# LABOR MARKET MONOPSONY: TRENDS, CONSEQUENCES, AND POLICY RESPONSES

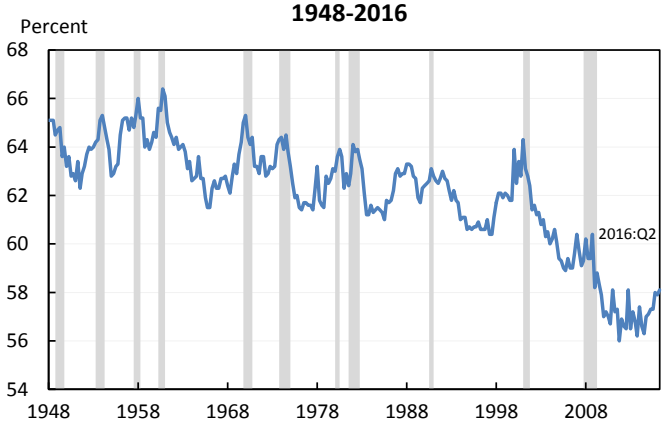
## Introduction

In September, the U.S. Census Bureau reported that in 2015, the typical household saw its income grow by $2,800, or 5.2 percent, the fastest rate on record. Over the course of this business cycle, average annual wage growth has been higher than any business cycle since the early 1970s. This is real progress toward higher incomes for working Americans—a central goal of many of the policy initiatives the Obama Administration has undertaken since 2009.

But while these gains are a step in the right direction, more work remains to fully address long-term challenges of slow wage growth and rising inequality. Over the past several decades, only the highest earners have seen steady wage gains; for most workers, wage growth has been sluggish and has failed to keep pace with gains in productivity (CEA 2015, Ch. 3). Though the slowdown in wage growth is partly due to a slowdown in productivity growth since the 1970s, the share of income accruing to labor has also been falling.

Over the past 15 years, while profits rose, the decline in labor's share of national income accelerated, reaching its lowest level ever since World War II. And though this trend has begun to show signs of reversal since mid-2014, labor's share of income is well below the 2000 year level (Figure 1).

**Figure 1: Labor Share of Income, Nonfarm Business Sector, 1948-2016**




Note: Shading denotes recession.
Source: Bureau of Labor Statistics, Productivity and Costs

At the same time, labor income itself has become increasingly unequally divided. Researchers have focused on the divergence between worker skills and employer needs—a challenge brought about by technological change and a trend in educational investments that, while rising, has not kept pace with demand, which has risen even faster (Autor 2014; Katz and Murphy 1992; Goldin and Katz 2007). Others have examined more institutional hypotheses, including the erosion of the minimum wage (Autor, Manning, and Smith 2015), the decline of unionization (Card 2001), and changes in the structure of employment (Weil 2014).

There is also growing concern about an additional cause of inequity—a general reduction in competition among firms, shifting the balance of bargaining power towards employers (Furman and Orszag 2015). Such a shift could explain not only the redistribution of revenues from worker wages to managerial earnings and profits, but also the rising disparity in pay among workers with similar skills. These trends also have broader implications for the economy as a whole: instead of promoting growth, forces that undermine competition tend to reduce efficiency, and can lead to lower output, employment, and social welfare.

A growing literature has documented several indicators of declining competition in the United States, and economists have begun to explore the links between these trends and rising income inequality (Furman and Orzag 2015). While recent discussions have highlighted rising concentration among producers and monopoly pricing in sellers markets (*The Economist* 2016), reduced competition can also give employers power to dictate wages—so-called "monopsony" power in the labor market. While monopoly in product markets and monopsony in labor markets can be related and share some common causes, the latter has some distinct causes and policy implications.

This issue brief explains how monopsony, or wage-setting power, in the labor market can reduce wages, employment, and overall welfare, and describes various sources of monopsony power.[1] It then reviews evidence suggesting that firms may have wage-setting power in a broad range of settings and describes several trends in recent decades consistent with a growing role for monopsony power in wage determination. It concludes with a discussion of several policy actions taken by the Obama Administration to help promote labor-market competition and ensure a level playing field for all workers.

## Implications of Monopsony Power for Wages, Employment, and Inequality

The concept of monopoly power is familiar to many: a firm with monopoly power has the ability to charge higher prices for a product it sells without losing all of its customers, due to a lack of competition from other firms selling the same or a similar product. The term "monopsony" is much less familiar, but the concept is similar: a firm with monopsony power has the ability to pay lower prices for its inputs (i.e. what it buys). In the important case of labor markets, a monopsonistic employer can pay a lower wage than would prevail in a competitive market without losing all its workers to competing employers. Like monopoly power, monopsony generally leads to economic inefficiency. And in the labor market, it also leads to redistribution from workers to employers.

The harms of limited labor market competition can be understood by first considering how wages (and any non-wage compensation) are determined when firms must compete with each other for workers. In a competitive labor market, each firm will bid up the wage to recruit workers from other firms as long as the revenue it can earn by hiring another worker exceeds the wage it must pay—establishing a close link between wages and worker productivity. Because firms in a perfectly competitive market all bid for the same workers, no firm can pay less than what others are willing to pay. If a firm did attempt to set wages below the market rate, its workforce would be quick to find alternative employment. As a result, competitive firms must all pay wages that are determined by the market, and compensation is equalized across similarly productive workers for similar types of jobs.

In contrast, when there are barriers that limit wage competition between firms, market discipline that compels employers to pay the going wage is weakened. In this case, assuming that similarly productive individuals vary in their "reservation wages" (the lowest wage they are willing to accept)—for example, because some must commute from longer distances—a monopsonistic firm faces a choice: it can set the wage high enough to recruit even those with high reservation wages, or it can limit employment to those who are willing to work for less and thereby keep wages low. Economic theory shows that firms with monopsony power have an incentive to employ fewer workers at a lower wage than they would in a competitive labor market. What the monopsonistic firm loses in reduced output and revenue, it more than makes up in reduced costs by paying lower wages. In other words, by recruiting less aggressively, paying less, and sacrificing some employment, employers with monopsony power can shift some of the benefits of production from wages to profits.

[1] While "pure" monopsony refers to the case of a single buyer in a market, in this brief, we follow the literature in labor economics and use the term "monopsony" more broadly to refer to any case where firms have some labor market power that allows them to determine wages.

As suggested above, the implications of monopsonistic wage-setting extend beyond the redistribution of wages to profits. First, it can lead to inefficient reductions in employment and output, where some workers who would have been willing to work at the competitive market wage are never hired, and the output they would have produced is produced less efficiently by other firms if at all. Notably, firms are willing to incur this reduction in employment only if it allows them to pay lower wages or to reduce costs through inferior benefits or work conditions. An important implication is that monopsonistic employers can be induced to hire more labor if their ability to set wages below the level in a competitive market is constrained—for example, by a collective bargaining agreement or a minimum wage.

