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Labor's Pendulum: Scarcity, Glut, and Power Through World History

Introduction: The Tide of Labor Supply and Power

In the grand sweep of history, the fortunes of workers have often risen and fallen on the tide of labor supply. When workers are few and in demand, their bargaining power swells – wages climb and conditions improve. When workers are abundant or easily replaced, the opposite occurs: wages stagnate or fall, and rights erode. This narrative arc has played out repeatedly across continents and centuries. After the **Black Death** ravaged 14th-century Europe, survivors suddenly found their labor in short supply – and they leveraged that scarcity to demand higher wages and freedom from feudal bonds [1] [2]. In stark contrast, on colonial plantations flush with enslaved or indentured laborers, or in industrial cities teeming with unemployed workers, those who toiled had little power to negotiate and lived under grinding conditions. Even in modern economies, a moderate oversupply of labor – whether due to globalization, recession, or automation – has been enough to hold down pay and weaken job security [3].

This historical report follows the swinging pendulum of labor supply and its effects on workers' lives, from **ancient times** through the **medieval plague era**, the **colonial age**, the **Industrial Revolution**, the **Great Depression**, and into the **globalized 20th century** and **technological 21st century**. We will see in narrative detail how labor scarcity empowered common people – and how labor gluts, even moderate ones, undermined their position. Across Europe, Asia, Africa, and the Americas, the same thesis emerges: when hands are few, those hands gain strength; when hands are many or easily replaced, they lose their grip on a decent livelihood. In telling these stories, we draw on the voices of the past – chroniclers, economists, workers themselves – to illustrate how profoundly shifts in labor supply have shaped wages, worker rights, and bargaining power throughout history.

Scarcity and Survival After the Black Death (14th Century Europe)

In the middle of the 14th century, a catastrophe decimated Europe's population – and paradoxically liberated the survivors. The **Black Death**, a bubonic plague pandemic, swept through Europe starting in 1347 and killed at least one-third of the people [4]. Whole villages were left silent. Fields went untilled for lack of farmers; workshops sat idle for lack of craftsmen. For medieval peasants and laborers, it was the end of the world they had known – and the beginning of a new one. Amid the horror and grief, an unprecedented **labor scarcity** had emerged. One English chronicler marveled (with aristocratic dismay) that because workers were so few, "Aristocrats and high clergymen not only had to pay triple wages to those toiling in their fields, but, even worse, they themselves had to perform manual labor" [5]. The ruling classes found the social order upended: suddenly the mighty imagined themselves forced to swing sickles in their own fields, a spectacle of "unthinkable" inversion that underscored how severe the labor shortage had become [6].

For the peasants who survived the plague, this inversion was very real. They understood that **their labor had become more valuable** in a depopulated world [7]. Contemporary records show workers demanding

– and receiving – higher wages in many places. In Rochester, England, a monkish chronicler recorded with shock that lords were having to pay *three times* the usual wage to field laborers [5]. Across Europe, landowners and guild masters faced a "sharp increase in competition for workers" and found that laborers, aware of their newfound scarcity, *"had increased bargaining power and commanded higher wages."* [1]. In manorial account rolls and city wage data from the late 1300s, historians indeed find evidence that **wages rose significantly in the decades after the plague** [8]. One economic analysis notes that in England, farm wages roughly doubled between 1350 and 1450 [8]. Real wages of English workers peaked at levels "not again equaled until the 1880s" – a stunning fact suggesting how extraordinary the 14th-century gains were [9].

Yet these gains did not come without struggle. Europe's elites were deeply alarmed by the empowerment of the lower classes. Rather than accept higher labor costs, the landed nobility and urban patricians fought to hold back the tide. In England, King Edward III – pressured by landowners – issued the **Ordinance of Labourers (1349)**, followed by the **Statute of Labourers (1351)**, which aimed to *freeze wages at pre-plague levels* and legally compel workers to serve if offered work at those old wages [10] [11]. The Statute of Labourers forbade anyone to pay or receive higher pay than what prevailed in 1346, before the plague [12]. It also made it a crime for jobless peasants to refuse work or to leave their home village in search of a better deal [11]. This was essentially an attempt to **reinstate the status quo ante** – to nullify the workers' newfound bargaining power by decree.

Enforcement of these laws proved spotty (it's hard to police every farm and town), and **wages did rise** in practice despite the statutes [13] [14]. Many peasants simply defied the law. In 1352, for example, the prior of Bradenstoke complained that a man named Edward le Taillour "left his employment before the term was up" and that another laborer demanded an *"excess" wage of six shillings eightpence* for reaping a harvest [15]. Court records are filled with cases of workers moving to wherever wages were highest – in open *"contempt of the king"* and his statute [16]. The authorities could accuse these laborers of being greedy or "idle" under the law, but in truth they were doing rationally what their lords had long done: **seeking the best price for their work**.

The tug-of-war between labor and elites in post-plague Europe sometimes turned violent. When subsequent generations of peasants saw their gains threatened by taxes and renewed feudal pressures, they revolted – notably in the **English Peasants' Revolt of 1381**. One cause of that uprising was the lingering resentment that the laws had capped wages and tried to bind workers in place, denying them the full fruits of labor scarcity [17] [18]. The rebels explicitly demanded the abolition of serfdom and the freedom to work for wages of their choosing. Though the revolt was crushed, serfdom in England did continue to wither in the century after the Black Death, partly because a free wage economy was taking hold in response to the labor shortage [19].

Elsewhere in Europe, similar dynamics played out. In Western Europe broadly, historians note that after the plague, *"wages rose, inequality decreased, feudalism ended."* [20] While that summary may be a bit simplified, it captures the essence: **labor scarcity shifted power toward the lower classes**. In Eastern Europe, by contrast, where feudal landlords managed to clamp down harder, serfdom actually intensified after the 14th century – illustrating that beneficial outcomes for workers were not automatic even with scarcity, but required seizing opportunity. In the West, workers for a time enjoyed better diets, higher pay, and more mobility than their forebears. A 14th-century Florentine chronicle notes that after the plague, many rural laborers wore finer clothes and ate meat almost daily – small luxuries previously rare for the poor [8]. The equilibrium had changed: **the *"common" laborer was no longer so common**, and he knew it.**

That new equilibrium, however, was not permanent. As decades and then centuries passed, populations recovered. By the 1500s, European population growth was again abundant, and the advantage began tipping back to landowners and employers. The temporary golden age for workers gradually eroded – elites reasserted control, and real wages eventually declined from their post-plague heights [21] [22]. As one historian put it, whatever gains peasants and artisans made in those plague decades "did not survive the following centuries. Elites successfully reclaimed a greater share of wealth and income… and laborers' power diminished." [21] In other words, **when labor became abundant again, or hierarchies were rebuilt, the old order reasserted itself**. The pendulum had swung back. But the Black Death episode left an indelible example of labor scarcity empowering the underclass – a lesson not lost on later generations.

Before moving on, it's worth noting that the phenomenon of catastrophe-induced labor scarcity wasn't unique to medieval Europe. Earlier in history, **plagues and population crashes often brought similar effects**. In the Roman Empire, the **Antonine Plague** of the 2nd century (likely smallpox) killed millions and caused severe manpower shortages; some scholars argue that in its wake, wages for free workers rose considerably due to the scarcity of labor [23]. Records from Roman Egypt after the plague hint at rising pay for soldiers and workers as the state struggled to fill ranks [24] [23]. Likewise, the **Plague of Justinian** in the 6th century depopulated large parts of the Byzantine Empire – one consequence was an interruption of massive building projects and difficulty finding workers [25]. These ancient cases are less documented than the Black Death, but they suggest a recurrent pattern: when population drops suddenly, survivors gain unusual leverage – at least until societal forces counteract it.

The story of the Black Death's aftermath, then, is a dramatic early chapter in the larger saga of labor scarcity versus labor surplus. It shows how an extreme labor shortage translated into **higher wages, lower inequality, and more worker autonomy** (serfdom's decline) [20] – but also how quickly the powerful fought back to restore "order." As we turn to other eras, we will see the converse scenario – times and places where workers were far too *plentiful*, and the grim consequences of those gluts. For if scarcity was a boon to medieval peasants, **labor abundance would prove a curse to many others**.

