings below two-thirds of the full-time median hourly earnings (the incidence of low pay).

Figure 2 reports the conventional measure of bottom-end inequality, the 50-10 earnings ratio, for the same 19 countries. It shows that the seven countries with the most egalitarian bottom-half distributions in 2002 (Sweden to Switzerland) also had the lowest 50-10 ratios in 2018 (below 1.52) with one exception (Norway, which increased to 1.67). At the same time, the top six countries in 2002 (from Germany to the U.S.) were also the six most inegalitarian in 2018. The U.S. had the highest bottom-end inequality in both years (just under 2.1), far higher than the next two highest countries, Canada (1.81) and Germany (1.79). The simple correlation between 2002 and 2018 on 50-10 pay inequality was also extremely high as high (.87).





\* For 2002, the ratio for Austria is for 2004; for 2018, the ratio for Belgium is for 2017. Source: OECD.Stat, "Decile ratios of gross earnings: Decile 5/Decile 1".

Another measure of bottom-end inequality is the OECD's incidence of low pay, measured as the share of workers paid less than two-thirds of the full-time wage. The OECD reports fewer countries with incidence rates for years close to both 2002 and 2018, so Figure 3 shows low-pay rates for just 12 countries, but the wide range of rates and the stability of country rankings are similar to the 50-10 results reported in Figure 2. Most of these countries appear to fall into three groups, with low pay incidence by far the lowest in 2002 for Belgium, Finland, and Denmark (6.3% to 7.4%), which were sharply lower than the next highest group of New Zealand, Japan, Australia, and Austria (13.6% to 15.2%). The countries with the highest share of workers with low pay were the U.K., Canada, the U.S., and Korea (20.9 to 24.5%). The pattern of low-pay rates for 2018 were broadly similar, but with lower levels for New Zealand and Korea, small differences for Japan, the U.K., and Canada, and a modest increase for Denmark (from a very low level). At or just below the top low pay incidence rate in each year was the U.S. (24.1% in 2018. Like the decile patterns shown in figures 1 and 2, the cross-country correlation for these two years for low pay incidence is extremely high (.94).



Figure 3: The Incidence of Low Pay for 12 OECD Countries, 2002 and 2018

\* For 2002, the ratio for Austria and Belgium is for 2004; for 2018, the ratio for Belgium is for 2017. Source: OECD.Stat, "Decile ratios of gross earnings: Low Pay Incidence" (share of employed workers paid less than two-thirds of gross median earnings for all full-time workers).

The wide range and stability of bottom-end labor market inequality across can also be seen in Figure 4 for the incidence of poverty-pay for young (18-34) men (Panel A) and women (Panel B) without a four-year college degree in the five (Howell, 2019; 2021). Like the OECD's low-pay incidence measure, "poverty-pay" is calculated with individual-level data from national household surveys and defined as the share of workers paid less than two-thirds of the median full-time wage but differs in that it also includes workers paid above that threshold who are working involuntarily part-time. Figure 4A shows that the poverty-pay share for young lesseducated male American workers rose spectacularly between 1980 and 2017, from 26.5 to 51.8 percent. Their British counterparts also experienced sharp increases in poverty-pay incidence, from 29.9 percent in 1994 to 44.9 percent in 2014. The other three countries – Canada, Australia and France – fail to show any long-term trend. The only ambiguity in rankings is between the U.K. and Canada as they switched places around 2007-08. Far below American levels, young less-educated Canadian workers have experienced poverty-pay incidence of 34-39% since 1997. Their Australian and French counterparts had rates that were still lower: 28 to 31 percent for Australia and 16 to 24 percent for France between 1990 and 2012. The most recent year for which I have poverty-pay incidence figures for all five countries is 2012; it ranges from 55.9 percent for the U.S. to 18.1 percent for France.<sup>6</sup>

<sup>&</sup>lt;sup>6</sup> The 2012 poverty-pay rates for young non-college degree male workers in the U.K., Canada and Australia were 43.2%, 35.7% and 30.8%.



Figure 4: The Incidence of Poverty-Pay for Young (18-34) Workers with Less than a College Degree for Five Rich Countries, 1980-2017 Panel A: Males

Source: see Howell, 2021.

This broad pattern is similar for young less-educated women (Figure 4B) but at higher levels. The poverty-pay rate rose, but much less sharply than for U.S. men, from 52 to 67 percent between 1980 and 2017, with most of the increase after 2001. British women also experienced sharply rising poverty-pay rates, from 45 to 60 percent between 1994 and 2014 – again, this took place mainly in the most recent half of the period (after 2005). Canadian rates have also been relatively high but stable, ranging from 50 to 56 percent between 1998 and 2016. Australian

female poverty-pay incidence has been much lower but rose substantially between 2002 and 2013, from 30 to 40 percent. French poverty-pay rates rose from 29 percent in 1990 to over 37 percent in 1997 and then fell back to 28 percent in 2012, which compares to 2012 rates of 36 percent for Australia, 53 percent for Canada, 58 percent for the U.K. and 68 percent for the United States.