A second implication of monopsony is a weakened link between labor productivity and wages. Because firms no longer compete aggressively for workers, monopsony power opens up the possibility that wages can differ—both between and within firms—even among workers with similar skills. Recent evidence suggests that much of the rise in earnings inequality represents an increase in the divergence of earnings between workers in different firms (Barth et al. 2016; Song et al. 2015). As Furman and Orszag (2015) have argued, this trend, and the concurrent rising dispersion of firm-level returns, are consistent with the notion that firms have wage-setting power. A similar conclusion is reached by Card et al. (2016) who also show that when competition between firms for labor is limited, then the wages of similarly-skilled workers may become tied to the productivity of their employers: while all firms have an incentive to restrict employment and depress wages below their competitive levels, more productive firms (with better technology, for example) will choose to hire more labor—and will pay higher wages to do so.

Further, if employers with monopsony power are able to differentiate among workers' reservation wages, then they can also set wages that discriminate among their own employees. In the extreme case of "perfect" wage discrimination, firms can pay each worker the minimum he or she is willing to accept, regardless of the worker's skills or productivity. More generally, differing degrees of worker bargaining power across different groups of workers—for example by age, race or gender—may lead to varying degrees of wage depression, promoting within-firm wage inequality. For example, if women's job mobility is more constrained than men's by family responsibilities, then women will be more limited in their choice of employers and be more vulnerable to wage discrimination (Manning 2003, Ch. 7).

To be sure, firms face a number of constraints in their ability to pay different wages to similarly qualified workers (or even to workers who perform different tasks), including legal constraints and concerns over internal equity or fairness.[2] However, employers may be less constrained by equity concerns when workers lack good information about the wages of their coworkers (Card et al. 2012). Firms can also circumvent internal equity constraints or fairness norms by shedding activities to subordinate companies through subcontracting, third party management, and other organizational forms. Such "fissuring" of employment makes wage discrimination feasible by transforming wage setting within the walls of a business to a pricing problem among subordinate firms (Weil 2014).

## Sources of Monopsony Power in the Labor Market

In the strictest sense, monopsony arises when there is a single employer in a market; textbooks often cite isolated "company towns" in the late 19th and early 20th centuries as classic examples. Because such company towns are rare today, the concept of monopsony might appear to have few applications. On the other hand, however, the conditions of "perfect competition" that require firms to take the wage as given are also, arguably, quite rare. A perfectly competitive labor market requires that workers stand ready and able to change employers in response to even slight differences in wages or working conditions.

[2] For evidence that employee preferences for internal equity can constrain firms' wage-setting power, see Breza, Kaur, and Shamdasani (2016); Dube, Giuliano and Leonard (2015); Card et al. (2012).

In today's economy, product market concentration may play a role in limiting labor market competition. But several additional forces appear to limit workers' employment options and, in turn, to give employers some power to set wages rather than paying the going market wage. In some cases, such monopsony power is derived from deliberate actions by employers that artificially restrict competition. But importantly, wage-setting power can also occur naturally—even in markets with many employers—due to frictions that limit workers choices or mobility.

### *Market Concentration*

The presence of a limited number of firms in the market for a particular type of labor may give each of these firms some power in setting wages. For example, factory line workers have fewer opportunities to "vote with their feet" in a town with one manufacturing plant relative to one with many. Holding other factors equal, higher concentration in a labor market may lead to lower wages just as higher concentration in a product market often leads to higher prices.

It is worth noting that this concentration in the labor market may be distinct from concentration in the product market. In some cases, a manufacturer could be competing internationally to sell its products, but could dominate a local market for a particular type of labor. Conversely, the market for surgeons may be national even though many metropolitan areas have only a limited number of hospitals.

Where labor markets align with product markets, firms can have both monopoly and monopsony power. Indeed, when promoting the Sherman Antitrust Act of 1890, Sen. John Sherman argued that a trust not only has the power to raise prices; it also "commands the price of labor….for in its field it allows no competitors" (Congressional Record 2457, 1890).

The antitrust laws apply to reductions in competition for employees as a result of mergers as readily as they do to reductions in product market competition. Yet few merger complaints have cited employment monopsony concerns as a reason to challenge a transaction. This may reflect the fact that mergers most likely to raise these labor market monopsony concerns would also likely raise concerns about product market competition, and courts are more accustomed to adjudicating product market claims. Even when product market and labor market harms do not coincide, the law compels antitrust authorities to protect competition in *both* employment and product markets (Hesse 2016).

The larger size of employers relative to individual workers tends to give employers a natural advantage in bargaining leverage over workers in the labor market. This uneven balance of power is one rationale underlying the collective bargaining exemption for labor unions from U.S. antitrust law.[3] By providing an important counterweight to bargaining leverage and the unilateral exercise of monopsony power, unions may promote higher wages, better working conditions, and even more efficient levels of employment (Boeri and van Ours 2008, Ch. 3).

### *Employer Collusion*

Limited competition in a labor market also may facilitate implicit or explicit collusion among employers that allows a small number of them to act as one. Collusion can take the form of agreements not to hire each other's workers or the coordination of wage offers and raises in order to avoid competitive bidding. Like price fixing in product markets, such agreements among employers are illegal in the United States and subject to antitrust laws (Hesse 2016).

Collusion is more likely to occur when a small number of employers recognize their mutual effects on wages and working conditions, and when workers cannot easily find employment outside the colluding

[3] Section 1 of the U.S. National Labor Relations Act of 1935 states "the inequality of bargaining power between employees who do not possess full freedom of association or actual liberty of contract and employers who are organized in the corporate and other forms of ownership association substantially burdens and affects the flow of commerce."

firms: for example, a geographic area is dominated by a single industry with a few firms and the workforce has specialized skills that cannot easily be applied in other industries. Recent Department of Justice cases provide examples of collusion that restricted competition in hiring software engineers among technology firms in Silicon Valley and the pay of certain hospital nurses in Arizona. Private litigation has also alleged agreements to restrict the pay of hospital nurses in several cities with a small number of large hospitals (see below for further discussion).

Legal actions in cases of wage collusion have historically been less common than their product market counterparts (OECD 2008). But there is no reason to think the incentive to exercise market power is any less powerful in the labor market; indeed economists have long understood that employers have an incentive to collude to keep wages low. And when numbers of competing employers are small, this incentive may be matched by an increased ability to act. As Adam Smith wrote in *The Wealth of Nations* (1776):

> *What are the common wages of labor, depends everywhere upon the contract usually made between [employers and employees], whose interests are by no means the same. The workmen desire to get as much, the masters to give as little as possible. The former are disposed to combine in order to raise, the latter in order to lower the wages of labor. It is not, however, difficult to foresee which of the two parties must, upon all ordinary occasions, have the advantage in the dispute, and force the other into a compliance with their terms. The masters, being fewer in number, can combine much more easily … Masters are always and everywhere in a sort of tacit, but constant and uniform, combination, not to raise the wages of labor above their actual rate.*

### *Employer Use of Non-Compete Agreements*

Employers can also shift the balance of power in their favor through legal, unilateral actions that do not rely on market concentration. The practice of including "non-compete" clauses in employment contracts—which restrict workers' employment options when they leave their current firm—is one such means.