Colonization and the Engineered Labor Gluts (16th–19th Centuries)

As European empires spread across the globe from the 1500s onward, they established economic systems that often hinged on an *oversupply* of labor – sometimes a violently manufactured oversupply. In the colonies of the Americas, in Africa, and in parts of Asia, European colonizers created or exploited large pools of cheap labor to extract resources and agricultural wealth. This era offers some of history's starkest examples of how a labor glut can be engineered and how devastating its effects are on worker rights and wellbeing. **Enslaved Africans on New World plantations, indigenous peoples forced into colonial mines, and indentured servants shipped across oceans** all formed a massive surplus labor force with virtually no bargaining power. The consequences included depressed (or non-existent) wages, harsh conditions, and long-term underdevelopment that lingered even after these coercive systems formally ended.

Slavery in the Americas: Abundant Labor, Absent Rights

In the **plantation economies** of the Caribbean, Brazil, and the American South, the supply of labor seemed, from the planter's perspective, inexhaustible. After Europeans arrived in the Americas, indigenous populations were initially enslaved or forced to work, but staggering disease-induced die-offs (another tragic labor scarcity of sorts) led colonizers to seek new sources of manpower. They turned to the **Atlantic**

slave trade, which over four centuries transported an estimated 12 million Africans to the Americas in chains. This flood of enslaved labor created a paradigmatic labor glut: *planters had more workers than they could ever acquire locally, and those workers had zero rights or bargaining power*. If an enslaved person died or resisted, the master could acquire another from the slave markets. Wages were irrelevant – enslaved people toiled for no pay, under coercion. This **labor surplus under coercion** drove production booms in sugar, cotton, coffee, and other commodities, yielding enormous profits for plantation owners at horrific human cost.

In economic terms, the planters enjoyed the fruits of an extremely elastic labor supply. For example, a single **sugar estate in 18th-century Jamaica or Saint-Domingue** (Haiti) might have hundreds of enslaved workers, and the colonial system ensured replacements were available via continued slave imports if the workforce dwindled. Because enslaved laborers could not leave or negotiate, planters had no need to improve conditions; in fact, they often literally worked people to death, then bought more. One contemporary observer in the British West Indies noted that it was cheaper for planters to **overwork and replace slaves** than to maintain them in the long run – a gruesome calculus only possible when a glut of enslaved labor was readily obtainable. The result was that wages for free labor in those societies were also depressed: why pay a free worker a decent wage when enslaved people (or indentured ones) could do it for next to nothing? In this way, the **abundance of unfree labor** undermined the position of any free laborers as well. Society stratified sharply between the mostly white planters and the vast coerced workforce with virtually no middle class in between.

Even after slavery was abolished in various colonies (the British Empire in 1834, French in 1848, US in 1865, Brazil in 1888, etc.), the legacy of labor oversupply persisted in new forms. Plantation owners, desperate to keep labor costs low in the absence of slaves, quickly turned to importing indentured laborers from other populous parts of the empire. A telling example comes from the British Caribbean. When Britain ended slavery, *"newly free men and women refused to work for the low wages on offer on the sugar farms"* [26] – understandably, former slaves sought better than the pittance plantation owners were willing to pay. In response, beginning in the 1830s, **British colonies imported some 2 million indentured workers from India (and smaller numbers from China and elsewhere)** to create a fresh surplus of cheap labor [27]. These indentured laborers – derogatorily called "coolies" – signed contracts (often under misleading pretenses or coercion) to work for 5 or more years on plantations in places like Trinidad, Guyana, Mauritius, Fiji, and South Africa [28]. They received meager wages, often below any free-market standard, and lived in harsh, prison-like conditions not vastly different from slavery [29]. The planters had essentially **recreated a labor glut** to replace the one slavery had provided. As a contemporary report noted, the Indian indentures allowed the West Indian sugar estates to *"recover"* after emancipation by ensuring a steady supply of cheap labor [30] – thus undercutting the bargaining power of the newly freed Black workers who might otherwise have successfully demanded higher pay [26].

The glut of labor in these colonial settings was not a natural occurrence; it was deliberately orchestrated. Colonial powers imposed **legal and fiscal pressures to force locals into wage labor** in Africa and Asia as well. In many African colonies, officials used taxation as a lever: they imposed a **hut tax or head tax payable only in cash**, which effectively pushed subsistence farmers into working for European employers to earn money for the tax [31]. This created a pool of Africans who *had* to seek work, swelling the labor supply for mines and plantations. When even that was insufficient or too slow, outright **forced labor policies** were introduced. In Portuguese Mozambique, for instance, the colonial government codified a "moral obligation" for indigenous men to work – in practice **conscripting tens of thousands of Africans for plantation labor** each year [32]. Companies like the Sena Sugar Estates had contracts whereby the state

delivered quotas of forced laborers (3,000 every six months, in one case) to keep their operations fully staffed [33]. Research using archival records from Mozambique found that these **coerced laborers were paid about 40% less** than what equivalent free workers would have earned [34]. The coercion thus directly depressed wages [35]. It created an *artificial surplus* of labor by dragging people into the workforce on unfavorable terms, ensuring that employers never faced a genuine shortage that might empower workers. Similar practices occurred under French rule (the corvée system in Africa and Indochina), Belgian rule (the infamous Force Publique in the Congo, which brutalized villagers into collecting rubber), and others. Across these cases, labor was abundant from the perspective of the colonial enterprise – and thus **exploited to the hilt, with scant regard for rights or welfare**.

It is important to note that not every colony always had a labor surplus; in fact, paradoxically, colonizers often initially complained of labor "shortages" – meaning local people would not work for the pittance offered. But the colonial response was not to raise wages to attract workers (as a competitive market might dictate); instead it was to **remove the locals' alternatives** or compel their service, effectively *manufacturing* the labor supply. As one historian summarized, *"the crisis of wage labor was the main problem faced by all European colonies in Africa. Solving the problem of labor shortage was the central obsession."* [36] They solved it by force, turning a shortage into a surplus on their terms. The outcome for workers was uniformly grim: **low or no wages, long hours, unsafe conditions, and violent punishment if quotas were not met**. In the Congo Free State around 1900, for example, village men conscripted to gather wild rubber faced mutilation or death if they failed to bring in enough – a gruesome illustration of total powerlessness of labor under extreme coercion.

By the 19th century, industrializing colonial powers also used their home populations as a kind of pressure valve on labor. Britain, for instance, encouraged millions of its surplus workers to *emigrate* to colonies (Australia, Canada, South Africa, etc.) as settlers or laborers. This sometimes eased domestic labor gluts (reducing unemployment or over-competition at home), but it exported those workers to colonial contexts where they often formed a labor elite atop local populations. In British India, by contrast, there was an internal labor glut – a huge population competing for limited formal employment. The colonial economy there largely kept wages very low; occasional famines (due to both weather and policy failures) would kill millions, and labor remained cheap. Late-19th-century India saw scant improvement in living standards despite the global economic growth of that era; one could argue the labor oversupply – alongside exploitative colonial policies – meant Indian workers had **weak bargaining power**, especially against British planters or railroad companies that could hire from a vast pool of the poor. Indeed, observers often commented that labor in India was "abundant and inexpensive," which was one reason the British could construct massive infrastructure (railways, canals) with relative ease – but also why Indian wages stayed near subsistence.

In sum, the colonial period demonstrates how **deliberately maintained labor surpluses enabled systematic underpayment and abuse**. Whether through slavery, indenture, or forced wage labor, colonial systems made sure there were **more workers available than decent jobs or fair wages**. The result was to enrich the colonizers and domestic elites while stripping laborers of agency. Unlike the post-Black Death peasants who could threaten to "vote with their feet" by leaving for higher pay, enslaved and colonized workers typically *could not escape* the system. The imbalance of supply (high) and options (low) left them voiceless. As an extreme example of this voicelessness, one might consider that an enslaved field hand picking cotton on a Mississippi plantation in 1850 had virtually the same "wage" (zero) and rights (none) whether labor was scarce or plenty – but the slaveholders saw to it that **labor was never scarce** by continually acquiring more slaves (through birth or purchase). The **moderating effect of scarcity was thus**

negated by the institution of slavery itself. And when emancipation threatened scarcity (as in the British Caribbean), indenture was introduced to bloat the labor pool again [26]. For free or freed workers of color, this meant any budding leverage they might have gained was immediately undermined by a new influx of hands willing (or compelled) to work for little. Even **moderate gluts** – say, a few thousand extra imported laborers on an island – had *significant detrimental effects* on labor conditions, nullifying attempts by local workers to seek better terms.