These five-country patterns of wide and broadly stable ranges of poverty-pay incidence for young less-educated workers over the last four decades are much like those reported for all workers in the OECD data for the larger set of rich countries shown in Figure 3.

#### 2. The Measurement of Institutional Bargaining Power

There is good reason to think that the balance of bargaining power between workers and employers derived from longstanding institutional and policy regimes can do a good job of accounting for the pay inequality patterns observed in figures 1-4. Leading indexes of labor market regulation include the Fraser Institute's Labor Market Regulation Index (FI-LMRI) - closely aligned with the Heritage Foundation's Index of Labor Freedom - and Cambridge University's Centre for Business Research Labour Regulation Index (CBR-LRI).

The Fraser Institute's LMRI reflects the strength of six regulations that "infringe on the economic freedom of employees and employers", including hiring and firing regulations, wage-setting regulation (the statutory minimum wage and centralized collective bargaining), hours regulations, and the mandated cost of worker dismissal.<sup>7</sup> Fraser's index was developed explicitly for the purpose of promoting efforts to weaken protective labor regulations. The substantive and transparently ideological quality of the FI-LMRI has been sharply criticized by the International Labour Office (Aleksynska and Cazes, 2014), among others.

The Cambridge University's CBR-LRI reflects 40 indicators of protective legal regulations across five employment relation sub-groups between 1970 and 2014. "The LRI is based on a 'fine-grained' approach to the coding of primary legal sources which makes it possible not just to indicate the presence or absence of a worker-protective law in a given country, but to estimate magnitudes concerning the degree of protection conferred on workers by a given legal rule" (Deakin et al., 2014, p. 7).<sup>8</sup> These 40 indicators capture a wide range of regulations of the employment relationship, which in turn help account for important differences

<sup>&</sup>lt;sup>7</sup> The first, second and fifth sub-components measure hiring and firing restrictions and are highly correlated, effectively placing a premium on this dimension of labor regulation; conscription is not relevant for OECD countries (see https://www.fraserinstitute.org/economic-freedom/approach).

<sup>&</sup>lt;sup>8</sup> The CBR-LRI is described by Deakin et al. (2014, p. 7) as the regulation of "alternative employment contracts (self-employment, part-time work, fixed-term employment and temporary agency work), working time (daily and weekly working time limits and rules governing overtime and nightwork), dismissal (procedural and substantive rules on termination of employment), employee representation (rules on collective bargaining, the closed shop and codetermination), and industrial action (the extent of legal support for the right to strike, including rules on secondary and political strikes) (italics added)."

in job quality across countries over the last five decades. But some crucial wage-related regulations are not included in the index, which can be illustrated by the case of Australia. While ranking 3rd lowest (weakest) on the LRI among OECD countries, just above the New Zealand and the US, Australia performs much better on the incidence of low pay and wage inequality than countries with similar LRI scores. This failure of the LRI to align well with the quality of earnings outcomes for Australia reflects the absence of indicators that have direct impacts on worker bargaining power, like the strength of the minimum wage, collective bargaining coverage, and the use of Wage Boards to directly set wages for many jobs (Whiteford, 2018; Dube, 2018).

The approach taken here is to develop a protective labor regulation index that measures the strength of institutions and policies likely to be important for collective worker bargaining power over pay – power that extends beyond what individual workers derive from the balance of supply and demand for the skills they bring to the market. Two sets of institutions and policies contribute to this collective power: wage-setting institutions and employment and income protection policies.<sup>9</sup> The former have direct effects on wages through collective bargaining agreements and government directives like the statutory minimum wage and wage councils (e.g., Australia). The latter, employment regulations and income protections, affect wage outcomes by helping to determine the risk and cost of job loss – greater risk and higher cost can be expected to translate into lower worker bargaining power. These social protections can legally restrict employer discretion over the employment relationship via employment protection laws (which regulate the power of employers to harass and fire), maintain living standards in the case of job loss or nonemployment (unemployment benefits and guaranteed income support), and improve the probability of a successful match with a decent job on entry or re-entry to the labor market (active labor market programs).

Table 1 shows four wage-setting and four employment and income protection indicators for each of the five countries for 1998 (or the closest year to 1998), 2014, and 2017-19. These are all long-standing and widely used indicators, all but one taken directly from the OECD (see Table 2). Weighted equally, the Institutional Bargaining Power (IBP) Index is the sum of the scores on these eight protective institution indicators. With one exception (union density), the country rankings are nearly identical, and even the relative index scores are not very sensitive to the choice of the specification of each component indicator, such as the family type for guaranteed minimum income support or the duration of unemployment benefit.<sup>10</sup>

<sup>&</sup>lt;sup>9</sup> A third source of collective bargaining power, especially for workers in relatively unregulated labor markets, is the state of aggregate demand for labor as measured by employment and unemployment rates. But the relationship between protective labor regulation and these indicators of aggregate labor demand are complicated (see Howell, Baker, Glyn and Schmitt, 2007) and, as shown below, our institutional bargaining power index could hardly perform better as a predictor of cross-country patterns of bottom-end pay inequality.