Non-compete agreements are not always harmful to workers or to growth; by preventing workers with "trade secrets" from transferring technical and intellectual property of companies to rival firms, these agreements can be one means of facilitating innovation. However, employers also have other methods to protect their interests. And new evidence (discussed further below) suggests that the use of non-competes in the United States today extends well beyond cases where they are plausibly justified. In particular, the evidence shows that 30 million American workers are currently covered by non-compete agreements, and that these agreements are often imposed broadly on low-income workers or others with no access to trade secrets (U.S. Treasury 2015). In these cases, it is likely that the primary effect of these agreements is to impede worker mobility and limit wage competition.

### *Search Costs and Labor Market Frictions*

As illustrated by the prevalence of non-compete clauses, labor market competition may be restricted even when the number of employers is large. Competition in the labor market requires that workers be able to switch employers easily in response to changes in wages or working conditions—and non-compete agreements explicitly restrict workers' ability to do so. More broadly, any factor that limits worker mobility or makes workers reluctant to change employers—even if not the result of any intentional action on the part of the firm—can give firms some wage-setting power.[4]

[4] Monopsony power in a market with many employers is often referred to as "dynamic oligopsony" or "monopsonistic competition" and has been described formally by Burdett and Mortensen (1998), Bhaskar and To (1999), and Manning (2003). But the importance of worker mobility constraints as a source of monopsony has long been understood, and was noted by Joan Robinson who coined the term "monopsony" (Robinson 1969).

Many such factors or "frictions" occur naturally in the labor market. First, there are numerous costs involved with searching for another job—including the cost of acquiring and processing information about alternatives.[5] To fully assess their options, workers need information not only on wages but also on benefits and working conditions—and the latter can be especially hard to obtain. The common use of websites that allow employees to share information about their employers suggests that workers value such information.

While information technology has reduced some information barriers, research suggests that they continue to be important. For example, Kuhn and Mansour (2011) find that internet job search appears to reduce unemployment duration but has little effect on wage growth between jobs. Direct evidence of information barriers is found in recent surveys showing that workers often accept jobs without knowing that they will be asked to sign a non-compete clause (Marx and Fleming 2012; Starr, Bishara, and Prescott 2016), and others have found that a significant share of job applicants are inattentive to details when completing applications (Mas and Pallais 2016). Benson, Sojourner, and Umyarov (2015) show that information about employer quality can be an important determinant of workers' job application decisions, suggesting that the absence of such information can have real impacts on job search. And Cardoso, Loviglio and Piemontese (2016) find that misperceptions about labor market opportunities can lead people to accept lower wages.

Even when workers have good information, heterogeneous preferences over job characteristics can limit the number of outside options that are equivalent from a worker's perspective to one's current job (Bhaskar, Manning and To 2002). One characteristic that clearly differs across workplaces is physical location. A recent study of online job applications shows that U.S. job seekers are 35 percent less likely to apply to a job 10 miles away from their ZIP code of residence than one in their own ZIP code (Marinescu and Rathelot 2016). But other unique features of a workplace can also make workers reluctant to seek alternatives. And when workers have few comparable alternatives, they have less leverage to demand higher wages or to negotiate wage growth from their current employers.

### *"Job Lock" and Employer-Sponsored Health Insurance*

Employer-provided health insurance is a particular source of labor market friction that has long been studied by economists and policy makers (e.g., Madrian 1994; Farooq and Kugler 2016). Most workers in the United States younger than 65 years of age receive their health insurance through their employer or the employer of a family member. Prior to the Affordable Care Act (ACA), people seeking coverage outside the workplace often had very limited options. Health insurers offering coverage on the individual health insurance market were generally allowed to charge more, limit benefits, or deny coverage entirely for people with pre-existing health conditions, making seeking coverage independent of an employer unattractive for many workers. In addition, the tax code provided substantial subsidies to people with coverage through an employer since compensation provided in the form of health insurance was not subject to income and payroll taxation, unlike compensation provided in the form of wages, while similar assistance was often not available for people who wished to obtain coverage on their own. These features of the health insurance market may have made these workers reluctant to move to new jobs that do not offer health insurance, limiting their outside work opportunities. This phenomenon of workers' unwillingness to switch employers due to their employer's provision of health insurance is known as "job lock" and can lead to workers being stuck in jobs where they earn lower wages than they could secure elsewhere, are otherwise not satisfied, or their skills are not best utilized.

In addition to sacrificing productivity gains from better matches between workers and employers and stymied entrepreneurship, job lock can also weaken the bargaining power of workers and create the

[5] The notion that imperfect information about the labor market makes job search costly is central to modern theories of unemployment (Mortensen and Pissarides 1994).

potential for monopsony power. Like search costs that make it difficult for workers to seek other employment opportunities, job lock arising from employer-provided health insurance limits a worker's employment options.

As discussed further below, the Affordable Care Act reduced job lock by providing workers with affordable non-employer sponsored health insurance options and banning private insurance policies from setting different coverage terms based on health status. The availability of non-employer sponsored health insurance may strengthen the bargaining positions of workers who do not leave their employer, since they can better leverage the option of leaving.

### *Regulatory Barriers to Worker Mobility*

Excessive regulations can also impede workers' ability to move and thus effectively limit their employment options and bargaining power.

One class of regulations that can present barriers to job mobility is occupational licensing laws (CEA, Department of Labor, and Department of the Treasury 2015). While licensing regulations can play an important role in protecting consumer health and safety, they also raise the cost of entering a licensed occupation. Today, roughly one in four U.S. workers requires a government license to do their job. For some of these jobs, the costs of obtaining a license can be significant while the health and safety benefits may be often minimal. In these cases, licensing can create unnecessary barriers to employment, restricting opportunities and depressing wages for those who are unable to obtain a license (CEA, Department of Labor, and Department of the Treasury 2015).

Because licensing restricts the supply of workers in a profession, licensed workers tend to earn higher wages at the expense of excluded workers. However, even workers who hold licenses can find their employment alternatives limited by existing licensing regulations, which often vary dramatically across States (Carpenter et al. 2012). In particular, the patchwork of State regulations and variability in State reciprocity make it harder for workers in licensed occupations to move across State lines (Kleiner 2015), and new data show that licensed workers are less likely than unlicensed workers to make such moves.

Other regulations—not necessarily in the labor market—can also present barriers to job mobility. For example, overly restrictive land-use regulations create costly barriers to housing development, limiting the availability of housing and increasing its cost (Furman 2015). In turn, higher costs of finding and purchasing or renting a new home can effectively narrow the labor market.[6]

Regardless of the source, barriers to worker mobility effectively reduce competition among firms in the market for labor. And with less competition, employers can profit from paying lower wages—even if this means forgoing some productive employment relationships.

## Evidence of Labor Market Monopsony

There is increasing recognition among economists and policy makers that employers often have some degree of monopsony power in labor markets (Manning 2011). Evidence on this proposition ranges from court cases alleging collusive agreements, to studies of labor market institutions such as non-compete clauses, to analysis of wage and employment responses to policy changes.

