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Helping Firms by Helping Employees?

Work-Life Balance in America

By Nicholas Bloom, Raffaella Sadun, Daniela Scur, and John Van Reenen December 2015

Center for American Progress



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Introduction and summary

There is a long history of debate within business, policy, and economic literature regarding whether firms can improve their performance by treating their employees well.¹ One view is that policies to improve employees' work-life balance—such as working from home, part-time working, child care support, and generous maternity leave—are both expensive and often counterproductive for firms. For example, the U.S. internet firm Yahoo famously banned working from home in February 2013, stating in its leaked e-mail that “Speed and quality are often sacrificed when working at home.”² In this view, improved employee work-life balance will come at the expense of substantially lower profits for most firms.

An alternative view is that improving employees' work-life balance may simultaneously raise firms' profits. For example, the U.S. airline JetBlue allows its call-center employees to work flexible hours from home in order to attract highly skilled employees, such as college educated women with young children, so that JetBlue can offer superior customer service.³

However, how representative are these two anecdotes, and where does the typical American firm lie along the spectrum of work-life-balance policies? To address these questions, we used a double-blind survey originally developed by McKinsey & Company⁴ in order to collect international management and work-life-balance survey data from U.S., U.K., French, and German firms. The survey revealed:

1. The use of better work-life-balance policies—including working from home, part-time working, child care support, and shorter working hours was strongly correlated with both superior general management practices and also higher sales revenues in comparison to firms that lack such policies. This result was robust to controlling for country, industry, and firm characteristics, suggesting that better-managed and better-performing firms treat their employees better.
2. While U.S. firms lead the world in the adoption of modern management practices, their adoption of progressive work-life-balance practices lags behind many European countries—particularly France, Germany, and the United Kingdom.

To further substantiate these findings, we reference the results of a working-from-home experiment at Ctrip, a Nasdaq-listed Chinese travel agency with over 16,000 employees. Call-center employees who volunteered to participate in the experiment were randomly assigned to either work from home or the office for nine months. Working from home led to a 13 percent performance increase, which came from a mix of working more minutes per shift—resulting in less time lost on breaks and commuting—and more calls per minute due to a quieter home-working environment. Home workers also reported improved work satisfaction and employee turnover rates were halved. The experiment was so successful that Ctrip estimated it saved around \$2,000 per home-based employee. Due to the success of the experiment, Ctrip made the option to work from home available to the whole firm. Interestingly, in advance of this experiment, Ctrip was highly skeptical of home working—as were almost all other firms in the travel industry.⁵ This suggests that many firms may not adopt these types of profitable pro-employee work-life-balance practices because of a skepticism regarding the benefits of working from home.

Based on this evidence, we argue that many firms could improve profitability by providing better work-life-balance options for their employees. One question then is: Why were firms not already doing this? Competition should mean that firms tend to adopt profitable practices in the long run. However, these market forces may not always lead all firms to act efficiently in the short run. Indeed, there is empirical evidence of wide variations in performance across firms and plants—even within narrowly defined industries—in recently available accounting and census microdata. For example, in a 2011 research paper, Chad Syverson from the University of Chicago shows that in the average U.S. manufacturing industry—examining data broken down by narrowly defined industry categories such as ready-mix concrete, automotive, or pharmaceutical drugs—the best firms, those in the top 10 percent, are twice as productive as the worst firms, those in the bottom 10 percent, highlighting the existence of huge performance gaps even within these narrowly defined industries.⁶

These performance differentials could be in part attributed to the fact that many firms generally struggle to keep up with management best practices. Examples of this include the revolution of statistical decision making in sports made famous in the book *Moneyball* by Michael Lewis, which highlights how some teams in baseball, as well as in other sports, adopted these winning practices more than a decade before others.⁷ Another example is the slow roll out of lean manufacturing from Japan in the 1970s to the U.S. automotive industries in the 1990s, discussed in detail in the book *The Machine That Changed the World* by James P. Womack,

Daniel T. Jones, and Daniel Roos.⁸ A similar inertia may also explain why many firms underprovide pro-employee, work-life-balance policies even now that many options to improve employees' work-life-balance conditions—such as working from home and job sharing—have become more attractive through rapid improvements in information technology, or IT.

While there may be more scope for many firms to improve both profitability and employee work-life balance, what should be the policy response? One policy approach is to continue to encourage competitive free markets, which prior work has argued leads to the adoption of better management practices, including better work-life-balance policies. Competition appears to force firms to raise their game to survive, improving their management practices.⁹ A second policy approach is to encourage firms to experiment with improved employee work-life-balance policies, such as the program adopted by Ctrip, whereby firms can test what works before rolling out new policies. Greater experimentation is essential for learning what works best for each firm and is likely to lead to improved work-life-balance policies for firms and employees.

International survey data

To investigate these work-life-balance issues, we analyzed firm level measures of work-life-balance practices, management practices, and performance. This report first discusses the collection of this management and work-life-balance data—gathered using a unique survey tool—and then discusses the collection of productivity data, which was taken from more standard firm and industry data sources.