<sup>&</sup>lt;sup>10</sup> For the sources of these indicators, see Table 2.

Wage-setting institutions are represented by collective bargaining coverage (the share of workers whose pay is determined collectively), union density (the union member share of employees), the centralization of bargaining power (the level at which bargaining takes place and the extent to which there is multi-employer bargaining), and the national legislated minimum wage (the Kaitz index - the ratio of the minimum wage to the median wage). Employment protection and income-supporting indicators capture the strictness of employment protection (for individual and collective dismissals under regular contracts); the generosity of income support when unemployed (net replacement rates over 12 months for a single worker without children); the generosity of public income support that is not conditional on employment or unemployment benefit eligibility (as a percent of median disposable income for a single person without children, not including housing subsidies); and levels of active labor market policy spending (e.g., on training and job search, as a percent of GDP).

The country scores for each indicator are calculated by taking the ratio of the value of each country's indicator relative to that of the most protective country, which is given a "5" (see the footnote to Table 1). This rescaling makes it possible to directly compare countries across the indicators and aggregate their scores into a single index. As the three panels show (1998, 2014, 2019), the scores on these eight bargaining power indicators have been highly stable over at least the last two decades, so I will focus discussion on the most recent results (the bottom panel). Beginning with the four wage-setting indicators, France scored highest on three. The exception is union density (UD), on which France scored lowest (8.8%), even below the U.S. (10.1%), and far below the highest, Canada (25.9%). But as the collective bargaining coverage (CBC) indicator shows, despite extremely low union membership, nearly all French workers are covered by collective contracts (98.5%). The French CBC rate was the same as Australia's (98%), and far above Canada, the U.K. and the U.S. (28.1%, 26% and 11.6%). According to Caroli and Gautié (2008: 20), in the French private sector "unions are more powerful than such low membership levels would allow in other countries. This follows from the rules governing labor representation and the legal extension of collective bargaining agreements across branches."

It is well-established that collective wage-setting raises worker wages and reduces wage inequality (e.g., Wallerstein, 1998; Western and Rosenfeld, 2011; Jaumotte and Buitron, 2015; Farber et al., 2018). One reason to include trade union membership (UD) as a measure of collective bargaining power is that it can capture important dimensions of worker political power. For any level of bargaining coverage, a larger the union membership share may indicate a more powerful political voice of workers which can be particularly important for the design and enforcement of labor market regulations that help frame the collective bargaining process. Importantly, the political power of trade unions, both through voting by members in general elections and through union lobbying power, may strengthen protective labor regulations for workers not covered by collective bargaining contracts. In addition to wage increases and

grievance handling (job quality promoting) for members, Crouch (2017: 53) argues that "unions form part of wider political movements seeking social and fiscal policies that reduce inequality and provide security for the lives of workers and their families."

	Wage-Setting Institutions				Employment and Income Protection Institutions				
	CBC	UD	CWB	MW (Kaitz)	EPL	UB_NRRs	ALMP	GIS	Total (IBPI) **
1998-2001	(1998)	(1998)	(1998)	(1998)	(1998)	(2001)	(1998)	(2001)	(1998- 2001)
France	4.77	1.61	5.00	5.00	5.00	5.00	5.00	2.95	34.32
Australia	5.00	4.70	3.20	4.93	2.82	2.70	1.52	5.00	29.87
UK	1.81	5.00	2.00	3.44	2.67	1.35	1.70	3.08	21.04
Canada	1.58	4.78	2.00	3.43	1.17	2.23	2.09	3.08	20.35
US	0.76	2.24	2.00	3.20	0.18	0.61	0.78	0.90	10.66
2014									(2014)
France	5.00	1.70	5.00	5.00	5.00	5.00	5.00	5.00	36.70
Australia	4.97	2.86	3.48	4.27	3.34	2.25	1.36	5.00	27.52
UK	1.40	4.73	2.17	3.83	2.69	1.45	1.25	3.93	21.46
Canada	1.43	5.00	2.17	3.60	1.18	2.10	1.20	3.39	20.07
US	0.60	2.03	2.17	2.93	0.19	0.65	0.54	1.25	10.36
Most Recent	(2018)	(2018)	(2019)	(2019)	(2019)	(2019)	(2017)	(2019)	(2017- 2019)
France	5.00	1.70	5.00	5.00	5.00	5.00	5.00	5.00	36.70
Australia	4.97	2.64	3.64	4.36	3.26	2.42	1.38	4.83	27.50
UK	1.32	4.52	2.27	4.49	2.63	1.33	1.32	3.45	21.32
Canada	1.43	5.00	2.27	4.17	1.15	2.42	1.26	3.45	21.15
US	0.59	1.95	2.27	2.57	0.18	0.63	0.57	1.03	9.80