### *Evidence on Collusion*

Court cases provide some of the best direct evidence of employer collusion. In recent years, the Department of Justice (DOJ) brought suit against six major Silicon Valley employers for entering into no-poaching agreements not to recruit or hire away

[6] Historical research on the coal mining industry in the early 1900s suggests that the wage-setting power of mining companies in remote, one-company towns West Virginia was limited by the provision company-provided housing—which, along with a network of rail lines, reduced the cost of moving between towns and employers (Boal 1995; Fishback 1992).

each other's workers in violation of the antitrust laws (Department of Justice Office of Public Affairs 2014; Department of Justice Office of Public Affairs 2010). The firms later settled civil class-action suits that alleged that these agreements suppressed the wages of programmers and engineers (Whitney 2015; Rosenblatt 2014). The DOJ also brought suit against a hospital association in Arizona for agreement to set uniform bill rates for paying temporary and per diem nurses.[7]

Other suits have alleged collusion among hospitals to set wages for nurses. Since 2006, registered nurses in a number of metropolitan areas have filed antitrust class-action lawsuits alleging that local hospitals colluded in order to depress their pay (Blair and DePasquale 2010). In *Cason-Merenda et al. vs. VHS of Michigan*, a class-action suit against eight major Michigan hospitals, economic analysis indicated that the hospitals' actions reduced tens of thousands of nurses' wages by about 20 percent compared to what they otherwise would have been paid over a period of several years. The hospitals agreed to a total of $90 million in settlement (Cwiek 2015).

It is difficult to know whether these cases represent isolated examples or are part of a wider phenomenon. But consistent with economic theory, these recent court cases suggest collusion is most likely to be successful when employment is concentrated among a small number of firms.

### *Evidence on Non-Compete Agreements*

Recent survey evidence suggests that 18 percent of the U.S. labor force is currently covered by non-compete agreements (Starr, Bishara, and Prescott 2016; U.S. Department of the Treasury 2015). More importantly, the evidence shows several signs that these agreements are often used to create or exercise market power. One indication of an unreasonable and likely unjustified use for these agreements is their prevalence among workers who are unlikely to have access to trade secrets—including those without a college degree and lower-income workers. Starr et al. (2016) find that these groups or workers are subject to non-compete agreements at similar rates as workers in general. And recent media coverage has raised awareness of the usage and enforcement of non-competes even in low-wage occupations such as fast-food employees, warehouse workers, and camp counselors (Gibson 2016).

Survey data suggests that in many cases, workers sign non-compete clauses without full information on what they are signing or how it will be enforced. A recent survey of electrical engineers finds that nearly 70 percent of respondents report that their employer presented them with a non-compete only after they had accepted the job offer, and nearly half of the time, the non-compete was presented to the employee on or after his or her first day of work (Marx and Fleming 2012). Further, Starr et al. (2016) find that these contracts are prevalent even in States where they are not enforced. Indeed, in California, which does not generally enforce non-compete agreements, 22 percent of workers report that they have signed one. The use of non-compete agreements where they are not enforced suggests workers are not well-informed, and raises the possibility of disparate impacts across workers with and without sophisticated understanding of the legal implications of these agreements.

This pattern of evidence casts doubt on the notion that non-compete agreements serve mainly to protect employers' trade secrets and investments in employee training. Instead, it suggests that many employers may use non-compete agreements to solidify their bargaining power vis-à-vis their workers. While further research is needed to fully understand the impact of non-compete agreements on wages, an analysis by the U.S. Department of Treasury (2015) shows that stricter non-compete enforcement in a State is associated with both lower wage growth and lower initial wages. Lessons can also be learned from research on historical institutions that placed similar restrictions on workers' ability to move between employers. For example, Naidu (2010) studies "anti-enticement" laws in the postbellum southern United States—which prohibited planters from recruiting one another's sharecroppers—and finds that these laws

[7] http://www.justice.gov/atr/cases/azhha.htm

resulted in less mobility and lower wages among African-American farm workers.

### *Indirect Evidence: Minimum Wage Impacts on Employment*

A well-established body of economic research suggests that, even without engaging in collusive agreements or restrictive employment contracts, firms have substantial power to control wages in some markets—consistent with the notion that labor market frictions play an important role.

One set of evidence comes from studying the employment effects of minimum wage laws. Economic theory suggests that in competitive markets, wages are already bid up until they just equal the marginal value of labor to the firm; therefore if a minimum wage in a perfectly competitive market rose above the marginal value of labor, economic theory predicts that it would lead to a reduction in hours or jobs. But when labor markets are not perfectly competitive or when a monopsonistic firm reduces wages and employment below the levels that would prevail in a competitive market, there is scope for a higher minimum wage to raise both wages *and* employment.

Beginning in the early 1990s with the influential work of Card and Krueger (1995), research began to find evidence of minimum wage increases that were not accompanied by job loss. Surveys of the minimum wage literature since then show the estimated employment effects are mostly close to and centered around zero (Belman and Wolfson 2014).[8] This research has spurred many economists to question the conventional wisdom that labor markets are generally competitive and demonstrated that minimum wage increases can lift wages without impacting employment levels (Ashenfelter, Farber, and Ransom 2010).

### *Indirect Evidence: Wage-Setting and Wage Discrimination*

Another set of studies measures how quickly workers leave their jobs if their wages fall for reasons unrelated to their own productivity. In a competitive market, quits should be very sensitive to differences between firms in wages paid to similarly productive employees. Yet research finds that this prediction is often not borne out in practice. Among groups of workers ranging from nurses and school teachers to retail employees, studies have found that employees are much less responsive to wage changes than would be expected if markets were very competitive. These findings imply that employers can set wages that are significantly below what would prevail in a competitive market without losing their workforce.[9]

Researchers have also examined the potential for monopsony-style wage discrimination to help explain wage differentials among workers with similar skills. In particular, several studies have found evidence consistent with gender-based wage discrimination due to gender differences in mobility constraints (Ransom and Lambson 2011; Ransom and Oaxaca 2010; Hirsch, Schank, and Schnabel 2010). Manning (2003, Ch. 7) argues that domestic responsibilities often act as a constraint on women's job search, and discusses evidence that women see smaller wage gains when they change jobs and are more likely than men to leave employment for non-market reasons. Recent research by Mas and Pallais (2016) suggests that gender differences persist in the way that family responsibilities limit job options. This study finds that women—and women with young children in particular—are more willing than men to accept lower wages for the option of working from home or the ability to avoid irregular work hours.

Finally, evidence of employment restructuring (or "fissuring") in a wide variety of industries can also be understood as an alternative to within-firm wage

[8] Recent U.S.-based studies that find evidence consistent with friction-induced monopsony power, see Dube, Lester and Reich (2016); Dube, Lester and Reich (2010); Giuliano (2013).