The broader legacy of these colonial labor practices has been long-lasting. In regions where labor was super-abundant and cheap, economic development often skewed toward low-wage industries and extreme inequality. When slavery in the United States ended, the South turned to sharecropping and convict labor to keep a semblance of labor surplus (tied workers) and maintain planter control – effectively extending the glut conditions by other means. In colonies that gained independence in the 20th century, large populations with limited employment opportunities often remained, a problem in many post-colonial states as they struggled to industrialize.

But even as colonies provided stark examples of labor glut oppression, a new kind of labor surplus was emerging on the global stage – one tied to the rise of industrial capitalism. The scene shifts now to the factories of the **Industrial Revolution**, where a burgeoning working class found itself remarkably numerous, and at the mercy of employers in ways that echoed some of the colonial dynamics (albeit without formal slavery). The industrial age would test whether the pattern held true in the modern economy: would an oversupply of workers in cities lead to low wages and weak bargaining power? The answer, as we shall see, was largely yes – at least until workers organized to counteract it.

The Industrial Revolution: Factories, Crowds, and "Surplus" Hands (18th–19th Centuries)

In an oft-quoted passage from 1844, the young Friedrich Engels lamented the fate of workers in England's new industrial cities. He claimed that the medieval English peasant or artisan of past centuries had been **"far better off than his successors of the factories of the 1840s,"** living a "passably comfortable existence" compared to the misery of the industrial proletariat [37]. Engels was observing the bitter reality of the **Industrial Revolution**'s early decades: while factories were producing wealth on an unprecedented scale, the ordinary workers saw little improvement in their wages or living conditions. In fact, for many their situation worsened, at least initially. What explains this disconnect between increasing economic output and stagnant or falling real wages for workers? One crucial factor identified by Engels and others was the **glut of labor** relative to the demand – in other words, a "reserve army" of workers that kept competitive pressure on everyone's wages. The rapid growth of population, combined with masses of people migrating from rural areas to industrial centers, created a labor market where **workers were plentiful and thus easily exploited**.

The Flood of Workers into the Factories

Britain was the first industrializing nation, and from around 1760 to 1830 it underwent massive social changes. Agricultural improvements had fueled a population boom in the 18th century, so by the time textile mills and coal mines were hungry for labor, there were many hands available. Traditional livelihoods (small farming, handcrafting) were being disrupted by enclosure and mechanization, pushing people off the land. These dispossessed rural folk and a new generation of young workers poured into cities like

Manchester, Birmingham, and London seeking waged work. The result was that **labor supply outpaced the growth of good jobs** for a time. Employers, from cotton mill owners to coal mine operators, found they had a **long line of applicants at the gates**, desperate enough to accept long hours and low pay. If any worker demanded higher wages or went on strike, there were others willing to take the spot – a classic labor surplus dynamic.

Economic data bear out what Engels and the Chartist reformers of the 1830s suspected: despite Britain's economy growing, real wages for workers barely budged for decades. Historians have dubbed this the "Engels' Pause" – a period roughly from the 1790s to 1840s when productivity and profits rose but **ordinary workers' real wages stagnated** [38] [39]. One quantitative study finds that in the first half of the 19th century, British real wages were essentially flat while output per worker climbed, leading the share of national income going to profits (owners) to increase markedly [38]. In fact, Gregory Clark's long-run wage series shows that English workers in some trades did not consistently exceed their late-medieval wage highs until the late 19th century [22] [37]. On the eve of the Industrial Revolution (c. 1750), real wages were no higher than they had been in the early 1500s; by 1850, after 100 years of industrial growth, the average working-class living standard had improved only marginally – maybe 15% higher than the 1780s, according to one study [40]. In short, most of the gains of the industrial boom initially went to industrialists and capital owners, not to the laborers. Why? Contemporary commentators pointed to **oversupply of labor and the power imbalance it caused** [41].

Factories could hire women and children as well as men, vastly expanding the potential labor force and further **augmenting the labor surplus**. Indeed, the use of child labor was rampant – not just because children could be paid less, but also because there were so many poor families willing (or needing) to send their kids to work. In 1815, an observer might see **seven-year-old children darting around the spinning machines in a cotton mill**, earning a pittance for 12 hours of work, or entire families trudging into a coal mine before dawn. The overabundance of labor at the factory gates meant that if one worker dropped from exhaustion or lost a finger in a machine, a new hire could be made in an instant. Jane Humphries, an economic historian, notes that during the early Industrial Revolution the pressure of population growth and lack of worker bargaining power led to widespread use of child labor, which itself then *reinforced* low wages by undercutting adult male workers' wage demands (since a child's wage could supplement a family income) [42] [43]. The whole system thus kept labor cheap.

Working conditions in this era were famously horrific. A British parliamentary report from 1832 on child labor in factories detailed children as young as six beaten to keep them awake on the job, deformities caused by endless standing, and workers forced to eat on the run to keep the machines constantly running. Why did such conditions persist with impunity? Largely because **employers held all the cards in a labor-abundant market**. Labor was treated as a cheap, replenishable input. If one village's supply was exhausted, industrialists knew that Ireland or the rural counties or the European continent had thousands more willing to come. The early 19th century also saw an influx of Irish immigrants into English industrial towns (especially after the 1840s famine) – another stream adding to the labor pool and putting downward pressure on wages in Britain.

On the **European continent**, similar processes occurred slightly later. In Belgium, Germany, and France, rapid population growth after 1800 combined with fitful industrialization meant periods where labor outstripped jobs. In the 1840s, Europe experienced a continent-wide economic crisis ("the Hungry Forties") with high unemployment; discontented workers and the urban poor helped fuel the **Revolutions of 1848**. Those upheavals were in part a reaction to the social ills of nascent industrial capitalism – low wages, job

insecurity, and political exclusion of the working class – all exacerbated by the perception (and reality) that a **surplus of workers** kept them expendable. The famous revolutionary slogan, "Bread or work!", encapsulates the desperate choice facing unemployed masses.

Karl Marx, writing in the late 1840s and 1850s, formalized the concept of the **"reserve army of labor"** – a permanently unemployed or underemployed segment of the workforce that capitalists maintain (inadvertently, through competition) which serves to depress wages for those employed. He drew this from observing England's economy, noting that whenever industry cycled down, unemployment surged, and even in good times there were more workers than jobs requiring their full capacity. This "reserve army," Marx argued, was what kept wages at mere subsistence, as workers knew there were always others ready to take their place if they demanded more pay [41]. In other words, **labor glut was a feature, not a bug, of the capitalist system**, ensuring profits stayed high and workers' bargaining power low. One does not have to subscribe fully to Marx's theory to see its reflection in the events of the 19th century: periods of labor shortage (like wartime demand spikes) did see wages rise slightly, but long-run trends until late century showed wages largely constrained by the large labor supply.

Turning the Tide: Organization and Scarcity

By the second half of the 19th century, some factors began to shift this dynamic in industrialized countries. Population growth eventually slowed and **emigration** to the Americas relieved some European labor surpluses. Workers also began to **organize into trade unions** and press for legal limits on working hours and child labor. These efforts somewhat counter-balanced the effects of a surplus workforce by introducing collective bargaining – essentially, workers banding together to create a kind of artificial scarcity of labor (through strikes or closed-shop agreements) so that employers could not simply replace one worker with the next man off the street. Early successes were limited (unions were often repressed or illegal until mid-century), but gradually the tide turned. By the 1870s and 1880s, real wages in Britain were rising more noticeably [44] [22], and labor laws had improved conditions modestly.