 Table 1: Institutional Bargaining Power:

 Labor Regulation and Social Protection in Five Rich Countries, 1998-2019\*

\* The scores for each variable are calculated by giving a "5" to the country with the highest value and then giving the other four countries scores that reflect their country's value relative to the highest country's value. For example, among these five countries, Australia had the highest collective bargaining coverage in 1998, 98%, and France was next, at 93.4%. As a result, Australia gets a score of 5 and France a score of 4.77 (.934/.98 \* 5).

\*\* IBPI: Institutional Bargaining Power Index. This is calculated as the simple average of the eight components.

Sources: All variables are taken from the OECD except Centralized Wage Bargaining (CWB), which is from Visser's ICTWSS database (<u>http://uva-aias.net/en/ictwss</u>). These are Collective Bargaining Coverage (CBC), Union Density (UD), Strictness of Employment Protection (EPL), Unemployment Benefit Net Replace Rates (UB\_NRRs), Guaranteed Income Support (GIS), and minimum wage generosity as measured by the Kaitz Index (the ratio of the national legal minimum wage to the median wage).

In addition to bargaining coverage and union membership, worker bargaining power is greater the more inclusive the bargaining coverage is – the extent to which high bargaining power is formally extended to workers with much less power. Multi-employer bargaining makes it possible to raise wages at low-wage firms and establishments and compress bottom-half wage inequality. This will take place the more coordinated (across firms) and centralized (across

sectors and industries) the bargaining.<sup>11</sup> There are several closely related measures that would capture this inclusiveness. I use Visser's centralization of wage bargaining (CWB) indicator, which is defined by the predominant level at which bargaining takes place, adjusted for the availability of exit options for firms to bargain at the enterprise level. CWB is measured on a scale of 1-5, ranging from central bargaining across industries (=5) to bargaining at the industry level (=3), to bargaining at the local or company level (=1) (Visser, 2014: 15).<sup>12</sup> Table 1 reports that the U.S., U.K. and Canada get the same score, 2.27 (reflecting bargaining at level 1: predominantly at the plant or firm level), below that of Australia's 3.64 ( CWB level of 1.6, indicating mainly company and some sector level bargaining), and less than half of the French score of 5 - the highest CWB score of the five countries, 2.2, indicating somewhat more bargaining at the sector level than Australia.

The fourth indicator of direct wage-setting power is the statutory minimum wage, whose explicit purpose is to raise wages at the very bottom of the distribution and reduce bottom-end inequality. Since the adoption of a national minimum wage by the U.K. in 1998, all five countries have set a legal floor for wages. A conventional measure of the relative impact of the statutory minimum on wage compression is the Kaitz Index - the ratio of the legal minimum to the median wage for full-time workers. In 2019, this index ranged from 61 percent for France to 32 percent for the U.S., with Canadian, U.K. and Australian ratios falling between 51 and 55 percent. Column 4 shows these Kaitz ratios scaled to 5, with France at the top (=5) and the US at the bottom (=2.57). It is notable that between 1998 and 2019 the French Kaitz score remained nearly constant (61-62%), fell in both the US (from 39% to 32%) and Australia (from 61% to 54%), but rose substantially in the U.K. (42% to 55%) and Canada (42% to 51%).

Aggregating the scores for these four indicators produces a wage-setting bargaining power score that varies considerably across the five countries. Even with an extremely low level of union density (membership share), France scores the highest of the five countries (16.7) for 2018-19. Among the four rich liberal market economies, wage-setting power ranged from 15.6 for Australia to just 7.4 for the US. At 12.9 and 12.6, the scores for Canada and the U.K. are closer to Australia than the U.S., again an extreme outlier.

<sup>&</sup>lt;sup>11</sup> As Bosch et al. (2010: 99) explain, "A precondition for high coverage as well as for inclusiveness within industries seems to be multi-employer bargaining at the industry or sectoral level. This gives employers' organizations an active role in collective bargaining, which they do not have if decentralized bargaining is dominant, as it is in the United Kingdom and the United States. Multi-employer bargaining makes the coordination of collective agreements between different industries easier. It also gives collective bargaining more stability because, to an extent, it takes wages out of competition within any given industry." For cross-country evidence on the effects of institutions on wage inequality, see Wallerstein (1998), Koeniger et al. (2007); Jaumotte and Buitron (2015).

<sup>15)</sup> as the level of bargaining adjusted for the extent and opportunities for enterprise-level bargaining. This measure overlaps considerably with another important empirical measure that does not appear in Table 2, the type of bargaining coordination, which varies from centralized and/or state-imposed to fragmented bargaining (plant or enterprise level only).