[9] For example, Ransom and Sims (2010) find that teachers' quit rates are sufficiently unresponsive to wage differences that their employers are able to pay roughly 25% below the competitive wage. Dube, Giuliano, and Leonard (2015) find similar quit responses among sales employees at a large retail firm. Staiger, Spetz, and Phibbs (2010) find even smaller quit responses and larger implied wage-setting power in a study of VA hospitals and registered nurses.

discrimination that allows employers to achieve the same goal. As explained by Weil (2014), firms have increasingly been able to reduce labor costs through outsourcing and subcontracting, which frees them from internal equity constraints. Research on the rise of outsourcing in occupations like janitors and guards also suggests that this practice allows for lower labor costs (Dube and Kaplan 2010), which may in turn lead to higher profits for the firm.

Together, this evidence suggests that, even in the absence of market concentration, firms may often exercise substantial wage-setting power.

## Signs that Employer Discretion over Wages May Be Rising

This section considers several broad trends suggesting that employers may be increasingly able to exercise wage-setting power in U.S. labor markets. It first considers the evidence that market conditions may have become more conducive to monopsony power in recent decades. In particular, the evidence suggests both that industries have become more concentrated and that labor has become less mobile.

It then presents evidence of a decline in two institutions that historically helped to counter firms' wage-setting power: unions and the minimum wage. With these changes, employers may be better able to exercise monopsony power today than they were in past decades.

### *Rising Market Concentration*

A variety of evidence points to a steady increase in product market concentration in the U.S. economy over the past few decades.[10] National statistics show that between 1997 and 2012, the majority of industries have seen increases in the revenue share enjoyed by the 50 largest firms (CEA 2016). While revenue share does not necessarily reflect market size, and while rising concentration can reflect increased efficiency from economies of scale, it can also indicate less competition among firms. If these firms compete with each other in specialized labor markets, rising concentration can have implications for labor markets.

When fewer firms compete for a given type of worker, each firm is more likely to exercise monopsony power. Smaller numbers of firms may also facilitate collusion. Indeed, evidence of rising market concentration and monopoly-style profits is especially strong in the health-care and technology sectors (*The Economist* 2016; Gaynor, Ho, and Town 2015), two sectors that have been the subject of recent litigation alleging collusion among employers (CEA 2016).

Rising concentration also reflects a decline in entry of new firms in the past three decades (Bureau of Labor Statistics, CEA calculations). This decline in "business dynamism" shields incumbent firms from competitive upward pressure on wages. It has also likely contributed to a decline in labor market "dynamism" (Davis and Haltiwanger 2014), as discussed below.

### *Declining Labor Market Dynamism*

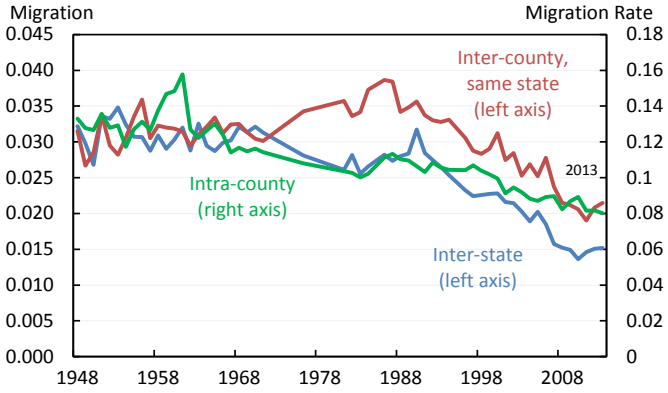
Labor market "dynamism" (or "fluidity" or "churn") refers to the frequency of changes in who is working for whom in the labor market.[11] While short-term trends show signs of increased dynamism in recent years, research has identified long-run declines in a variety of measures of labor market dynamism in the U.S. Evidence from multiple sources shows that that workers today are less likely to leave a job or to move to a new job than they were 20 or 30 years ago (Molloy, Smith, and Wozniak 2014; Davis and Haltiwanger 2014; Hyatt and Spletzer 2013).

Geographic mobility has also seen a decades-long decline (Figure 2; Molloy, Smith, and Wozniak 2014; Kaplan and Schulhofer-Wohl 2012). Industry, occupation, and employer transitions have also fallen markedly over a similar period, with declines in those measures accelerating since the 1990s (Figure 3).

[10] A CEA issue brief released earlier this year reviewed this evidence in more detail (CEA 2016).

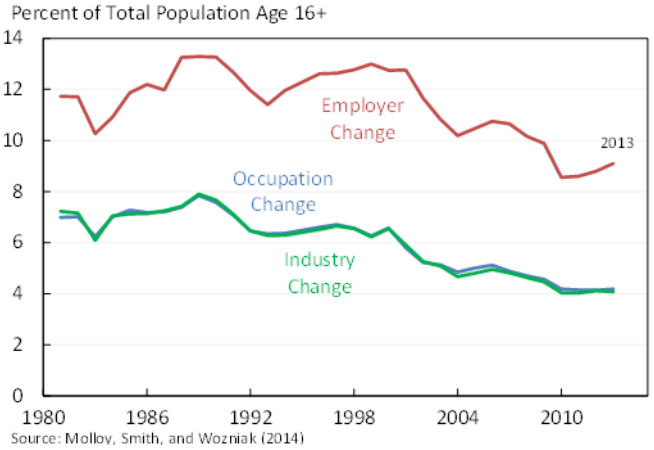
[11] For a detailed discussion of the decline in labor market dynamism, see Chapter 3 of the 2015 *Economic Report of the President*.

**Figure 2: Migration Rates by Distance**




Notes: Migration rates of the civilian population age 16 and up from the Current Population Survey. Post-1989 migration rates are calculated from microdata and exclude imputed values. Sample details are given in Molloy, Smith and Wozniak (2011) and Saks and Wozniak (2011)
Source: Molloy, Smith, and Wozniak (2014)

**Figure 3: Employer, Occupation, and Industry Transitions, 1983–2013**




Source: Molloy, Smith, and Wozniak (2014)

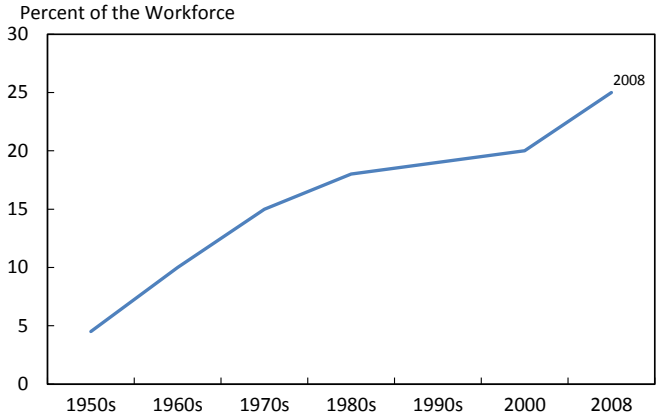
The consequences of declining labor market mobility depend on the underlying causes. While these causes are not well understood, it appears that changes in worker characteristics like age and education are not a key driver (Molloy et al. 2016). This suggests that the decline in dynamism instead reflects an increase either in the costs of moving or in the benefits of staying put.