Scoring work-life-balance and management practices

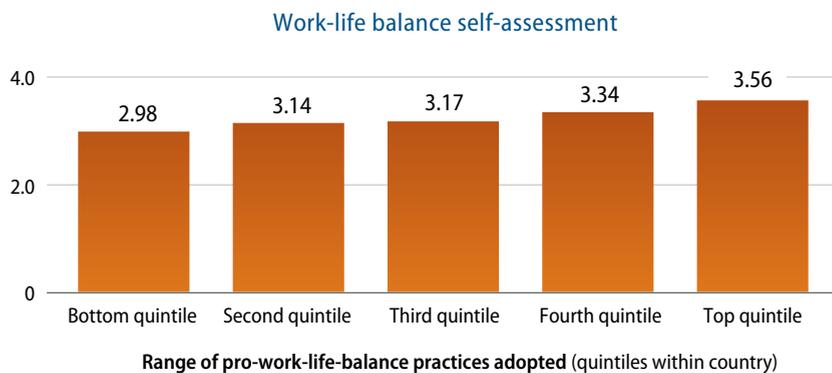
Measuring work-life-balance and management practices requires codifying these concepts into something widely applicable across different firms. This is a difficult task, as work-life balance and good management are tough to define. This report's approach builds on previous work by economists Nick Bloom, Tobin Krestchmer, and John van Reenen,¹⁰ which in turn expands on the prior literature studying work-life balance across firms.¹¹ This approach combines questions that have been used previously in the Workplace Employment Relations Survey, or WERS, an employment conditions survey used in several countries, such as Australia, Canada, France, and the United Kingdom; a management-practice evaluation tool originally developed by McKinsey & Company; and the prior economics and management academic literature.¹²

Work-life balance

This report uses a series of interview questions—included in Appendix A.2—to collect a range of detailed work-life-balance practices and characteristics from firms. The survey was administered to a random sample of firms in the manufacturing industry. The full interview, which includes several other questions about management practices as well, generally lasts approximately one hour, and it was carried out with the most-senior manager at the manufacturing plant. The authors collected two types of key data:

- Data on individuals’ perceptions of work-life balance in their own firms versus other firms in the industry.** This information was used as the report’s work-life-balance outcome measure, defined as the response to the question: “Relative to other companies in your industry how much does your company emphasize work-life balance?” This question was scored as: “Much less” (1); “Slightly less” (2); “The same” (3); “Slightly more” (4); “Much more” (5).
- Data on work-life-balance policies and practices adopted by firms, using key variables, including child care flexibility, home-working practices, part-time to full-time job flexibility, job-sharing schemes, number or hours worked, and holidays.** This was used to construct the report’s work-life-balance practice measure, defined as the average z-score¹³ from six questions: “If an employee needed to take a day off at short notice due to child-care problems or their child was sick how do they generally do this?”; as well as the information on the incidence of working from home during normal working hours, ease of switching from full-time to part-time work, job sharing schemes, provision of financial subsidies to help pay for childcare, actual hours worked by employees, and holidays.

FIGURE 1
Employees’ perceptions of their work-life balance are linked to their firms’ practices



Notes: Scales in this graph are one, the lowest, to five, the highest. Data includes 536 firms from the United States, the United Kingdom, France, and Germany, randomly sampled from the population of all public and private manufacturing firms with 100 to 5000 employees. Work-life-balance self-assessment scored on the basis of employees response to the question, “Relative to other companies in your industry how much does your company emphasize work-life balance” where options range from “Much less,” scoring one, to “Much more,” scoring five. Work-life balance practices are scored on the basis of practices around childcare flexibility, home-working entitlement, part-time and job-sharing flexibility, hours, and holidays.

Reassuringly, as shown in Figure 1, these two measures of work-life balance are strongly related. Employees assess firms that provide a greater degree of flexibility, child care support, longer holidays, and shorter working hours as being more pro-work-life balance. This is an important check to ensure that the report's survey measures of work-life balance translate from theory to practice: That is to say, firms that offer these practices are also assessed as being pro-employee work-life balance. Given this tight connection between these two measures, the rest of this paper will focus on the practice measures.

The authors also collected additional background data on the proportion of female employees, as well as a full set of conditioning variables on skills, such as the proportion of employees that are college educated, employees' training levels, and unionization. This data can be used as a control for other relevant differences across firms.

Management practices

Appendix A.1 details the practices and questions in the same order as they appeared in the survey. It also describes the survey's scoring system and provides three anonymous responses per survey question. These practices can be grouped into four areas: operations, consisting of three practices; monitoring, consisting of five practices; targets, consisting of five practices; and incentives, consisting of five practices. The operations management section focuses on the introduction of lean manufacturing techniques such as just-in-time manufacturing, standardized workplaces, as well as so-called takt time and pull flow systems. Additionally, the operations section considers a firm's documentation of process improvements and the rationale behind improvement that were introduced. The monitoring section focuses on tracking the performance of individuals; reviewing performance through regular appraisals and job plans; and consequence management by making sure that plans are kept and appropriate sanctions and rewards are in place. The targets section examines the type of targets, exploring whether goals are simply financial and operational or more holistic; the realism of the targets, including if they are stretching, unrealistic, or nonbinding; the transparency of targets, be they simple or complex; and the range and interconnection of targets by examining whether they are given consistently throughout the organization. Finally, incentives, or people management, include promotion criteria, pay and bonuses, and fixing or firing bad performers, where best practice is deemed to be an approach that gives strong rewards to those possessing ability and displaying effort.

This approach builds on the authors' work described in a prior set of papers, particularly Dorgan, Dowdy and Rippin; Bloom and Van Reenen; and Bloom, Lemos, Sadun, Scur, and Van Reenen.¹⁴ A subset of the practices has similarities with those used in other earlier studies on human resource management practices, such as Ichniowski, Shaw, and Prenushi; Black and Lynch; and Bartel, Ichniowski, and Shaw.¹⁵

Because the scaling may vary across practices in the econometric estimation, the scores are converted from the one-to-five scale to z-scores by normalizing by practice to mean zero and standard deviation one. In the main econometric specifications, the unweighted average across all z-scores is taken as the primary measure of overall managerial practice,¹⁶ but the analysis also includes robustness checks with other weightings schemes based on factor analysis approaches.

There is room for disagreement over whether all of these measures really constitute good practice. Therefore, an important way to examine the external validity of the measures is to examine whether they correlate with data on firm performance constructed from company accounts, as well as the stock market.