It's telling, however, that this turning point coincided with a time when the **labor supply pressure eased**. Historian Robert Allen and others argue that from about 1850 onward, Britain's demographic transition (declining birth rates) and its massive export of people (to colonies like Canada, Australia, and the U.S.) reduced the labor glut at home, allowing wages to increase as industrial productivity continued growing. In essence, **the reserve army shrank**, and workers could press for a larger share of the economic pie without being undercut as easily. Moreover, new technologies eventually demanded more skilled labor, giving some workers leverage due to skills scarcity rather than sheer numbers. The later 19th century saw the fruition of this in what some call the "horse race" between technology and education – but that goes beyond our scope. The key point remains: where workers remained **plentiful and unorganized**, as in many colonial or peripheral regions feeding raw materials to industry, wages stayed extremely low (for example, Indian textile workers in 1900 earned a tiny fraction of what British textile workers did, as India had a vast labor pool and weak bargaining institutions).

In the United States, the Industrial Revolution took hold after the Civil War, and waves of immigrants from Europe and Asia created a huge labor pool for the burgeoning factories and railroads. During the **Gilded Age (1870s–1900)**, American industrialists similarly benefited from an oversupply of labor, often pitting immigrant groups against each other to keep wages down. A miner in Pennsylvania in 1880, say a recent Polish or Italian immigrant, would find thousands of others vying for the same back-breaking jobs – and mine owners ruthlessly exploited this, hiring strikebreakers and using ethnic tensions to prevent a unified

labor front. One result was violent clashes like the **Homestead Strike (1892)** and the **Ludlow Massacre (1914)**, where labor's attempts to gain power met armed resistance. Union leaders like Eugene V. Debs pointed out that as long as capital could draw on a vast "army" of the unemployed or desperate, any single group of workers was in a weak position. This contributed to the push for national labor reforms and tighter immigration restrictions (indeed, by the 1920s, the U.S. imposed immigration quotas partly to stem the labor supply and protect wages).

By the early 20th century, then, in the industrialized world there was at least recognition that **uncontrolled labor gluts led to social instability** – hence reforms from **Bismarck's social insurance in Germany** to **Roosevelt's New Deal in the U.S.** sought to soften the edges. But before exploring the 20th century further, we must examine one of the most dramatic labor market shocks in history, one that tested societies' capacity to handle an extreme oversupply of workers: the **Great Depression of the 1930s**.

The Great Depression: Labor Glut and the Loss of Worker Power (1930s)

When the global economy collapsed in 1929, it was as if the trapdoor opened beneath tens of millions of workers worldwide. Factories shuttered, banks failed, farms went bankrupt. By 1932, unemployment reached astounding levels: **25% in the United States**, nearly **30% in Germany**, and even higher in some hard-hit countries like Poland (where it rose above 40%) [45] [46]. This sudden, massive **labor glut** – so many people desperate for any job at any wage – had a predictably dire impact on those workers' bargaining power and living standards. With **four, five, or ten jobless men for every opening**, employers (those that survived the downturn) found themselves in an overwhelmingly advantageous position to dictate terms. Wages tumbled, working hours were cut or made "flexible" to the employer's whim, and job security vanished. The Great Depression thus stands as a stark example of how **an oversupply of labor (through mass unemployment) can systematically undermine wages and worker rights**.

Wage Cuts and "Any Job at Any Pay"

At the onset of the Depression, some policymakers clung to the hope that keeping wages stable would prop up purchasing power. But as the crisis deepened, wage cuts became widespread and often severe. In the United States, nominal wages in many industries fell by over 20% between 1929 and 1933, as companies slashed pay to reduce costs amid plummeting prices. Deflation actually made some *real* wages appear stable for a time, but in truth most workers had less money in their pockets – or no job at all. In **Great Britain**, detailed data show that the early 1930s brought "masses of wage cuts." Between 1930 and 1932, the average frequency of pay cuts spiked dramatically [47]. In 1931 alone, more than one-third of British workers saw their wages reduced [47]. One economic analysis notes that in 1931, *36.3%* of U.K. employees got a pay cut, while a vanishingly small *0.4%* received a raise [47]. Those numbers paint a bleak picture: essentially no workers had the leverage to secure raises, while one in three had to accept lower pay. In the **United States**, the situation was similar. Even though President Herbert Hoover initially implored businesses not to cut wages, by 1931–1932 reality prevailed: wages were cut or work hours reduced across the board to avoid outright layoffs (or in addition to layoffs).

For those out of work, the struggle was even more acute. Lines of unemployed workers – the iconic "breadlines" and queues at soup kitchens – became everyday sights in cities like New York, Chicago, London, and Berlin. A New York City man in a breadline in 1932 might have been an office clerk a year before; now

he would take any manual labor for a meal. John Steinbeck's novel *The Grapes of Wrath* memorably depicts how oversupply of labor drove down wages: when masses of Dust Bowl migrants reached California, they found **"the state oversupplied with labor; wages are low, and workers are exploited to the point of starvation."** [48] Steinbeck describes contractors spreading false rumors of plentiful jobs to attract far more workers than needed, so that they could pay as little as 5 cents an hour for picking fruit – knowing desperate families would accept. In one scene, farm owners cut the offered rate in half because so many hungry people camp outside the gates willing to work. *"How can you frighten a man whose hunger is in the wretched bellies of his children?"* Steinbeck writes – such a man will work for any pittance [49]. This fictionalized account was grounded in real occurrences during the Depression: for example, the cotton harvest wage in California fell from $1.50 per hundred pounds picked to *40 cents* as thousands of migrants flooded the fields [50]. This is a textbook case of labor glut killing bargaining power – there was no bargaining, only take it or leave it, and too many had to take it.

Collapsed Unions and Worker Rights

The early 1930s were a dark time for labor rights. In much of the world, union membership plummeted along with employment. Organizing a strike was nearly impossible when so many unemployed were ready to replace strikers. Employers and authorities often took a hard line, fearing both communist influence and the need to cut costs to survive the economy. In the United States, *unionization actually picked up later in the 1930s* (after 1935, thanks to the New Deal's pro-labor reforms), but in the worst years of 1930–1933, unions struggled. A notable event was the **Ford Hunger March** of 1932 in Detroit, where thousands of jobless autoworkers protested for relief and some were shot by police – a brutal reminder that economic desperation could lead to violent confrontation, with little immediate gain for labor.

In countries like Germany, the Depression's labor glut had profound political effects. With unemployment at 6 million (about 30%) in 1932, German workers were extremely vulnerable. Wages fell, and the Weimar government's emergency decrees cut welfare and pay in a deflationary spiral. This mass desperation eroded support for moderate politics and helped fuel the rise of extremist solutions – including the Nazi Party, which promised jobs (through public works and rearmament) and crushed independent unions once in power. In the U.K., high joblessness and wage cuts led to the fall of the Labour government in 1931 and formation of a National Government that, among other things, actually *cut* unemployment benefits (a controversial move that prompted riots in some towns). In one grim incident, a Welsh miner commented that the means test for dole relief was so degrading that it "made you wish you were back underground; at least down the mine we had a wage – now we have nothing." Countless personal stories from the era echo that sentiment of lost dignity and power.

Poland's experience during the Depression offers an extreme quantification of the pain: By 1933, **nominal wages in Poland had fallen by over 50% compared to 1928** [51] [46]. Even though prices also fell, the drop in wages was catastrophic for living standards. Discontent led to strikes and even uprisings – in 1932, starving workers in the Lesko county of Poland rose up, only to be violently suppressed [52]. Here we see that even **moderate labor gluts can degrade conditions, but massive ones can spark social upheaval**. The Polish government, much like others, eventually turned to public works and later military spending to absorb unemployment, implicitly acknowledging that leaving such a surplus labor condition unchecked was untenable.

It wasn't just industrial workers affected. **Professional and white-collar workers** also faced underemployment and pay cuts, though their plight gets less attention. Schoolteachers, civil servants, and

others often took significant salary reductions as tax revenues plunged. For instance, in the U.S., President Hoover in 1932 signed the Economy Act which slashed federal salaries and veteran pensions by about 15% [53]. In effect, the Depression pushed not just the working poor but also segments of the middle class into a weaker economic position, many losing their jobs and joining the labor surplus.