Complementing these wage-setting indicators, the four social policies and programs shown in Table 1 can provide workers with various kinds of indirect bargaining power via employment and income protection. Workers will tend to have more voice and bargaining power the less risky is job loss, the more likely they can get a decent job if they lose one (through unemployment benefits that are higher and of longer duration, and through programs that offer training and job search support), and the less dependent they are on employment for subsistence income.

At the same time, the effects of these employment and income protections may not unambiguously promote worker bargaining power. High levels of employment protection for workers on regular contracts ("insiders") may contribute to even less bargaining power for lowwage workers with little or no employment protection, like many temporary workers or those on short-term fixed contracts ("outsiders"). France has attempted to address this threat of "dualism" (or "segmentation") with extremely strict employment protection for many categories of temporary workers. Similarly, job search and training programs with work requirements designed to increase employment may lower wages by increasing labor supply to some lowwage jobs (the "reserve army" effect), and greater income support that is not work conditional may lead some employers to offer - and some workers to accept - lower wages (the "Speenhamland" effect).

But as reported below, across these five rich countries – and as shown below, across the rich world - countries with strong collective wage-setting institutions also tend to have the most protective employment and income policies, and on balance these protections must be assumed to enhance overall worker pay-related bargaining power. In short, countries with social norms and political processes that maintain strong wage-setting institutions of the sort that appear on the left side of Table 1 will also tend to have complementary employment and income protection institutions. The remainder of this section describes in more detail these social protection policies and programs (the right side of table 1).

The OECD's employment protection law (EPL) index for individual and collective dismissals has a strictness scale that runs from unregulated (=0) to most regulated (=6). By far the most protective is France, which gets a 2019 EPL score of 2.56. At the opposite end of the employment protection spectrum, the U.S. score is .09. Between France and the U.S. are Canada (0.59), the U.K. (1.35) and Australia (1.67). Rescaled, Table 1 shows that France gets the top score (=5) followed by Australia (3.26), the U.K. (2.63), Canada (1.15) and the U.S. (0.18).<sup>13</sup>

<sup>&</sup>lt;sup>13</sup> The OECD also produces an EPL indicator for temporary contract workers (not shown in Table 1), which shows a similar cross-country pattern: for 2019, the least protective are the U.S. and Canada (0.25), followed by the U.K. and Australia (0.38 and 0.88), and far above the others, France (3.0).<sup>13</sup> But even with an EPL temporary contract score some 12 times higher (more protective) than the U.S., at least some French workers must cope with employment precariousness not dissimilar to what most American employees experience. According to Bosch et al. (2010: 117), "… in addition to the standard forms of the open-ended contract and the temp agency contract, which are relatively well-protected contracts, French law also permits a set of far less protective contracts, including 'sporadic'

Although eligibility rules vary, dismissed workers actively looking and available for work are eligible for unemployment insurance benefits in all five countries, but the level and duration of benefits show large differences across the four liberal market economies, as well as between them and France. Column 6 reports the rescaled OECD unemployment benefit net replacement rates, averaged over a 12-month duration for a single worker earning 67 percent of the average worker's net in-work income. The OECD calculates this replacement rate for France at 64 percent, which compares to 31 percent for comparable Australian and Canadian workers, 17 percent for U.K. workers, and just 8 percent for American workers.<sup>14</sup> Scaled to 5 (France), column 6 shows a relative 12-month duration replacement rate of 2.42 for Australia and Canada, 1.33 for the U.K., and .63 for the United States.

Many European countries with relatively high unemployment benefit rates require participation in activation programs, which offer job application and placement support, vocational training, and access to public works jobs programs. On the employer side, activation efforts can help workers with incentives for direct job creation (usually in the public or nonprofit sectors) and job sharing, as well as subsidies for wages, training and apprenticeship. If effective, shortened spells of unemployment, improved matching between jobs and workers and increased productivity (skills from training as well as work performance) can raise wages, but without collective bargaining or a meaningful minimum wage, these programs could offset wageenhancing effects by increasing the supply of workers competing for jobs. But countries that invest heavily in active labor market policies (ALMP) that promote highly regulated employment and worker skills tend also to be countries with high scores on wage-setting, employment and income protection, and low shares of poverty-pay jobs.

The OECD's Active Labour Market Policy (ALMP) indicator is a measure of public expenditures on these activation programs as a share of a country's GDP. For our five countries, the U.S. is located at the very bottom, at 0.1 percent of GDP, and France at the top, at 0.87; in the middle are Canada, the U.K. and Australia with similar spending shares (0.22, 0.23 and 0.24 percent). With France at 5, column 7 shows rescaled scores for the U.S. (0.57) that are far lower than for Canada, the U.K. and Australia (1.26, 1.32, and 1.38). ALMP spending by France is 4-10 times greater than these four liberal market economies, but its effort (0.87%) is similar to Belgium's (.88%), considerably below Sweden's (1.25%) and far below Denmark's (1.96%).