Collecting accurate responses

With this evaluation tool, it is possible, in principle, to provide some quantification of firms' work-life-balance and management practices. However, an important issue is the extent to which unbiased information can be obtained from firms. In particular, will respondents provide accurate responses? As is well known in the surveying literature,¹⁷ respondents' answers to survey questions are typically biased toward those answers that they expect the interviewer thinks are correct. In addition, interviewers may themselves have preconceptions about the performance of the firms they are interviewing and bias their scores based on their preconceived perceptions. More generally, a range of background characteristics—potentially correlated with good and bad managers—may generate some element of systematic bias in the survey data.

The authors took a range of steps to obtain accurate data and account for these potential issues:

- **The survey was conducted by telephone without telling the managers they were being scored.**¹⁸ This enabled scoring to be based on the interviewer’s systematic evaluation of the actual firm practices rather than the firm’s aspirations, the manager’s perceptions, or the interviewer’s impressions.¹⁹ To run this blind scoring, we used open questions—such as “Can you tell me how you promote your employees?”—rather than closed questions—such as “Do you promote your employees on tenure [yes/no]?” These questions target actual practices and examples with the discussion continuing until the interviewer could make an accurate assessment of the firm’s typical practices. Generally, about three or four questions were needed to score each practice.
- **The interviewers did not know anything about the firm’s financial information or performance in advance of the interview.** This was achieved by selecting medium-sized manufacturing firms and providing only firm names and contact details to the interviewers but no financial details. These smaller firms would not typically be known by name and are rarely reported in the business media. The interviewers were specially trained graduate students from European and U.S. business schools with a median age of 28 and five years of prior business experience in the manufacturing sector. All interviews were conducted in the manager’s native language.
- **Each interviewer conducted more than 50 interviews on average so that the authors could remove interviewer-fixed effects from all empirical specifications.** This helped the authors to address concerns about inconsistent interpretation of categorical responses, thus standardizing the scoring system.
- **The survey instrument was targeted at plant managers.** Plant managers are typically senior enough to have an overview of management practices but not so senior as to be detached from day-to-day operations of the enterprise.
- **Interviewers also documented a detailed list of information about the interview process.** Regarding the interview, this information includes the number and type of prior contacts before obtaining the interviews, duration, local time of day, date, day of the week, and a subjective reliability score assigned by the

interviewer. Regarding the manager, this includes gender, seniority, nationality, company, job tenure, internal and external employment experience, and location. The analysis also controls for interviewer fixed effects. Some of these survey controls are significantly informative about the management score, and when these were used as controls for interview noise in our econometric evaluations, the coefficient on the management score typically increased.²⁰

Obtaining interviews with managers

The interview process took about one hour on average and was run from the London School of Economics. Overall, interviewers obtained a high response rate of 54 percent, which they achieved through four steps:

1. **The interview was introduced as “a piece of work”²¹** without discussion of the firm’s financial position or its company accounts, making it relatively uncontroversial for managers to participate. Interviewers did not discuss financials in the interviews, both to maximize the participation of firms and to ensure the interviewers were truly blind on the firm’s financial position.
2. **Questions were ordered to lead with the least controversial**, such as shop-floor management, and finish with the most controversial, including pay, promotions, and firings. The work-life-balance questions were placed at the end of the interview in order to ensure the most candid responses.
3. **The interviewers’ performance was monitored**, as was the proportion of interviews achieved. Consequently, the interviewers were persistent in chasing firms—each interviewer had a median of six contacts per interview. The questions were also about practices within the firm to which any plant manager could respond, so there were potentially several managers per firm who could be contacted.²²
4. **Written endorsement** of the Deutsche Bundesbank in Germany and Her Majesty’s Treasury in the United Kingdom, as well as a scheduled presentation to the Banque de France, helped demonstrate to managers this was an important exercise with official support.

Sampling frame and additional data

Because the aim was to compare across countries, the research focuses on the manufacturing sector, where productivity is easier to measure than in the non-manufacturing sector. The project also focused on medium-sized firms, selecting a sample where employment ranged between 50 and 5,000 workers with a median of 300. Very-small firms have little publicly available data. Very large firms are likely to be more heterogeneous across plants, and it would be more difficult to get a picture of managerial performance in the firm as a whole from one or two plant interviews. A sample of firms was drawn from each country in order to be representative of medium-sized manufacturing firms, and the order in which firms were contacted was then randomly chosen. (See Appendix B) Any clients of our partnering consultancy firm, McKinsey & Company, were also excluded from the sample.²³

When comparing the responding firms with those in the sampling frame, no evidence was found that the responders were systematically different to the non-responders on any of the performance measures. They were also not statistically different on all the other observables in the dataset. The only exception was on size, where the responding firms were slightly larger on average than those in the sampling frame.

Evaluating and controlling for potential measurement error

To quantify possible measurement error in the work-life-balance and management-practice scores obtained using our survey tool, repeat interviews were performed on management-practice data with 64 firms, in which different managers were contacted within each firm—typically at different plants—using different interviewers. To the extent that the measures truly detect general company-wide practices, these two scores should be correlated, while to the extent that the measures are not truly informative of company practices, these should be independent.

The average firm-level management scores from the first interview against the second interview are highly correlated, with a correlation of 0.734 and p-value of 0.000. Furthermore, there is no obvious or statistically significant relationship between the degree of measurement error and the absolute score. That is to say,

the high and low scores appear to be as well-measured as average scores, and firms that have high or low scores on the first interview tend to have high or low scores on the second interview. Thus, firms that score below two or above four on the one-to-five scale of composite-management scores appear to be genuinely badly or well managed rather than extreme draws of sampling measurement error.

Firm performance data

Quantitative information on firm sales came from the company accounts and proxy statements, with the details provided in Appendix B. It should be noted that the data cover both public and private firms and thus attempts to be broadly representative of all medium-sized manufacturing firms.