Government Intervention: A New Role in the Labor Market

The utter collapse of worker bargaining power in the early Depression forced a rethinking of economic policy. In the United States, Franklin D. Roosevelt's administration, coming to power in 1933, took unprecedented steps to boost workers' position – not out of pure altruism, but as a means of economic recovery. The **National Recovery Administration (NRA)** encouraged industries to set fair wages and allowed collective bargaining (though the NRA was later struck down by the Supreme Court) [54]. The Wagner Act of 1935 firmly established workers' right to unionize, leading to a surge in union membership late in the decade. These measures aimed to remove some of the labor oversupply pressure by empowering workers to negotiate as a group and by shortening workweeks (so more jobs could be spread around). Likewise, large public works programs (like the WPA in the U.S.) directly hired millions, taking them out of the desperate labor pool and thus indirectly shoring up wage standards (a form of Keynesian strategy to reduce the glut).

In Europe, various strategies were used. Britain instituted a modest unemployment insurance earlier (since 1911) which was expanded, though benefits were kept low. Germany under Hitler pursued autarky and rearmament, which by 1936 had essentially eliminated unemployment (through massive state employment and conscription), albeit at the cost of militarizing society. The Soviet Union, meanwhile, had its own labor issues but claimed to have no unemployment – an artifact of state control rather than a balanced labor market. In any case, **the Depression taught governments that extreme labor surplus – mass unemployment – was not just an individual tragedy but a collective economic and political disaster**. This lesson shaped policy for decades to come, as maintaining a high level of employment became a key goal (enshrined, for example, in Britain's 1944 White Paper on Employment Policy).

By the late 1930s, as the world economy gradually clawed back or shifted into wartime production, the labor glut of the Depression receded. World War II, grim as it was, effectively solved unemployment in the U.S. and elsewhere by drafting soldiers and ramping up factory work (suddenly **labor scarcity reappeared** – e.g., American factories in 1943 had to recruit women en masse, "Rosie the Riveter," because so many men were at war, and wages for many workers rose during the war due to overtime and demand). It is a telling contrast: from the early 1930s, when a man might beg for a day's work at any wage, to the early 1940s, when defense plants were complaining of worker shortages and offering training and decent pay to whoever would join. The pendulum had swung from glut to scarcity under the extraordinary circumstance of total war.

The Great Depression experience reinforced the core thesis: **when labor is abundant and jobs are scarce, wages and conditions fall unless something steps in to change that dynamic**. In the Depression, that "something" was partly government policy and partly external events (war). But absent those, the market alone was driving a race to the bottom for workers, as illustrated by cases like the California migrant farmworkers or the Polish labor riots. Economists later quantified this relationship as the "wage curve" or Phillips curve trade-off – high unemployment correlating with lower wage growth. One analysis of post-2008 data by the IMF, for instance, notes that recovering labor markets see wages lag until unemployment gets low enough [55]. Indeed, a study by the Economic Policy Institute found that **excessive**

unemployment in the aftermath of the Great Recession (and in most years since 1979) has "suppressed wage growth" for typical workers [3]. In other words, the Depression was an extreme case, but even moderate upticks in unemployment can have measurable negative effects on wages. We turn next to the late 20th century, where we see this principle play out in a more gradual but profound way through **globalization**.

Globalization's New Reserve Army: Late 20th Century Labor and the "Great Doubling"

In the latter decades of the 20th century, the world's labor markets underwent a transformation arguably as significant as that of the Industrial Revolution. Barriers between national economies came down; hundreds of millions of new workers from populous countries entered the global workforce. Factories could now be moved across oceans to tap cheaper labor, and competition for jobs was no longer local or even national, but **global**. Economists have called this the **"Great Doubling"** – the effective doubling of the available global labor force due to the integration of China, India, the former Soviet bloc, and other developing regions into the world economy [56] [57]. This enormous increase in labor supply on a world scale had far-reaching effects on wages and worker power, especially for less-skilled workers in developed countries and industrial workers in developing ones. Broadly, globalization from the 1980s onward tended to **undermine worker bargaining power in high-wage countries (through outsourcing and import competition)** and keep wages low in low-wage countries (through an abundance of rural migrants and eager job-seekers willing to work for little). It was a new form of labor glut – not localized in one place, but distributed via global supply chains and capital mobility.

The Great Doubling and Its Discontents

Harvard economist Richard Freeman famously observed that with the opening of China and India and the collapse of Soviet communism by the 1990s, the world's market labor force effectively **doubled from about 1.5 billion to 3 billion workers**. He wrote that this *"Great Doubling"* posed a challenge: there were now far more workers relative to capital, tilting bargaining power away from labor on a global scale [56] [57]. One analysis put it starkly: *"the supply of labor available to capital doubled in two decades (Freeman 2006)… This situation brought a considerable excess of labor supply, which deteriorated wage structures and increased job insecurity worldwide."* [57]. In other words, companies suddenly had a much larger pool of labor to choose from, which exerted **downward pressure on wages** and made employment more precarious nearly everywhere.

In industrialized Western countries, this era saw **manufacturing jobs migrate** to lower-wage nations. A steelworker in Pittsburgh or a textile operator in Manchester who once had strong union wages found their factory shutting down and reopening in China or Mexico where wages were a fraction of the cost. The threat of offshoring became a powerful cudgel in negotiations: employers could credibly say, "Accept lower pay or we'll move production abroad." This wasn't an idle threat. For example, from 1979 to 2010, the U.S. lost some 8 million manufacturing jobs; not all due to trade, but trade and offshoring were major contributors [58]. Studies by the Economic Policy Institute estimated that competition with imports from low-wage countries (especially after China joined the WTO in 2001) not only eliminated jobs but also suppressed wage growth for non-college educated workers in the U.S. [3]. Indeed, EPI noted that **global integration with low-wage countries has "adversely affected wages" of workers without college degrees in America** [3]. This was essentially the labor glut principle writ large: American workers now

effectively had to compete with an enormous surplus of labor in countries where workers earned perhaps one-tenth the wage. The result was often either wage stagnation, job loss, or the erosion of benefits and conditions to cut costs.

One emblematic case was the **NAFTA** agreement in 1994, which integrated the U.S., Canadian, and Mexican markets. While it brought some investment to Mexico and cheaper goods to the U.S., it also exemplified pressures on labor. Many U.S. factories moved to Mexico for cheaper labor, weakening manufacturing unions. Conversely, Mexican farmers faced an influx of U.S. agribusiness crops, leading to rural displacement and further swelling Mexico's pool of low-wage workers (some of whom then migrated to U.S. illegally, further adding to labor supply there in certain sectors like agriculture and construction – another nuance: migration itself being a labor supply augmenter).

In Europe, the fall of the Iron Curtain and expansion of the European Union meant Western European workers now effectively competed with Eastern Europeans as well. Companies could outsource to Poland or Slovakia, or hire cheaper migrant workers. This increased labor supply within the integrated EU market kept a lid on wages in some industries. For instance, German manufacturing underwent reforms in the 2000s (the Hartz reforms) that created a large low-wage sector; Germany also benefited from offshoring parts of production to Eastern Europe, containing labor costs. By the late 1990s and 2000s, even though unemployment in advanced countries sometimes fell (like the U.S. in late 90s had low unemployment), **workers' bargaining power remained historically weaker, reflected in the declining share of national income going to labor** in many countries [59]. Global competition was a key reason. As one report noted, *"the falling labor share of GDP and stagnant real wages since the late 1990s"* can be linked to these globalization dynamics [60].

Effects on Developing World Workers

One might ask: what about the workers in the low-wage countries themselves? Did they gain or suffer from this glut? The answer is mixed. Countries like China experienced an economic boom that did lift hundreds of millions out of extreme poverty. Real wages in coastal Chinese factories did eventually rise, especially by the 2010s, due to growth and some shortages of young labor. However, in the earlier period of the 1980s–2000s, these gains were limited and hard-won. **China in the 1990s** had an enormous "floating population" of rural migrants streaming into cities to work in factories for very low pay (young women stitching apparel in Shenzhen or assembling electronics in Dongguan for, say, 12 hours a day, six days a week, at wages that barely covered dormitory housing and food). This huge internal reserve of labor – hundreds of millions of underemployed peasants – meant that even as China's export industries expanded, the labor supply kept coming, holding wages down initially. It was only after perhaps 15–20 years of rapid growth that China began to near what economists call the "Lewis turning point," where surplus rural labor is absorbed and wages start rising more sharply. But throughout the 90s and 2000s, Western companies sourcing from China benefited from that **vast surplus of labor**. The workers, for their part, often lacked independent unions (unions were state-controlled in China) and so had little bargaining power beyond occasional wildcat strikes. Conditions in many factories were harsh (famously, the Foxconn electronics plants had a series of worker suicides in 2010 that drew attention to repetitive stress and pressure-cooker environments).