If initial employment matches have improved and there is less need to move, then workers may be benefitting from fewer transitions and disruptions. But if the decline in mobility is a manifestation of rising moving costs or barriers to switching jobs, then this is a cause for concern. This latter explanation would imply that workers have fewer labor market options and thus that employers are better able to dictate the terms of employment.

There are several reasons to suspect that the downward trend in labor market dynamism is due to rising costs of switching jobs. One is that this trend has occurred alongside upward trends in regulatory barriers that impede worker mobility (Davis and Haltiwanger 2014; Furman and Orszag 2015). Relative trends in housing prices and construction costs suggest that land-use regulations have become more restrictive in recent decades (Glaeser, Gyourko and Saks 2005). Excessive regulations could explain rising housing prices in a large and growing set of cities (Gyourko and Molloy 2014), which in turn can make it hard for workers to move to where the best jobs are.

The past five decades have also seen a strong upward trend in the prevalence of occupational licensing requirements (Figure 4); during this time, the share of U.S. workers needing a license to do their job has grown roughly fivefold (Kleiner and Krueger 2013, CEA, Department of Labor, and Department of the Treasury 2015). CEA analysis shows that much of this increase has been due to an expansion of licensing into new professions, which may have negatively affected many lower-income individuals for whom the cost of obtaining a license can be especially onerous (CEA, Department of Labor, and Department of the Treasury 2015). The growth in occupational licensing has likely been restricting employment options and may be reducing bargaining power for less skilled workers. But further, because of the variation in licensing regulations across States, their increased prevalence also reduces geographic mobility for a growing number of workers in licensed occupations (Kleiner 2015).

**Figure 4: Share of Workers with a State Occupational License**

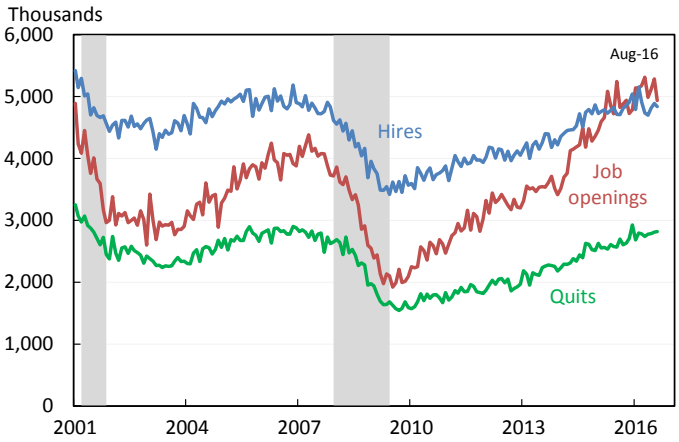



Source: Council of State Governments (1952); Greene (1969); Kleiner (1990); Kleiner (2006); and Kleiner and Krueger (2013), Westat data; CEA calculations

Another indication that the decline in job-switching reflects increasing switching costs (as opposed to increasing benefits of staying in one's current job) is that wages are increasingly likely to be determined by economic conditions at the time of initial employment (Molloy et al. 2016). In other words, wages in one's job are now less sensitive to current outside labor market conditions than was true in the past—which suggests that workers may be receiving fewer job offers and renegotiating wages less frequently. Worryingly, research also suggests that less educated workers are the least likely to move in response to geographic differences in labor market conditions (Wozniak 2010), which may make them more vulnerable to employer wage-setting power.

Finally, a comparison of recent trends in jobs vacancies and hiring suggests that in the years immediately following the Great Recession, employers have not faced strong competitive pressure in recruiting. In particular, series from the Job Openings and Labor Turnover Survey (JOLTS) show that while job openings rose sharply over the recovery, monthly rates of quits and hires rose at a slower pace, and the ratio of job openings to hires was higher in 2016 than in any other year since the series began (Figure 5). Some have suggested that this rising number of unfilled vacancies reflects a shortage of qualified workers. However, in a competitive labor market, such "shortages" should dissipate as employers competitively bid up wages to fill their vacancies. But counter to this prediction, Rothstein (2015) finds no evidence that wages have grown faster in sectors with rising job openings. Instead, the failure of hiring and wage growth to keep pace with the rise in job openings is consistent with the incentives faced by firms in an imperfectly competitive labor market; it suggests that companies have a strong interest in hiring workers at their offered wages, but have resisted bidding up wages in order to expand their workforces (Abraham 2015).

**Figure 5: Total Private Job Openings, Hires, and Quits**




Note: Shading denotes recession.
Source: Bureau of Labor Statistics, Job Openings and Labor Turnover Survey

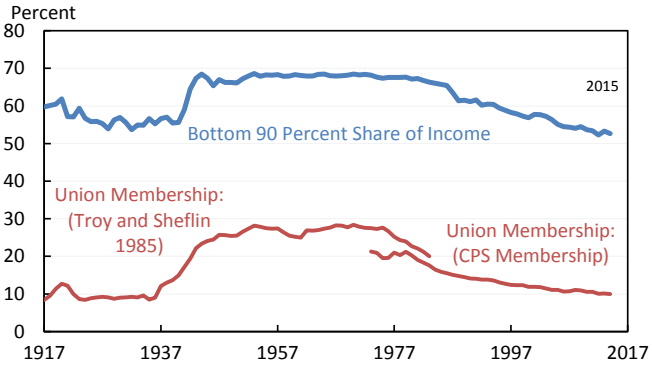
### *Decline of Unions and the Federal Minimum Wage*

The trends toward rising industry concentration, declining labor market dynamism, and increasing regulatory barriers to worker mobility suggest that labor markets have in some ways become less competitive in recent decades, giving employers more power to dictate the wages and working conditions of their employees. In addition, employers may be better able today than in the past to exploit what market power they have. This is because in the past, even when employers were not fully disciplined by the market, they usually faced two other checks on their wage-setting power: unions and the Federal minimum wage.

Unions in the United States can help monitor for anticompetitive conduct that could violate the antitrust laws and report it to the antitrust authorities. They can also counteract employer wage-setting power through collective bargaining. However, union membership has declined consistently since the 1970s. Approximately a quarter of all U.S. workers belonged to a union in 1955 but, by 2015, union membership had dropped to about 10 percent of total employment, roughly the same level as the mid-1930s. Union membership

is even lower in the private sector, at just under 7 percent, and in some States, less than 5 percent of all workers belong to unions (Bureau of Labor Statistics 2016). Research suggests that declining unionization accounts for between a fifth and a third of the increase in inequality since the 1970s (Western and Rosenfeld 2011).