Work-life balance, firm performance, and management practices

Survey evidence

In the survey, we find strong evidence that work-life balance is strongly correlated with firm performance. One way to show this is the summary statistics shown in Figures 2 and 3. Figure 2 illustrates that firms offering a wider range of work-life-balance practices typically achieve higher levels of sales relative to other firms within their respective country. Of course, this is not necessarily a causal relationship: For example, it could be that firms with higher sales earn enough profits to be able to provide greater work-life-balance policies for employees or that there are economies of scale in adopting these practices so that larger firms can spread the fixed cost over a larger base of revenues. Moreover, the magnitudes are quite large, with the movement from the bottom quintile to the top quintile of firms associated with approximately a doubling in firm sales.

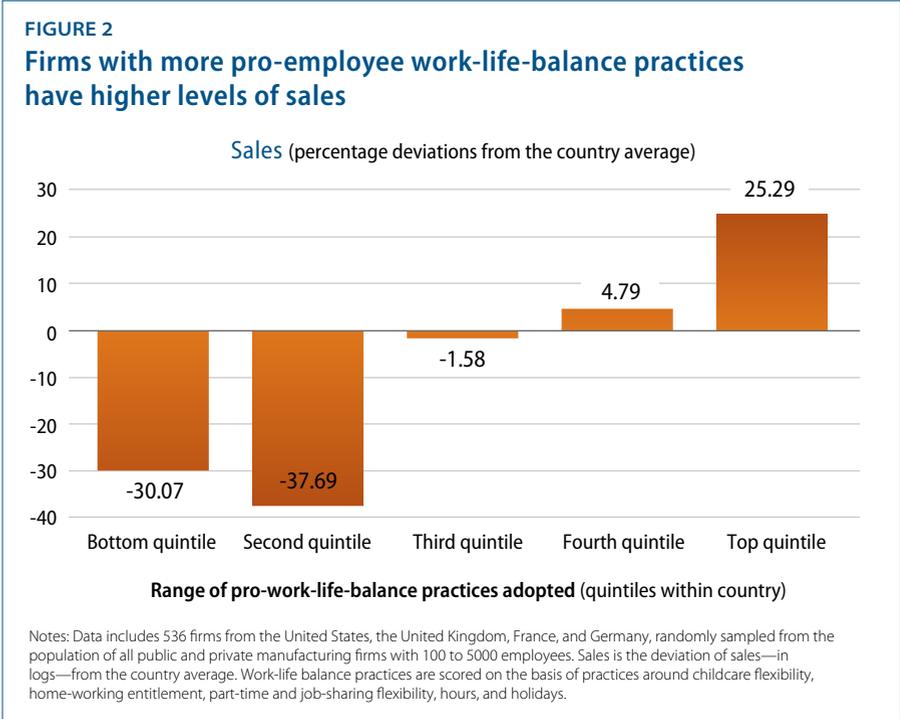
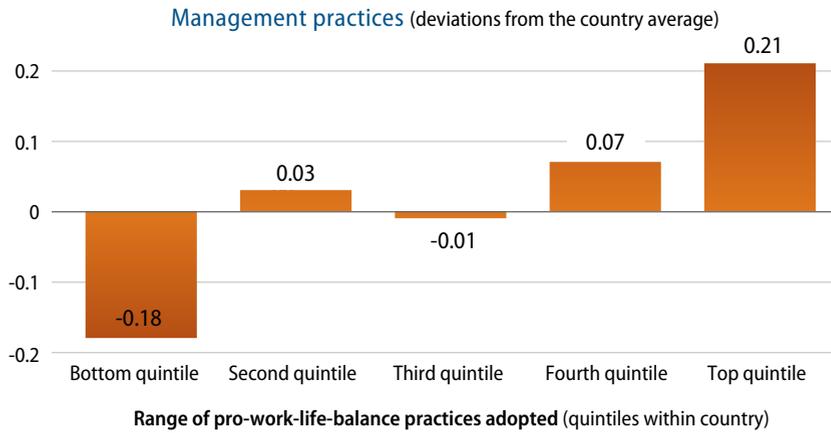


FIGURE 3

Firms with more pro-employee work-life-balance practices use better management practices



Notes: Data includes 536 firms from the United States, the United Kingdom, France, and Germany, randomly sampled from the population of all public and private manufacturing firms with 100 to 5000 employees. Management practices scored on the basis of 18 questions on practices for monitoring, targets, and incentives, where high scores denote continuous monitoring and feedback; tough but realistic targets; rewards for good employee performance; and sanctions or training for poor performance. Work-life balance practices are scored on the basis of practices around childcare flexibility, home-working entitlement, part-time and job-sharing flexibility, hours, and holidays.

In Figure 3, management-practice scores—as assessed using the management survey tool detailed in Appendix A.1—are examined. This tool was originally designed by McKinsey & Company and assesses firms’ management practices along three core dimensions: operations and monitoring, targets, and incentives. High-scoring firms tend to adopt good management practices such as continuous monitoring and feedback; have tough but realistic targets; reward high performing employees; and retrain, move, and/or sanction low-performing employees. As can be seen from Figure 3, adopting these high-performing modern management practices is also strongly linked with adopting more pro-employee work-life-balance practices. Again this relationship is not causal, but it is indicative of the strong link between better performance and improved employee performance.

Finally, Table 1 in the Appendix C includes a regression analysis to investigate these relationships more carefully. In particular, this analysis experiments with controls for industry and potential survey noise or bias, as well as weighting for firm size. Across the eight columns of results—four focusing on sales and four focusing on management—there is a strong and statistically robust relationship between a firm’s adoption of pro-employee work-life-balance practices, firm sales, and their adoption of modern management practices.

Ctrip experimental evidence

The evidence presented above was both survey-based and focused on correlations between work-life-balance practices, as well as sales and management-practices outcomes. This section considers alternative evidence from a randomized control trial of a work-life-balance practice—working from home—in China. This experiment was carried out by Ctrip, China’s largest travel agency, with over 16,000 employees and a Nasdaq listing. Its senior management was interested in allowing its Shanghai call-center employees to work from home as a way to reduce office rental costs, which were increasing rapidly due to the booming real estate market in Shanghai. The senior management also thought that allowing employees to work from home might reduce the firm’s high attrition rates by saving the employees from long commutes. However, the managers worried that allowing employees to work at home—away from the direct oversight of their supervisors—could lead to increased shirking.