In other developing nations like **Bangladesh** or **Indonesia**, a similar story: global garment brands could contract production to factories where armies of young women earned meager wages, often in unsafe conditions, because labor was abundant and job alternatives few. The deadly Rana Plaza factory collapse in Bangladesh in 2013 – killing over 1,100 workers – underscored how cheap and interchangeable labor had

become in the global garment supply chain. Workers who raised concerns could be easily replaced, and safety was neglected in the push for low-cost production. It's a grim parallel to earlier eras: just as 19th-century British mill owners had a queue of rural children to hire, 21st-century apparel contractors in Dhaka had a queue of rural migrants at their gates, willing to accept $2 a day.

One could argue that globalization did create new jobs in poor countries (which is true), but it often kept those jobs' **wages very low due to the sheer number of people willing to work**. The result was a transfer of some manufacturing from high-wage regions to low-wage ones – benefiting some workers in poor countries with employment, but also **transmitting the downward pressure on wages globally**. Indeed, the presence of this global labor surplus allowed multinational corporations to play workers in different countries off against each other, much like 19th-century mill owners played local ethnic groups against each other. For example, if a Taiwanese factory got "too expensive," a brand could move orders to Vietnam; if Vietnam's wages rose, next stop Ethiopia, and so forth – a global "race to the bottom" in labor costs.

In the late 20th century, unions and labor laws struggled to catch up to this new reality. In the U.S. and U.K., union density fell precipitously in the face of deindustrialization and hostile political climates (Reagan and Thatcher's eras). One result: a weaker ability for workers to negotiate wage increases even when unemployment was moderate. The **1990s** in America, for instance, saw decent economic growth and relatively low unemployment by decade's end, but **median wages stagnated** for much of the decade [3]. Many attributed this to global pressures – companies could outsource, or threaten to, which kept workers cautious. Additionally, the rise of **temporary and contract work (the "precariat")** in advanced economies in the 1990s and 2000s meant that even if headline unemployment was low, many workers felt insecure and had reduced bargaining power. Labor economist Guy Standing called this emerging class the "precariat," noting how globalization and deregulation created a large group of workers with precarious jobs, no union protection, and thus little leverage to demand better pay or stable schedules.

Moderate Gluts, Big Effects

It's worth highlighting that the labor oversupply in the globalization era was often not a visible mass unemployment in rich countries – it was more subtle. In the U.S., the unemployment rate in the mid-1990s was around 5% (not high), and in the mid-2000s before the financial crisis it hovered around 4-5%. On paper, that's near "full employment." Yet **wages for average workers barely rose**, and inequality widened. How could that be, if not many were unemployed? The answer lies in the *broader effective labor supply*. Globalization meant that even a fully employed domestic workforce was competing (indirectly) with a much larger pool abroad, *and* within the country the decline of unions and fear of jobs moving kept a lid on wage demands. In technical terms, the Phillips curve (which inversely relates unemployment to wage inflation) appeared to flatten – low unemployment didn't translate into high wage growth as strongly as before [55]. The **IMF in 2018 noted a "disconnect between unemployment and wages"**, partly attributing it to globalization and automation making workers feel replaceable [55]. This shows that even a **moderate perceived labor glut or threat** can have significant detrimental effects on labor conditions – you don't need 25% unemployment as in the 1930s; even an environment of job insecurity and competition from outside can achieve a similar dampening of worker power.

By the late 2000s, an interesting reversal started in some emerging markets: China, for instance, began experiencing labor shortages in certain coastal areas and wages started rising around 15-20% annually for factory workers in the early 2010s. This led some companies to move to inland China or to countries like Vietnam – again chasing the surplus. In essence, whenever scarcity arose in one place, capital sought out a

new labor surplus elsewhere. This global agility of capital is a defining feature of late 20th and early 21st century economics, and it tends to keep the overall **bargaining power of workers in check** on a worldwide scale.

As we move to the next section on the **post-2008 Great Recession** and the current century's technological upheavals, keep in mind how this globalization-driven glut set the stage. The workforce in developed countries was already on the back foot entering 2008 – years of offshoring and outsourcing had eroded what was once strong organized labor in many sectors. Then came another cataclysmic shock – the financial crisis – which created a new surge of unemployment. And just as economies recovered from that, a new specter appeared: automation and artificial intelligence, threatening to displace workers and create a different kind of labor surplus: **humans replaced by machines**.

Bust Again: The Great Recession (2008–2009) and Its Aftermath

When the global financial system teetered in 2008, millions of workers once more faced sudden unemployment. The **Great Recession** that followed the collapse of Lehman Brothers in September 2008 was the worst downturn since the 1930s. While its duration was shorter, its impact on labor was harsh. In the United States, over 8.7 million jobs vanished between 2008 and 2010; the unemployment rate spiked to 10% (in late 2009) [61]. In parts of Europe, it was even worse – Spain's unemployment exceeded 20%, Greece's over 25%. Even countries less directly hit by the financial crash felt the slowdown. This swift creation of a **labor glut** – many more workers than jobs – once again put downward pressure on wages and working conditions. What distinguished the Great Recession's aftermath was how long some of its labor effects lingered, even as headline unemployment rates eventually fell. The post-2008 recovery was often dubbed a "jobless recovery" initially, and then a "wageless recovery," meaning jobs came back slowly and wages even more slowly. This highlighted how even **moderate, persistent labor slack** can hold back wage gains for years.

Unemployment and Wage Stagnation in the 2010s

By 2010, economists and policymakers noticed a troubling trend: despite efforts like stimulus spending and near-zero interest rates, employment was improving at a crawl and wages were barely rising. In the U.S., the unemployment rate remained above 8% for over three years (2009 through 2012). Historically, such elevated joblessness would correspond to stagnant or falling wages – and indeed, wage growth was very sluggish. A report by the **Economic Policy Institute** pointed out that chronic high unemployment post-2008 "suppressed wage growth" especially for low- and middle-wage workers [3]. They emphasized that this was not only during the recession itself but *"over most years since 1979"* – essentially arguing that except for late-1990s, the U.S. had frequently maintained enough of a labor surplus (with either unemployment or underemployment or global labor competition) to keep wages down for the majority [3]. In the 2010–2013 period, as unemployment slowly ebbed, businesses were often able to hire without offering big pay raises because plenty of job seekers were available. As Federal Reserve officials noted, there seemed to be more "slack" in the labor market than the unemployment number alone indicated (many discouraged workers had left the labor force, for example, and could come back if conditions improved, thus acting as an extra reserve labor pool).

Europe faced a two-speed situation: Germany and some northern countries recovered employment faster (Germany even had a short-time work scheme that prevented mass layoffs), whereas Mediterranean countries saw depression-level unemployment for many years. In **Greece**, by 2013 unemployment was

~27%, and wages were cut sharply as part of austerity measures. In **Spain**, unemployment over 20% persisted into 2015, and a whole generation of young Spaniards struggled to find stable jobs. The EU's lesser-developed members (Eastern Europe) actually experienced some emigration of their workers to find jobs elsewhere, ironically easing their local labor supply pressure by exporting it.

In the U.S., one outcome of the slack labor market was the rise of the **gig economy**. Companies like Uber, TaskRabbit, and others emerged around 2009–2013, offering people side gigs or freelance work. Part of why these platforms could grow was the abundance of people needing extra income or unable to find traditional jobs. Uber famously classified its drivers as independent contractors, meaning they had no labor protections or benefits. The implicit promise was flexibility, but the reality for many was long hours for relatively low pay, with the constant churn of new drivers signing up – an oversupply keeping earnings for gig workers in check. An article on the gig economy noted that if, say, driving for Uber became too remunerative, it would attract more drivers and thereby lower the average driver's share of riders (and income). In effect, **the gig platforms dynamically adjust to labor surplus**: more workers join, the pie doesn't grow as fast, so each gets a smaller slice.