Workers who are ineligible for unemployment benefits, or who fail to find a job that pays enough to cover basic subsistence needs after their benefits run out and after participation in activation programs, need income to get by. No matter how meager, all rich nations offer some

permanent contracts, seasonal contracts, derogatory fixed-term contracts, and special contacts for labor market policy schemes, which provide little legal protection against dismissal or unequal treatment."<sup>14</sup> These 12-month duration replacement rates are the same as for the 6-month and 18-month duration rates for

<sup>&</sup>lt;sup>14</sup> These 12-month duration replacement rates are the same as for the 6-month and 18-month duration rates for Australia, France, and the U.S. (31%, 64%, 8%), but the average 6-month duration rate is much higher than the 12-month rate for Canada (63% vs 31%) and the U.K. (34% vs 17%).

guaranteed income to working age adults that is unconditional on employment, especially for those with children, and this offers workers at least some bargaining power. Summarizing the country case studies of six low-wage sectors in the U.S., U.K., France, Germany, the Netherlands and Denmark, Gautié and Schmitt (2010: 10-11) conclude: "Also playing a role in determining the inclusiveness of national wage-setting institutions are the availability and generosity of government benefits for nonworking adults. Set high enough, income support can create an effective floor for wages in the low-wage labor market." Not surprisingly, liberal market economies provide the least generous guaranteed minimum income.

The OECD's Guaranteed Minimum Income indicator is a measure of safety-net income for working-age adults (families), defined as "the income of selected jobless families that claim Guaranteed Minimum Income (GMI) benefits... expressed as percentage of the median disposable income."<sup>15</sup> The 2019 values for a single person without housing benefits for the five countries range from France (29%) at the top to Australia (28%), the U.K., and Canada (20%) in the middle, to the U.S., which is far below the rest (6%).<sup>16</sup> Table 1 shows the rescaled values: France gets the top score of 5, Australia is nearly as high (4.83) followed by Canada and the U.K. (3.45), and at the bottom, the U.S. (1.03).

In sum, Table 1 shows highly stable rankings on these eight bargaining power indicators across the five countries for 1998, 2014 and 2017-19. With the exception of Union Density (UD), France gets the highest score (5) and the U.S. gets the lowest (or tied lowest) on every indicator. The cumulative scores reported in column 9 – the IBP index - show large differences across these countries. Out of a possible maximum score of 40 (8x5), the IBP scores are 36.7 for France, 27.5 for Australia, 21 for the U.K. and Canada, and 9.8 for the United States.

To put these results in perspective, Figure 5 presents a similarly defined IBP index for a larger set of 21 rich OECD countries. Figure 5 excludes the minimum wage component, resulting in a maximum score of 35.<sup>17</sup> France (21.5) is located near the top in 6th place; Australia (14.1) is 15th, well above Canada and the U.K. (10.5 and 10.2), which in turn have IBP scores more than twice that of the U.S. (4.0) – the lowest scoring of the 21 countries. Most countries show little change in the IBP index between 2000 and 2017-19, but it is notable that two of the most

<sup>&</sup>lt;sup>15</sup> https://stats.oecd.org/Index.aspx?DataSetCode=IA

<sup>&</sup>lt;sup>16</sup> This indicator is defined to measure only cash income and not housing benefits. Although housing support counts as an important source of a broader definition of income, especially for low-wage working families, the OECD does not include other important subsidies, such as for health care and education. Including housing benefits, the GMI for a single person with two children is highest for the U.K. (59%), followed by France (46%), Australia (44%), Canada (37%) and the U.S. (19%). The main effect of the inclusion of housing benefits would be to substantially increase the U.K.'s score to a level well above France and Australia, and far above Canada. The U.S. would still hold last place by an even larger margin.

<sup>&</sup>lt;sup>17</sup> Several rich social-market countries do not have a national legal minimum wage (or one that can be aggregated from regional ones, like Canada). Instead, minimum wages are effectively imposed via the collective bargaining system.

protective countries, Denmark and Belgium, have become more so, as has Italy, while two liberal market economies - Australia and the U.K. – have declined.



Figure 5: The Institutional Bargaining Power Index for 21 OECD Countries\*

Source: author's calculations. This IBP index is calculated in the same way as the 5-country index shown in Table 2 with the exception that it excludes the minimum wage component, so there are seven rather than eight indicators, resulting in a maximum score of 35 rather than 40.