To evaluate its potential effect, Ctrip decided to run a nine-month experiment on working from home, which is summarized here and outlined in detail in the report “Does working from home work? Evidence from a Chinese experiment.”²⁴ Managers asked the 996 employees in the airfare and hotel departments of the Ctrip Shanghai call center whether they would be interested in working from home four days a week, with the fifth day in the office as usual. Approximately half of the employees—503—were interested, particularly those who were married, had children, and faced long commutes to work. Of these, 249 were qualified to take part in the experiment by virtue of having at least six months of tenure, broadband access, and a private room at home in which they could work. After a lottery draw, employees with even-numbered birthdates were selected to work from home, while those with odd-numbered birthdates stayed in the office to act as the control group.²⁵

Office and home workers used the same IT equipment; faced the same work-order flow from a common central server; carried out the same tasks; and were compensated under the same pay system, which included an element of individual performance pay. Hence, the only difference between the two groups was the location of work.²⁶

Ctrip found several striking results. First, the performance of the home-workers went up dramatically, increasing 13 percent during the nine months of the experiment. This improvement came mainly from a 9 percent increase in the number of minutes they worked during their shifts—in other words, the time they were logged in to take calls. This was due to a reduction in breaks, time off, and sick days taken by the home workers. The remaining 4 percent improvement came from home workers increasing the number of calls per minute worked. In interviews, the workers attributed this gain to the greater convenience—such as the ease of getting tea, coffee, lunch, or using the toilet—and quiet of working from home. Second, there appear to be no spillovers to the rest of the group. Comparing the control group to similar workers in Ctrip’s other call center in Nantong, the research team found no performance drop despite the fact that the control group lost the working from home lottery. Third, attrition fell sharply among the home workers, dropping by 50 percent compared to the control group. Home workers also reported substantially higher work satisfaction and had more-positive attitudinal survey outcomes.²⁷ An obvious concern with these results would be if the home workers sacrifice quality for quantity. Using two different quality metrics, Ctrip also found that working from home had no effect on overall work quality.²⁸

At the end of the experiment, Ctrip estimated it would save about \$1,900 per year per employee working at home, leading it to offer the option to work from home to the entire firm. It also allowed the treatment and control groups to reselect their working arrangements. Surprisingly, more than half of all the employees changed their minds, indicating the extent that employees learn about their own suitability for working from home. In particular, two-thirds of the control group who initially had all volunteered to work from home 10 months earlier decided to stay in the office, citing concerns regarding the loneliness of home working. Additionally, half of the treatment group changed their minds and returned to the office—on average, those returning were those who had performed relatively poorly at home. As a result of this learning and reselection, the productivity increase from working at home rising to 22 percent, almost double the direct experiment effect of 13 percent. The reason was strong selection effects: Workers with worse performance at home during the nine-month experiment period returned to the office, while those who performed well at home stayed at home. This highlights how the selection effects of employees across different working practices are an important part of better work-life-balance practices.

This experiment also highlights how uncertain and uninformed many firms are about the benefits of adopting work-life-balance practices such as working from home, especially as the advent of IT is rapidly changing the management landscape. Before the experiment, Ctrip was skeptical that allowing its employees to work from home would prove useful but decided to experiment anyway and found that this practice was in fact extremely beneficial.

Business and policy implications for U.S. firms

This evidence suggests it could be helpful to promote improved work-life-balance practices in U.S. firms since this could yield a win-win situation that improves both profits and employees' outcomes. As Figure 4 shows, this is particularly true given that many U.S. firms in the manufacturing sample currently appear to adopt relatively few pro-employee work-life-balance policies compared with their European competitors.

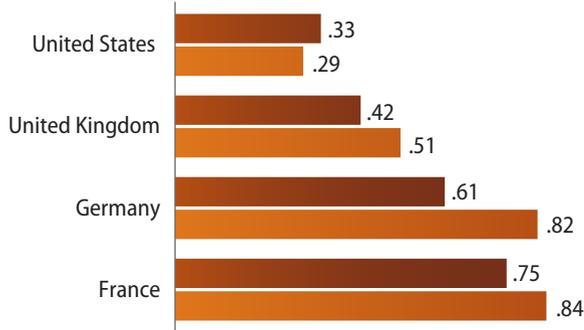
The top-left panel of Figure 4 shows that the frequency of firms allowing employees to switch from full-time work to part-time work—and back—for both managers and nonmanagers in the United States clearly lags behind France and Germany. The top-right panel illustrates that, within the sample, the actual frequency of part-time work in the United States is lower than that in Europe. The bottom-left panel addresses child care flexibility—the ability of employees to unexpectedly take a day-off work to care for a sick child—and shows U.S. firms are similar to the average European firm on this dimension. The bottom-right panel looks at working from home, and U.S. firms are again roughly similar to European firms. In summary, across these four practices, U.S. firms are either behind or level with European firms. Figure 5 addresses another dimension of work-life-balance policies—working hours. The United States has much longer working hours than the other countries. This is illustrated in the left panel, which shows average hours broken out for managers and nonmanagers, and the right panel, which depicts the dearth of U.S. holidays when compared to European firms.