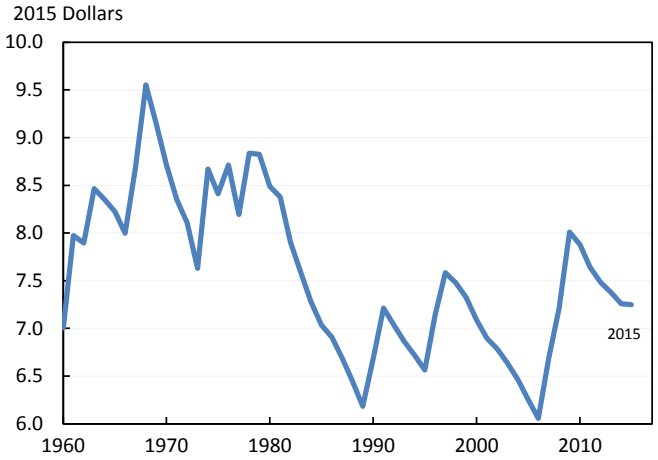
**Figure 6: Union Membership as a Share of Total Employment and Bottom 90 Percent Share of Income, 1915-2015**




Note: Total employment prior to 1947 is derived from estimates in Weir (1992). For 1948 to 2015, employment data are annual averages from the monhtly Current Population Survey.
Source: Troy and Sheflin (1985); Bureau of Labor Statistics, Current Population Survey; Weir (1992); CEA calculations

The Federal minimum wage has also provided a check against monopsony wage setting in the past—especially among the lowest earners, who are often the most vulnerable to wage-setting power by employers. In a trend that parallels the decline in unions, however, the real value of the Federal minimum wage has declined 24 percent since its peak of $9.55 (in 2015 dollars) in 1968, eroding its ability to protect those workers with the fewest options.

**Figure 7: Real Value of the Federal Minimum Wage, 1960–2015**




Source: Bureau of Labor Statistics; CEA calculations

## Policy Solutions

In a perfectly competitive market, where wages are driven by labor productivity, the best solution to raising wages and reducing inequality is to invest in skills that boost productivity. But in the presence of anti-competitive firm behavior or labor market frictions that limit competition, policy must take a multipronged approach to promoting wage and job growth.

In a recent speech, Acting Assistant Attorney General Renata B. Hesse emphasized that anti-trust enforcement efforts are focused at "harm to the competitive process wherever it occurs," and benefit not just consumers but "also benefit workers, whose wages won't be driven down by dominant employers with the power to dictate terms of employment" (Hesse 2016). Detecting and prosecuting collusive behavior is an important priority for the antitrust agencies, both to eliminate the specific conduct in question and for its value as a deterrent in other settings. In the past decade, DOJ has brought a number of successful enforcement actions involving labor market collusion.

While enforcement of anti-trust laws can and does play a role in stopping anti-competitive conduct in labor markets, a firm's ability to exercise market power in the labor market depends on many factors. Promoting competition must therefore include, but not be limited to, aggressive anti-trust enforcement. Additional important policies include those that facilitate job search, increase worker options, and directly counter the wage-setting power of employers.

In April 2016, President Obama issued an executive order requiring agencies across the Federal government to consider specific actions to promote competition. Since then, the Administration has advanced and supported a number of steps to promote competition and level the playing field for workers in in the job market, building on a strong record throughout the preceding years.

### *Independent Anti-Trust Enforcement*

The DOJ and Federal Trade Commission (FTC) are responsible for enforcing the nation's antitrust laws

and ensuring both consumers and workers reap the benefits of an open and competitive marketplace. Part of that mission includes prosecuting firms for entering into agreements with competitors to limit competition.

Like price-fixing or limiting competition in the product market, it is illegal for firms to fix wages or benefits, or otherwise agree to limit competition for workers in the labor market. Human resource (HR) professionals are well positioned to have knowledge of collusive conduct in employment settings. The DOJ and FTC are launching a campaign to educate firms and HR professionals about what constitutes collusion, how to spot it, and how to report it to the DOJ and FTC's antitrust hotlines.

Whistleblower protections support the reporting of workplace violations in many areas including discrimination, wage theft, overtime non-compliance, and health and safety issues. These protections prohibit employers from taking "adverse action" against an employee for reporting or otherwise participating in a proceeding regarding an employer's illegal behavior. These actions include, but are not limited to, demotion, discharge, intimidation or harassment, reducing pay or hours, and blacklisting. Similar protections may be appropriate for employees who report antitrust violations, such as agreements to fix prices or wages.

### *Reform Laws Pertaining to use of Non-Compete Agreements*

Earlier this year, the White House and the Treasury Economic Policy Office released reports on the misuse of non-compete agreements in the United States. In August, the White House, along with the U.S. Departments of Labor and Treasury, convened economists, private-sector leaders, experts in employment and labor law, and others to discuss State policy best practices, as well as the State of research and data on non-compete clauses.

Today, the Administration has released a set of best practices and call-to-action for States to implement specific policy reforms to curb the use of unnecessary non-compete agreements and to increase the effectiveness of enforcement of laws regarding the use of non-competes. Key priorities include: banning non-compete agreements for categories of workers, such as workers under a certain income threshold, workers in public interest vocations, and workers who have been terminated or laid off without cause; improving transparency and fairness of non-compete contracts and employer practices; and encouraging employers to write enforceable contracts.

A more complete understanding of how non-competes affect workers and employers requires better data and further research. The Administration is therefore working with PayScale and researchers supported by the Ewing Marion Kauffman Foundation to develop and field new survey questions on non-compete clauses to learn more about who signs them, what they contain, and how they are negotiated, and to help raise job-seeker awareness about the use of non-compete agreements. New data will also allow researchers to evaluate reform efforts and to improve our understanding of how legal regimes can best allow firms to protect their investments while safeguarding against negative distributional impacts on workers.

### *Improve Information Available to Workers and Promote Pay Transparency*

Despite the common use of online job sites, individuals still have imperfect information about alternative job opportunities, and obtaining this information can be costly. Lack of awareness reduces employees' ability to change jobs or leverage outside opportunities for higher wages and improved work conditions.

Policy that promote awareness can help ensure that employees have adequate information to make employment decisions.

In 2014, the President signed Executive Order 13665 Non-Retaliation for Disclosure of Compensation Information. The EO prohibits Federal contractors from discriminating against employees and applicants "who inquire about, discuss, or disclose their own compensation or the compensation of other employees or applicants." It represents one step forward in stopping the widespread practice of

firing or otherwise punishing employees for talking about their pay.

In the case of non-compete agreements, even in California where non-compete agreements are unenforceable, about one in five workers still sign contracts that include these clauses. This phenomenon suggests that workers may not be aware of local law, or that employers do not expect engagement. The MOVE Act proposed by Senators Franken and Murphy would require employers who use non-compete agreements to post information on how these clauses work in the context of their State policy on non-compete agreements, to minimize confusion and educate workers.

New data on the use of non-compete clauses that will be collected and reported by PayScale will also help to inform workers about the prevalence of these contracts in industries and occupations where they are seeking employment.

A lack of worker information can also lead to discrimination based on biases, both overt and unconscious. In September, the Equal Employment Opportunity Commission (EEOC), in coordination with the Department of Labor, published a final action to annually collect summary pay data by gender, race, and ethnicity from businesses with 100 or more employees, covering over 63 million employees. This step—stemming from a recommendation of the President's Equal Pay Task Force and a Presidential Memorandum issued in April 2014—will help focus public enforcement of our equal pay laws and provide better insight into pay practices across industries and occupations. It expands on and replaces an earlier plan by the Department of Labor to collect similar information from Federal contractors.