By the mid-2010s, as unemployment finally fell to low levels (the U.S. reached ~5% by 2015 and under 4% by 2018), wages did start to pick up modestly. However, the gains mostly went to higher-skilled workers; **low-wage workers saw very limited improvement**, partly because they had been hit hardest and had the least bargaining power. Moreover, the scars of the recession (like long-term unemployed people who never returned to the workforce, or accepted lower-paying jobs than before) meant a lot of *hidden* slack. A Brookings Institution analysis in 2016 pointed out that even though the headline unemployment was down, one in eleven American workers was either unemployed, underemployed, or discouraged (not actively looking but wanting a job) [62] [63]. They also noted many of those who found new jobs were re-employed at *lower wages* than their pre-recession jobs [64]. This suggests a lingering effect: once a labor glut drove wages down or job quality down, some of that was "locked in" even after the glut abated, as workers had lost their previous footholds.

The **Great Recession** also accelerated a trend toward more **contingent and part-time work**. Employers, having learned to "do more with less" during the lean years, were cautious about hiring back full-time staff. Instead, many expanded part-time roles or contract positions. Involuntary part-time employment (people who want full-time but can only get part-time) spiked during the recession and remained elevated for years after. This underemployment is another form of labor oversupply – people have more hours they *could* work, but the jobs don't provide them. It too keeps a lid on wage pressures.

Policy Responses and Missed Opportunities

In some sense, the policy response to the Great Recession was the inverse of the 1930s. Governments and central banks intervened very aggressively to stabilize the banking system and stimulate economies (through spending and ultra-low interest rates). These measures likely prevented an even worse unemployment catastrophe. However, in terms of direct labor empowerment, the post-2008 period saw fewer dramatic pro-labor reforms than the New Deal had provided in the 1930s. There was no new Wagner Act or nationwide mobilization of unions (union density in the U.S. actually continued to decline). One exception might be the rise of minimum wage campaigns in the 2010s – for instance, the "Fight for $15" movement in the U.S. successfully pushed several cities and states to commit to $15/hour minimum wages by the late 2010s. This was a response to the reality that low-end wages had stagnated for decades (federal minimum wage in the U.S. stayed at $7.25 from 2009 onward, losing purchasing power each year). Studies

show that raising the minimum wage in a tight labor market can lift incomes with minimal job loss. But in a slack labor market, minimum wage hikes are harder to push politically (fear of job loss looms larger when unemployment is high).

Some economists argued that policymakers allowed the labor glut to persist too long after 2008. The U.S. Congress, for example, ended extended unemployment benefits early (in 2014) and pursued austerity in budgets around 2011–2013, which possibly slowed job growth. In Europe, austerity measures in many countries kept unemployment painfully high for longer than necessary, critics say. If governments had instead aimed for faster full employment, workers might have regained bargaining power sooner. This debate underscores a modern understanding: **policy can influence how long a labor glut lasts and thus how much workers suffer**. Those years of weak labor markets in early 2010s were arguably a policy choice to some degree.

By the time the world economy reached late 2019, in many places unemployment was at multi-decade lows (the U.S. hit 3.5% unemployment, Germany ~3%, U.K. ~4%). One might have expected a triumphant return of labor's bargaining power. There was some improvement: U.S. wage growth ticked up to around 3% annually (still modest by historical standards). But crucially, even at these low unemployment rates, **worker bargaining power did not fully recover to pre-globalization or mid-century levels**. A 2021 IMF report was tellingly titled "The Disconnect Between Unemployment and Wages" [65], noting that in many advanced economies wage growth remained weaker than expected given low jobless rates. The reasons cited include globalization (as discussed) and also **technology** – automation substituting for workers, and digitalization enabling new forms of gig work – which is the next and ongoing story.

The 21st Century Technological Squeeze: Automation and the New "Surplus" of Labor

As we venture into the current era, a new specter looms over workers: the prospect that machines – robots, algorithms, artificial intelligence – could render many of them redundant, creating a kind of **technological unemployment** on a large scale. The idea isn't new (the Luddites feared it in 1811, John Maynard Keynes warned of it in 1930), but recent advances in artificial intelligence and automation have given it fresh urgency. While optimistic economists argue new jobs will emerge as old ones vanish, there is evidence that the last few decades of automation have already contributed to wage inequality and job polarization. Essentially, technology can act as a force multiplier of labor glut: if one machine can do the work of five people, then unless new tasks appear, we have four people "surplus" to requirements. And if those people then compete for the remaining jobs, down go the wages.

Automation's Impact on Wages and Inequality

A comprehensive study published in 2022 by MIT economists Acemoglu and Restrepo quantified how much automation (particularly in manufacturing) has affected U.S. wages since 1980. Their findings were striking: they estimate that **automation reduced wages significantly for less-educated workers, accounting for most of the growth in the wage gap over that period** [66]. Specifically, since 1980, automation (from robotics, software, etc.) cut the wages of men without a high school diploma by about 8.8%, and women with similar education by 2.3% [66]. One of the authors remarked that automation is *"a labor-shifting device, rather than a productivity-increasing device,"* meaning companies used it chiefly to replace workers and cut costs, not necessarily to greatly increase output per se [67]. The consequence was an oversupply of

displaced workers relative to the jobs still needing humans, which **pushed their wages down** [66]. This research supports the view that technology has been a key driver in *undermining worker bargaining power* over the last few decades – not by causing mass unemployment (employment did recover) but by changing the mix of jobs and giving employers alternatives to human labor.

Consider a simple example: in an auto factory in 1970, 10,000 union workers might have built cars. By 2010, the same factory might produce more cars with 2,000 workers and hundreds of industrial robots. The 8,000 displaced workers have to find other work – perhaps in retail, services, or not at all if they retire early or drop out. The new jobs they find likely pay less (since manufacturing used to be higher-paid blue-collar work). And importantly, the presence of automation weakens those who remain in manufacturing: the union cannot easily demand big raises if management can point to the possibility of further automation or outsourcing. This indeed happened: auto manufacturing wages stagnated or even fell in real terms in the U.S., especially after the 2000s (new hires at U.S. car plants post-recession often started at half the wage of senior workers, a result of the union concessions in 2009). Part of the reason was globalization (foreign non-union plants in U.S. South undercutting Detroit's union shops), but part was that technology had altered the labor-capital balance – fewer humans were absolutely necessary.

Another visible area is retail and fast food. **Self-checkout kiosks** in grocery stores and **ordering tablets** in restaurants are becoming common. Each such machine potentially replaces a cashier or order-taker. For now, these sectors still employ millions (there is usually one attendant for many self-checkout lanes, for instance), but the direction is clear. If a restaurant chain faced a push to raise wages to, say, $20/hour, they might accelerate the deployment of automated systems to avoid hiring more staff – an implicit check on how far wages can rise. The pandemic of 2020–2021 actually hastened some automation as well (e.g., some establishments moved to QR code menus and online ordering to reduce staff interactions). The **fear of technology displacing jobs** can itself act as a brake on worker demands: one cannot bargain with an algorithm, after all.

On the flip side, technology also created new gig-like opportunities (Uber, Lyft, food delivery apps) as mentioned, but those often lack protections and stable income. There's an eerie parallel to the 19th-century "putting out system" or piece-work: modern gig workers are paid per task (per ride, per delivery), a model that keeps them in competition with one another and with the platform's ever-adjusting algorithms.

Early 21st Century: Whose Scarcity?

One interesting wrinkle in the late 2010s was that even as many workers felt the squeeze, certain specialized skills did become scarce and commanded high wages. Software developers, data scientists, and other tech professionals saw booming demand and could often name their price. This highlighted a divide: **for high-skill labor, scarcity prevailed (driving wages up), while for lower-skill labor, surplus prevailed (holding wages down)**. This divergence contributed to inequality. For instance, a top AI engineer in Silicon Valley might earn a six-figure or even million-dollar salary due to a shortage of people with cutting-edge machine learning skills. Meanwhile, a warehouse worker at an Amazon fulfillment center might find their real wage barely above the minimum, because there are many people who can do that work and Amazon is investing in robots to do it too.