FIGURE 4

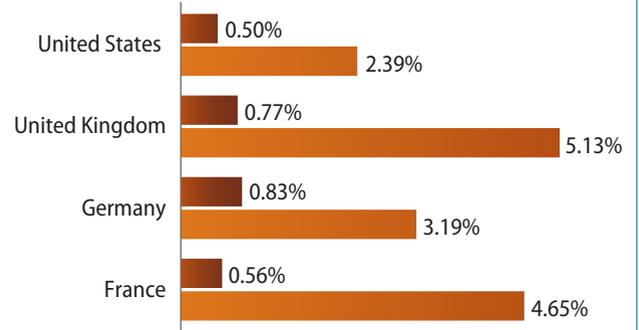
The adoption of pro-employee work-life-balance practices is often lower in the United States

Managers Nonmanagers

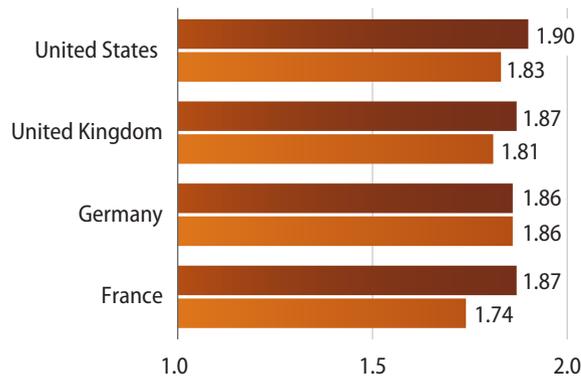
Ability to switch to part-time work
(share of firms)



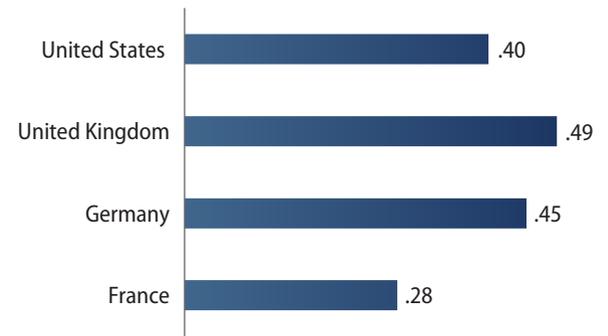
Share of employees that are part time
(average share across firms)



Child care leave flexibility
(firm average, 1=None, 2=Unpaid, 3=Paid)



Ability of managers to work from home
(share of all firms)



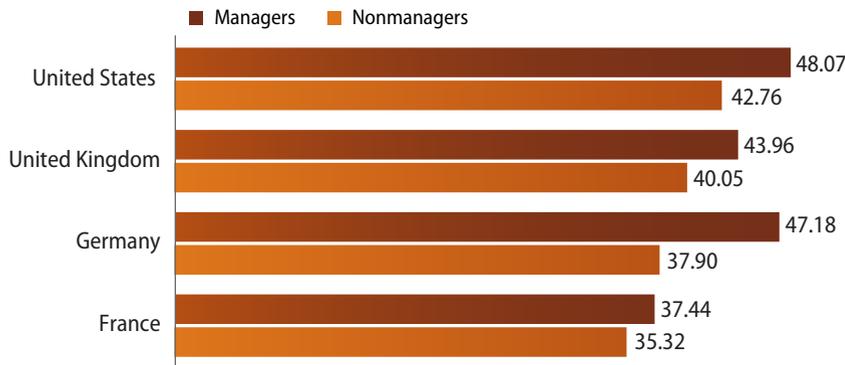
Notes: Data includes 536 firms from the United States, the United Kingdom, France, and Germany, randomly sampled from the population of all public and private manufacturing firms with 100 to 5000 employees. For details of individual questions, see the Appendix.

The overall work-life-balance index—which indexes across these six different measures of employee work-life-balance policies—is lowest for the United States. (see Figure 6) That U.S. firms score so poorly on work-life-balance practices is rather surprising given that U.S. firms are world leaders in management practices. (see Figure 7) Additionally, within countries, well-managed firms tend to adopt better employee work-life-balance practices. (See Figures 2 and 3) So the dilemma is that while well-run firms tend to treat their employees better in terms of part-time flexibility, working from home, and shorter hours, U.S. firms in general tend to provide fewer of these policies despite their strong management performance.

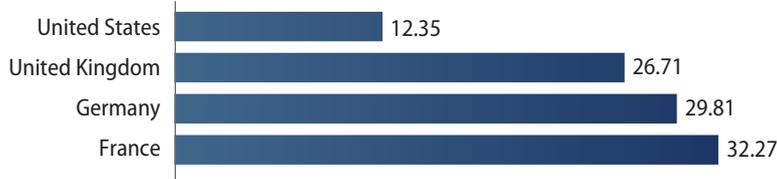
FIGURE 5

U.S. employees work longer hours than those in Europe in the manufacturing sample

Working hours (average across firms by country)



Days of holiday (days across firms by country)

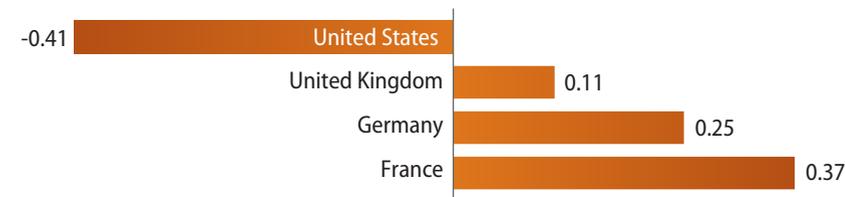


Notes: Data includes 536 firms from the United States, the United Kingdom, France, and Germany, randomly sampled from the population of all public and private manufacturing firms with 100 to 5000 employees.