#### 3. Institutional Bargaining Power and Earnings Quality Across Rich Countries

Table 1 reported IBP scores for five countries that unambiguously locate the U.S. at the bottom of the collective bargaining power spectrum and France at the top, each by wide margins. Figures 1-4 showed that the both measures of pay inequality (the 90-10 and 50-10 ratios shown in figures 1 and 2) as well as the bottom-end pay inequality and pay quality measures (low-pay and poverty-pay incidence reported in figures 3 and 4) show the same cross-country pattern. More narrowly focused, figure 4 confirms this pattern for young male and female workers with less than a college degree. This section takes the analysis a step further by presenting the cross-country statistical correspondence between the IBP index and the incidence of poverty-pay and decent-pay jobs<sup>18</sup> for the five-country sample as well as the low-pay share for the larger set of OECD countries.

<sup>&</sup>lt;sup>18</sup> "Low-pay" incidence is measured by the OECD as the share of paid less than 2/3 of the full-time earnings – either hourly wages or hourly gross earnings depending on the country). For the five-country sample, poverty-pay is defined the same way but also includes those employed involuntarily part-time but paid above this wage threshold.

Figure 6 presents a scatter plot of the IBP score and the decent-pay share of employment for all workers (18-64) for each of the five countries for two points in time, 1998 and 2012-14. The figure shows a close statistical correspondence between the IBP score and the decent-pay share for both years ( $R^2$  of .571 for 1998 and .833 for 2012-14). But for the U.K., the fit would be even higher - the U.K.'s decent-pay share is substantially lower than what would be expected given its IBP score.



# Figure 6: Institutional Bargaining Power and the Incidence of Decent-Pay for All Workers (18-64), 1998-02 and 2012-14\*

\*See Table 1 for the measurement of the IBP index and footnote 16 for the incidence of decent-pay jobs.

For the same population, Figure 7 reports an even tighter fit between the IBP index and the incidence of poverty-pay ( $R^2$  of .72 for 1998 and .93 for 2012-14). The lower correlation for the late 1990s reflects in part the similar poverty-pay shares for the U.S., Canada, and the U.K. despite the much lower IBP score for the United States. The increase in the American incidence of poverty-pay jobs and the small declines for the U.K. and Canada appear to have pushed up the overall statistical association for 2012-14.

The incidence of decent-pay jobs is defined as the share of employees paid an hourly rate greater than 2/3 of the mean wage for full-time prime-age workers and not employed involuntarily part-time.



Figure 7: Institutional Bargaining Power and the Incidence of Poverty-Pay for All Workers (18-64), 1998-2002 and 2012-14\*

\*See Table 1 for the measurement of the IBP index and footnote 15 for the incidence of poverty-pay jobs.

Figures 8 and 9 present scatterplots for the IBP index and the incidence of poverty-pay for young female and male workers with less than a college degree for the five countries. For young non-degree female workers, Figure 8 shows a close association for 1998 ( $R^2$ =.733) and an almost perfect fit for 2012-14 ( $R^2$ =.951). Over these two decades the U.S. and U.K. show big increases in the poverty-pay share for these young female workers with no change in the IBP index, while the increases for Australia and France came with small declines in the bargaining power index. For young male workers without a college degree, Figure 9 shows a very close fit for 1998 ( $R^2$  = .894) and, like for their female counterparts, a nearly perfect one for 2012-14 ( $R^2$ =.959). Similar dynamics to those for female workers appear here for men: poverty-pay incidence for the U.S. and U.K. increased sharply in the absence of any change in the IBP index, Canada remained unchanged on both indicators, and the small declines in the IBP index for France and Australia came with a small increase in poverty-pay share for France but no change for Australia.



Figure 8: Institutional Bargaining Power and the Incidence of Poverty-Pay for Young (18-34) Female Workers without a College Degree, 1998-02 and 2012-14\*

\*See the footnote to figure 7.



Figure 9: Institutional Bargaining Power and the Incidence of Poverty-Pay for Young (18-34) Male Workers without a College Degree, 1998-02 and 2012-14

This close statistical fit also holds for the larger set of rich the two OECD inequality indicators, the incidence of low pay and the 50-10 earnings ratio. Figure 10 shows a scatterplot of the OECD's measure of low-pay incidence and a slightly modified IBP index for 2014 for 18

<sup>\*</sup>See the footnote to figure 7.

countries (see the footnote to the figure). The U.S. is located by itself in the top left corner - very low institutional bargaining power and a very high incidence of low earnings. Canada and the U.K. appear towards the U.S. end of the spectrum and Australia is located in the middle. With the highest IBP scores and lowest low-pay incidence, Finland, Denmark, and Belgium appear in the bottom right corner (the OECD does not report an incidence figure for France). The trend line shows a clear statistical correlation ( $R^2 = 0.486$ ) – that is, almost half of the variation in low pay incidence across these countries is accounted for by the IBP index.

Figure 11 uses the 50-10 ratio to presents another perspective on bottom-half earnings quality in the rich world. The statistical association for these 20 rich countries is evident, with no major outliers ( $R^2$ =0.589). Again, the U.S. is situated at the very top left corner; Canada, the U.K. and Australia are located in the middle but towards the U.S. end of the spectrum. France appears much further towards the bottom right, near countries with the highest IBP scores and lowest bottom-end inequality: Finland, Sweden, Denmark and Belgium.