### *Promote Equal Pay*

When firms have wage-setting power, they have an incentive to pay the lowest wage that workers are willing to accept—meaning that individuals who start out facing greater obstacles and fewer opportunities can end up being paid the least. This pattern may be contributing to the gender pay gap.

Women make up nearly half of the U.S. labor force, and are increasingly entering industries and positions traditionally occupied by men. Yet the typical woman working full-time all year earns only 80 percent of what the typical man earns working full-time all year. Despite passage of the Equal Pay Act of 1963, which requires that men and women in the same work place be given equal pay for equal work, the gender wage gap persists.

Since the beginning of his presidency, President Obama has taken a number of steps to close the national wage gap by combating wage discrimination. The first bill he signed into law was the Lilly Ledbetter Fair Pay Act which extended the time period in which claimants can bring pay discrimination claims, enabling victims of pay discrimination to seek redress when they otherwise could not. To build on this step forward, the Administration has repeatedly called on Congress to pass the Paycheck Fairness Act, which would ensure workers' right to discuss compensation without fear of retaliation.

The Administration has also put forward policies to combat other obstacles that women face. Because family responsibilities can limit workers', and especially women's, ability to easily switch jobs, steps that increase access to and the affordability of child care as well as provide for workplace flexibility could improve labor market competitiveness.

### *Expand Paid Sick Leave*

Imperfect competition in the labor market allows firms not only to pay lower wages but also to lower costs through reductions in benefits. Policies that support minimum benefits are therefore an important complement to minimum wage and overtime laws to counter the market power of employers.

The United States is the only advanced country that does not guarantee paid sick leave or paid maternity leave to workers. An estimated 41 million private sector workers—roughly a third of the total private-sector workforce—do not have access to paid sick leave. Low- and middle-income workers are much less likely to have paid sick leave than high-income workers. While roughly 60 percent of workers are

eligible under the Family and Medical Leave Act (FMLA) to take unpaid, job-protected leave for family and medical reasons for more extended absences, many workers are without coverage for shorter-term health care needs and others may not be able to afford to stay home sick if it means the loss of pay.

That is why President Obama expanded paid sick leave to Federal employees with new children and to Federal contract workers to care for themselves, a family member, or another loved one. He continues to call on Congress to pass legislation that guarantees most Americans the chance to earn up to seven days of paid sick leave each year—and urges States, cities and businesses to act where Congress has not.

### *Reform Unnecessary Occupational Licensing Requirements and Increase Portability across States*

In 2015, CEA, the Treasury Office of Economic Policy, and the Department of Labor released a report on the evidence that licensing requirements raise the price of goods and services, restrict employment opportunities, and make it more difficult for workers to take their skills across State lines. Too often, policymakers do not carefully weigh these costs and benefits when making decisions about whether or how to regulate a profession through licensing. Following the report, the Administration worked with Congress, State legislators, and experts to draft and present a series of best practices to help State and local governments better tailor their occupational licensing laws to meet consumer health and safety needs without acting as undue barriers to entry into particular occupations. Since the release of the White House report and recommendations last year, legislators in at least 11 States have proposed 15 reforms in line with these recommendations, and four State bills have passed so far.

The Administration has also worked with Congress to reduce licensing burdens for veterans, service members, and military spouses, who must often move across State lines. Under the President's direction, the Department of Defense established the Military Credentialing and Licensing Task Force in 2012, and with its help, thousands of service members have earned or are in the process of earning civilian occupational credentials and licenses through partnerships with national certifying bodies. Thanks to the leadership of Senators Blumenthal and Klobuchar, the President signed into law the Veterans Skills to Jobs Act in 2012, which requires Federal agencies to recognize relevant military training when certifying veterans for occupational licenses.

And this year, the Department of Labor announced the first ever Federal funding of $7.5 million in grants to support States' efforts to increase the portability of licenses across State lines.

### *Reform Land Use Regulations*

Over the past three decades, local barriers to housing development—including zoning and other land use regulations—have intensified, particularly in the high-growth metropolitan areas increasingly fueling the national economy. The accumulation of such barriers has reduced the ability of many housing markets to respond to growing demand, and is limiting the ability of workers to move to areas with the best jobs for them. But a growing number of regions across the country have responded by modernizing their approaches to housing development regulation. States and localities can improve housing affordability, protect homeowners, and strengthen their economies. The White House released a Housing Development Toolkit that highlights the steps those communities have taken to modernize their housing strategies and expand options and opportunities for hardworking families.

### *Reduce Job Lock through the Affordable Care Act*

By providing workers with affordable non-employer sponsored health insurance options and banning private insurance policies from setting different coverage terms based on health status, the Affordable Care Act reduced job lock. The availability of non-employer sponsored health insurance may also strengthen the bargaining positions of workers who do not leave their employer, since the possibility of doing so introduces greater competition for their labor.

### *Support Workers' Right to Collective Bargaining and Concerted Activity*

While policy should aim to promote competition where possible, some market power is inevitable. So policy should also concern itself with how this power is balanced. Institutional supports like unions and minimum wage laws can help ensure that workers get a fair share of the economic returns to their labor. In fact, unions have certain exemptions from the anti-trust laws, in part reflecting a presumption that, in the absence of unions, employers tend to have greater bargaining power than do individual employees.

Unions have an important distributional impact: by raising worker bargaining power they help bolster wages and improve the working conditions of lower- and middle-wage workers. In turn, they help reduced inequality. In addition, when they work to counter monopsony power, they may help to limit inefficiently low employment that results when firms pay sub-competitive wages.

### *Modernize Overtime Regulations*

In the absence of an up-to-date standard delineating who is exempt from the overtime protections of the Fair Labor Standards Act, monopsony power can allow firms to demand long hours from workers who are not eligible for overtime but who have relatively low salaries. The salary threshold below which most salaried, white collar workers are entitled to overtime is currently so outdated that it provides automatic overtime protections based on salary to just 7 percent of full-time salaried workers today, compared with 62 percent in 1975. In May, the Department of Labor published a final rule that will automatically extend overtime pay eligibility to 4.2 million workers when it takes effect on December 1st. The rule will entitle most salaried white collar workers earning less than $913 a week ($47,476 a year) to overtime pay.

### *Raise the Minimum Wage*

It has been nearly a decade since Congress last passed an increase to the Federal minimum wage. Since the President first called on legislators to act in 2013, 18 States plus the District of Columbia have taken action to raise wages, which the Council of Economic Advisers estimates will benefit over 7 million workers by 2017. More than 60 cities and communities have passed bills or ballot initiatives to raise local minimum wages, whether for city employees or all local minimum wage workers. Businesses such as Costco, Gap, and Walmart have also announced raises to base pay for employees.

At the Federal level, President Obama issued an Executive Order in February 2014 to raise Federal contract workers' base pay, which the CEA estimates will raise wages for an estimated 200,000 contractors and sub-contractors by 2017.

The Administration continues to call on Congress to act and supports the Raise the Wage Act proposed by Senator Patty Murray and Representative Bobby C. Scott.

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