FIGURE 6

Overall U.S. firms score lower overall on our summary work-life-balance index

Work-life balance index (average across firms by country)

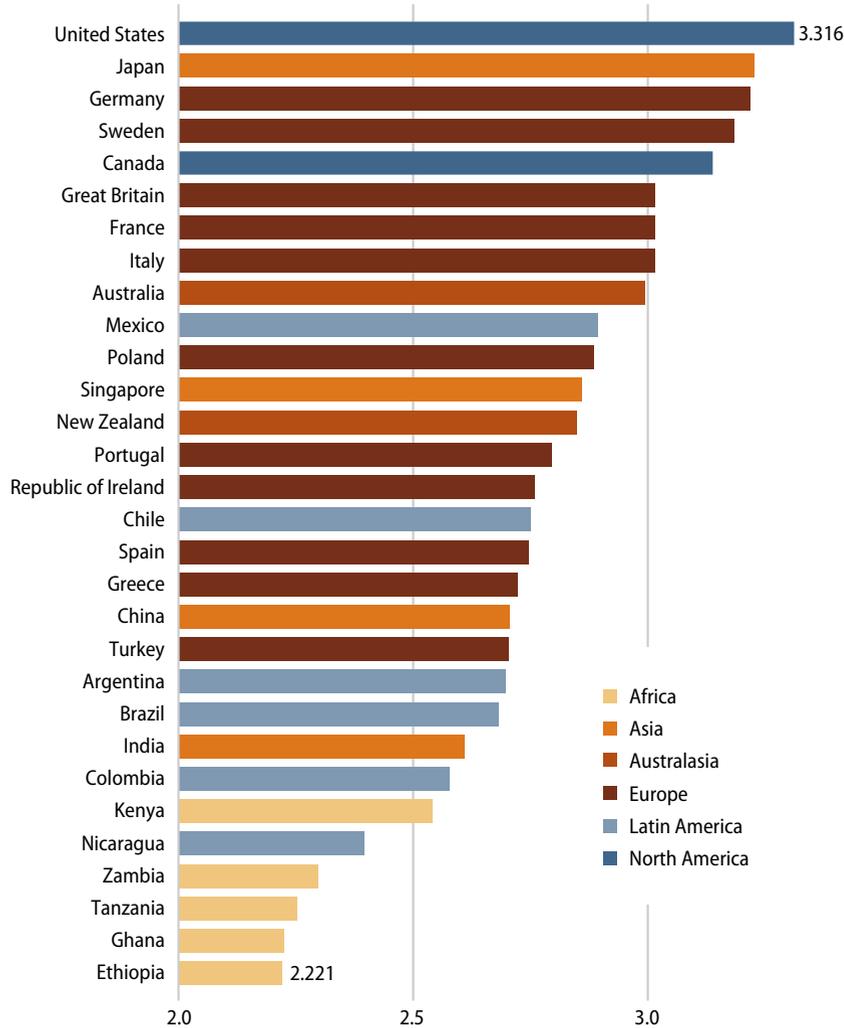


Notes: Data includes 536 firms from the United States, the United Kingdom, France, and Germany, randomly sampled from the population of all public and private manufacturing firms with 100 to 5000 employees. Work-life balance index created from the z-scores—mean 0, standard-deviation 1 normalized—responses to questions on practices around childcare flexibility, home-working entitlement, part-time and job-sharing flexibility, hours, and holidays.

FIGURE 7

The poor U.S. performance on work-life balance is notable given its high management scores

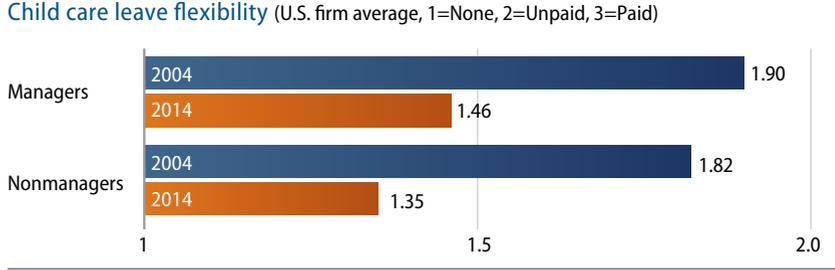
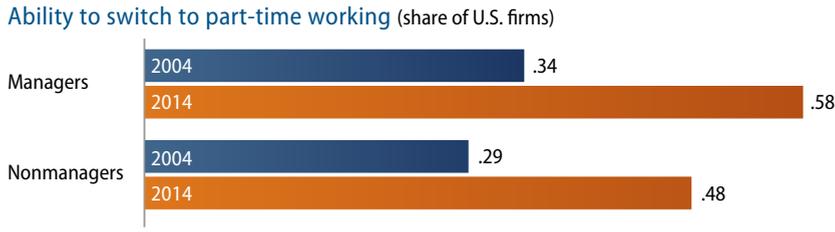
Average management scores, manufacturing firms



Notes: Management practices scored on the basis of 18 questions on practices for monitoring, targets, and incentives, where high scores denote continuous monitoring and feedback, tough but realistic targets, and rewards for good employee performance and sanctions or training for poor performance. Data from 13,456 interviews. See Nicholas Bloom, Renata Lemos, Raffaella Sadun, Daniela Scur, and John Van Reenen, "The new empirical economics of management" *Journal of the European Economic Association* 12 (4) (2014).

One possible explanation is cultural and regulatory differences across countries. Another explanation is that these types of practices are relatively new and many U.S. firms are simply not aware of or familiar with them. Thus, while they may eventually spread, right now their rates of adoption in the United States is patchy. In order to help address this, the continued exposure of firms to product-market competition, ongoing employee education and training, and openness to multinational corporations will be helpful. These levers have traditionally been extremely effective in spreading many types of modern management best practices. Additionally, better information, including high-quality business and academic

FIGURE 8
U.S. work-life-balance policies have improved slightly over the past decade



Notes: Top panels data from 213 U.S. firms in 2014 and 236 in 2004. Bottom also uses data from 394 firms in the United Kingdom, France, and Germany, in 2004. Firms randomly sampled from the population of all public and private manufacturing firms with 100 to 5000 employees. Work-life balance index created from the z-scores—mean 0, standard-deviation 1 normalized—responses to questions on practices around childcare flexibility, home-working entitlement, part-time and job-sharing flexibility, hours, and holidays.

research—such as the Ctrip randomized control trial—alongside more European-style policies could help many firms accelerate the adoption and promotion of pro-employee work-life-balance policies.