Figure 10: Institutional Bargaining Power and Low Pay Incidence for 18 OECD Countries, 2014\*

\* The OECD's low pay incidence indicator (the share of workers with gross earnings less than two-thirds of the median for all full-time workers) is not available for Norway, France, and Sweden. As explained in the previous section, the IBP index for the larger set of OECD countries is calculated like the five-country index (figures 7-9) but does not include the minimum wage component, which was not available for a number of countries, so the maximum score is 35 (7x5).



Figure 11: Institutional Bargaining Power and the 50-10 Ratio for 21 OECD Countries, 2014

#### 5. Conclusion: Political Choices and Low Pay

The canonical competitive model explains the structure of wage hierarchies and their change over time by the relative demand and supply for worker skills. The consequence of protective regulatory interventions that meaningfully compress the wage distribution and raise wage levels is lower employment and higher unemployment (Boeri and van Ours, 2013: 8). The cross-country evidence shows little support for these predictions. Broecke et al. (2019) cite an older literature, including Blau and Kahn (1996, 2005) and Devroye and Freeman (2001), which finds that the net supply of skills (the balance of the quantity supplied and demanded) can explain only a small part of the variation in wage patterns across countries (see also Howell and Huebler, 2005). More recently, with the help of a superior measure of cognitive skills - the OECD's Survey of Adult Skills (PIAAC) - studies by Pena (2014), Paccagnella (2015), Jovicic (2015) and Broecke et al. (2019) confirm that shifts in the market for skills cannot offer a plausible account of cross-country patterns of wage inequality.<sup>19</sup> At the same time, there is also little persuasive

<sup>&</sup>lt;sup>19</sup> Broecke et al. (2019: 253) revisited this debate with a "demand and supply model to study the relationship between the net supply of skills ... and wage inequality". They find that "market forces do indeed matter" but only for the top half of the distribution (as measured by the 90-50 wage ratio), and even here, the skills model accounted for less than one-third (29 percent) of the gap between the United States and other rich countries. In sum, their measure of the net supply of skills "explains little of the higher wage inequality at the bottom of the wage distribution" (253). While measures of cognitive skills show no effect on the 50-10 wage ratio in any of their tests, when controlling for the net supply of skills, a number of institutional variables (the minimum wage, collective bargaining coverage, the size of the public sector) are found to be highly significant predictors (Table 7.5, panel c).

evidence that cross-country patterns of employment/unemployment performance are explained by the strength of protective labor market regulations (Baker et al., 2005; Baccaro and Rei, 2007; Avdagic and Salardi, 2013; Brancaccio et al., 2020; see also Howell, 2021, Section 4).

There is, however, considerable support for the political economy view that differences in institutional bargaining power can do a good job of explaining patterns of bottom-end pay quality and inequality across the rich world. Detailed occupation and industry book-length case studies for each of six rich countries led the Russell-Sage Foundation's (RSF) Low-Wage Work Project (Gautié and Schmitt, 2010) to conclude that the inclusivity of labor market institutions and policies largely accounted for the patterns of low wages in the rich world.<sup>20</sup> This conclusion is consistent with a large recent empirical literature (Wallerstein, 1998; Koeniger et al., 2007; Jaumotte and Buiton, 2015).

This paper contributes to this cross-country literature by exploring the statistical correspondence between new indicators of earnings quality and institutional bargaining power. This research was designed to compare the U.S. with other rich countries in bottom-end earnings performance and to explore the extent to which differences in the protectiveness and inclusivity of national institutions can help explain relative American pay performance. For this reason, three of the comparison countries were also Anglophone, liberal market economies. This approach ought to be extended to other rich countries to explore further the effects of institutional regimes on the earnings quality of jobs at the bottom of national pay distributions and how pay distributions vary with the generosity of redistribution not conditional upon employment, both in the form of cash income and essential social services like health, education, and pensions. With so little social support of this sort for working-age people, pay quality and inequality should be relatively low in the United States. The findings of this project show that just the reverse is the case, a consequence of over four decades of political choices.

<sup>&</sup>lt;sup>20</sup> The RSF project's findings are summarize by Appelbaum et al. (2010, p. 23). "Among our six countries, the more inclusive the labor market institutions (collective bargaining, minimum wages, nonwage benefits, and others), the lower the share of low-wage work in the national economy (Denmark and France). Wherever inclusiveness has been eroded by the proliferation of legal and extralegal exit options - which put some types of workers (part-timers and immigrant or migrant workers, for example) outside of the established inclusive system - low-wage work has increased sharply (the Netherlands and the United Kingdom in the 1980s and early 1990s and especially Germany since the mid-1990s). The specific institutions and policies that yield an inclusive system vary substantially across countries."

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