In some advanced economies like Japan and parts of Western Europe, demographics introduced another factor: aging populations and low birth rates led to genuine labor shortages in certain sectors (e.g., elder care, construction). Japan, faced with a shrinking workforce, turned heavily to automation (robots for

caregiving, AI, etc.) to compensate – a different way of tackling scarcity that ironically prevented wages in those fields from rising too much (if a care robot can do some tasks, the human caregiver's wage doesn't skyrocket due to scarcity of staff; instead, fewer staff are needed). In countries like Germany, shortages of skilled tradespeople have led to wage increases and efforts to attract immigrants. But the global pool of labor (including migrants) often fills gaps before wage surges can occur. For example, Poland's outflow of workers to Western Europe created a shortage at home, but Poland then brought in hundreds of thousands of workers from Ukraine and elsewhere to plug the gap – thus mitigating local wage pressures.

This fluidity shows how in a globalized world with technology, **true labor scarcity is localized and often temporary**, whereas surplus (in at least some categories of labor) remains more persistent. It took a shock as huge as the 2020 pandemic to create a brief broader labor scarcity in places like the U.S. – after initial layoffs, by 2021 many employers struggled to rehire, and wages for service jobs jumped as they competed for workers. Some dubbed it the "Great Resignation" period, with workers quitting at high rates and demanding better conditions. But even that may prove fleeting; as of 2022–2023, with interest rates rising and the economy cooling, the leverage might shift back again. History teaches that unless reinforced by strong institutions (unions, labor-friendly laws), worker gains during scarcity moments can be eroded when conditions swing back to surplus.

The Future: AI and the Unknown

As we stand today, the development of advanced AI (like language models, self-driving technology, etc.) raises the question: will this time be different? Will large segments of workers – not just in manual jobs but white-collar roles – be displaced, creating an unprecedented labor glut? Or will new industries and roles emerge to absorb them? If history is a guide, **even the *threat* of such displacement can weaken worker power**. A software engineer negotiating a salary in 2030 might hear, "We're also considering an AI solution to maintain this code, so we can't justify a higher salary." True or not, that dampens wage pressure. In sectors like trucking, if self-driving trucks become viable, the mere anticipation can keep truck drivers' wage demands in check – why fight for higher pay if the company might soon replace drivers with autonomous vehicles? This scenario echoes the reserve army concept but with machines as the reserve.

However, some argue that aging demographics and slowing labor force growth globally (China, for example, now has a declining working-age population) will counterbalance automation – essentially, we'll automate because there aren't enough workers, not to create surplus. That might be true in some macro sense, but the distributional effect remains: *some categories of workers may be very scarce, others very surplus.* The mix matters. Nursing might remain a scarce-skill job (thus higher wages) if robots can't do it effectively; whereas routine accounting might become largely automated, making junior accountants surplus.

One should note that technology doesn't operate in a vacuum – policy will shape its impact. Strong social safety nets, retraining programs, or even ideas like universal basic income have been proposed to handle a future where not everyone's labor is needed. Those policies could mitigate the negative effects of labor surplus by decoupling income from a job to some extent, thereby giving workers more power to refuse terrible pay (since starvation is off the table). Whether societies adopt such measures will greatly influence whether the coming waves of automation lead to **widespread prosperity or a new era of underpaid, underutilized labor**.

Conclusion: The Arc of Labor Supply and Power

From the plague-ravaged fields of medieval Europe to the AI-driven workplaces of the 21st century, the story is consistent: **when workers are scarce relative to the work to be done, they can claim a greater share of the rewards; when workers are abundant or easily replaced – by other workers, by slaves, by immigrants, by offshoring, or by machines – their leverage and conditions deteriorate.** We have traveled through time and around the globe to see this thesis confirmed in era after era. After the Black Death, English peasants briefly broke the chains of feudalism as labor scarcity made their toil precious [1] [2]. Centuries later, African slaves and indentured Indians on colonial plantations, forced into *artificial abundance*, toiled in conditions as bad as any in history, deprived of even the chance to bargain [26] [34]. In smoky 19th-century factory towns, a glut of hands willing to feed the machines kept wages at bare subsistence even as wealth accumulators prospered [22] [38]. In the depths of the Great Depression, armies of unemployed stood in line for bread, and those with jobs took pay cuts without a peep, lest they join the jobless multitudes [47] [46]. When globalization flung open the doors between those multitudes, the effective labor pool exploded, contributing to the long stagnation in pay for working classes in advanced countries and gruelling low wages in new industrial hubs abroad [57] [3]. And now, as automation and AI loom, workers wonder if the pendulum will swing further toward surplus, and how they will find footing in a world where even their skills can be replicated by code.

History also teaches that these outcomes are not simply fate. Human institutions and choices matter. The post-Black Death peasants had to *fight* – in courts, in fields, even in revolt – to secure their higher wages, and eventually many gains were rolled back [21] [18]. Conversely, in the late 19th and 20th centuries, workers organized unions and pushed for laws that tempered the effect of labor gluts: antitrust laws to limit employer monopolies, immigration laws, minimum wages, unemployment insurance, and so on. The New Deal stands out as a time when policy actively sought to strengthen labor's hand (through union rights and public employment) as a way out of depression. In our contemporary period, new ideas such as **job guarantees** or **higher minimum wages indexed to productivity** are being debated to ensure that even if labor is abundant, it is not destitute.

Yet, it must be acknowledged that the fundamental economic force at play – supply and demand for labor – remains powerful. Even well-intentioned policies can struggle if they go against a massive labor surplus. For example, efforts to significantly raise wages in a highly globalized sector might just cause production to move elsewhere, unless coordinated internationally. This is why some advocate for global labor standards: to prevent a race to the bottom whereby capital hops between pools of surplus labor.

It is also notable that **even moderate labor surpluses have significant effects**. We saw that clearly in the post-2008 recovery: an unemployment rate a few points above normal for a few years was enough to suppress wage growth for nearly a decade [3]. We don't need another Great Depression to feel the consequences – even a mild recession or a slack in a specific industry (like a glut of newly graduated lawyers in a slow legal market) can lead to salaries stagnating or young professionals taking unpaid internships, etc. The historical record is essentially a caution to maintain what economists call **full employment** – or even *"tight"* labor markets – if the aim is to improve worker wages and conditions. Periods like the immediate post-World War II decades saw generally low unemployment in the West and coincidentally strong income gains for the working and middle classes. When unemployment rose in the 1970s and 1980s, those gains halted or reversed, and labor's share of income began to fall in many countries.

As we conclude this journey, one might reflect on a final dynamic: **power and voice**. Wages and rights are not only determined by headcount but by who has voice in the system. Labor scarcity often forces the powerful to listen to workers – as when medieval lords, however grudgingly, met peasants' wage demands or when 1940s industrialists conceded to union terms because labor was needed for the war effort. Conversely, labor surplus often silences workers – who dare not speak up in a sweatshop or a recession for fear of replacement. Thus, the see-saw of supply is intimately tied to human dignity on the job.

Understanding this history is vital as we navigate our present and future. If technology does create a large "effective" labor surplus, society will have to decide: do we repeat the patterns of the past – squeezing workers because we can – or do we use our wealth to ensure a fair distribution even when not everyone's labor is in high demand? If another plague (or pandemic) ironically bestows some scarcity power on essential workers (as we saw briefly during COVID-19 when nurses, delivery drivers, and grocery clerks gained new leverage), will those gains last or will the old hierarchies reassert themselves [21]? The thesis of this report has been that **economics tilts strongly in favor of employers when labor is abundant**. But history also shows that through solidarity, policy, and sometimes sheer upheaval, workers have clawed back power even in unfavorable tides.

In the end, the pendulum of labor supply and demand continues to swing. Knowing its history arms us to push for a more equitable outcome, so that during times of plenty (of workers) we do not abandon the principles of fairness, and during times of scarcity we do not forget the value of those whose work truly makes the world run. The stories of the past – of peasants and artisans, slaves and factory girls, assembly-line operators and gig drivers – all echo a simple truth: **treat workers as human beings, not as interchangeable cogs, and society prospers more justly**. When workers have a fair share of bargaining power, economies tend to be more stable and inclusive; when they are crushed by oversupply and indifference, the seeds of discontent and instability are sown. The past has spoken – it is up to us to heed its lessons for the labor struggles of the present and future.

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