To end on a positive note, the U.S. firms that were originally contacted in 2004 were resurveyed in 2014 as a follow-up a decade later. In this second survey, 214 firms were assessed regarding their work-life-balance practices—a very similarly sized sample to the 236 firms contacted in 2004. Figure 8 shows the comparison between U.S. firms in 2014 and U.S. firms in 2004 alongside data from the United Kingdom, France, and Germany in 2004.

There appears to be some room for optimism. U.S. firms appear to be slowly improving their range of pro-employee work-life-balance practices. In particular, there are increases in the number of firms allowing employees to switch between full- and part-time status. Census data also show that the share of employees working from home throughout the entire U.S. economy has risen from 1.4 percent in 2000 to 2.4 percent in 2010, while some evidence points towards more generous sick and personal leave policies.²⁹ Encouragingly, in the bottom panel, we see the overall U.S. work-life-balance index has crept up during the last decade, although it still trails the indices of European states.³⁰

Conclusion

Many firms would be well served by implementing better work-life-balance practices for their workers. This is not simply a moral argument that workers deserve access to policies that make it easier to manage the competing demands in the workplace and at home. Instead, it is grounded in empirical evidence showing that firms also see tangible benefits from the implementation of work-life-balance practices.

International management and work-life-balance survey data from U.S., U.K., French, and German firms—first collected in 2004—demonstrated that the adoption of policies that facilitate working from home or part time, support child care, and provide shorter working hours are strongly correlated with better management practices and better sales per employee—even when other factors are taken into account. Follow-up surveys conducted a decade later suggest that at least some firms have internalized this notion, as access to these types of policies has seemingly increased in the United States.

A randomized control trial testing the hypothesis that work-life-balance policies can improve companies' bottom lines resulted from Ctrip's work-from-home trial. Call-center employees randomly assigned to work from home increased their performance by 13 percent, leading to about \$2,000 in per-employee cost savings. After the success of the experiment, the firm extended the option to all employees. The company's initial skepticism—coupled with its eventual embrace and expansion of the policy—indicates that firms may be initially reluctant to adopt these kinds of practices in spite of the potential for productivity and profitability.

To help address this, the continued exposure of firms to product market competition; ongoing employee education and training; and exposure to the business practices of multinational firms will be helpful. These levers have traditionally been extremely effective in spreading many types of modern management best practices. Second, better information—including both high-quality business and academic research, such as the Ctrip randomized control trial—alongside more European-style policies could assist many firms in accelerating widespread adoption of pro-employee work-life-balance policies.

The data presented in this report suggests that the United States is moving in the direction of offering more work-life-balance policies to workers—but these types of policies are still less common here than in the other advanced economies surveyed. The benefits are clear: More widespread adoption of these practices could benefit both employees and employers by supporting workers while simultaneously increasing productivity and profitability.

About the authors

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Appendix A

Appendix A.1: Management practice interview guide and example responses

Any score from 1 to 5 can be given, but the scoring guide and examples are only provided for scores of 1, 3 and 5. Multiple questions are used for each dimension to improve scoring accuracy.

(1) Modern manufacturing, introduction			
	a) Can you describe the production process for me? b) What kinds of lean (modern) manufacturing processes have you introduced? Can you give me specific examples? c) How do you manage inventory levels? What is done to balance the line? What is the Takt time of your manufacturing processes?		
Scoring grid:	Score 1 Other than JIT delivery from suppliers few modern manufacturing techniques have been introduced, (or have been introduced in an ad-hoc manner)	Score 3 Some aspects of modern manufacturing techniques have been introduced, through informal/isolated change programs	Score 5 All major aspects of modern manufacturing have been introduced (Just-in-time, automation, flexible manpower, support systems, attitudes and behaviour) in a formal way
Examples:	A UK firm orders in bulk and stores the material on average 6 months before use. The business focuses on quality and not reduction of lead-time or costs. Absolutely no modern manufacturing techniques had been introduced.	A supplier to the army is undergoing a full lean transformation. For 20 years, the company was a specialty supplier to the army, but now they have had to identify other competencies forcing them to compete with lean manufacturers. They have begun adopting specific lean techniques and plan to use full lean by the end of next year.	A US firm has formally introduced all major elements of modern production. It reconfigured the factory floor based on value stream mapping and 5-S principles, broke production into cells, eliminated stockrooms, implemented Kanban, and adopted Takt time analyses to organize workflow.
(2) Modern manufacturing, rationale			
	a) Can you take through the rationale to introduce these processes? b) What factors led to the adoption of these lean (modern) management practices?		
Scoring grid:	Score 1 Modern manufacturing techniques were introduced because others were using them.	Score 3 Modern manufacturing techniques were introduced to reduce costs	Score 5 Modern manufacturing techniques were introduced to enable us to meet our business objectives (including costs)
Examples:	A German firm introduced modern techniques because all its competitors were using these techniques. The business decision had been taken to imitate the competition.	A French firm introduced modern manufacturing methods primarily to reduce costs.	A US firm implemented lean techniques because the COO had worked with them before and knew that they would enable the business to reduce costs, competing with cheaper imports through improved quality, flexible production, greater innovation and JIT delivery.

(3) Process problem documentation

- a) How would you go about improving the manufacturing process itself?
- b) How do problems typically get exposed and fixed?
- c) Talk me through the process for a recent problem.
- d) Do the staff ever suggest process improvements?

Scoring grid:	Score 1 No, process improvements are made when problems occur.	Score 3 Improvements are made in one week workshops involving all staff, to improve performance in their area of the plant	Score 5 Exposing problems in a structured way is integral to individuals' responsibilities and resolution occurs as a part of normal business processes rather than by extraordinary effort/teams
Examples:	A US firm has no formal or informal mechanism in place for either process documentation or improvement. The manager admitted that production takes place in an environment where nothing has been done to encourage or support process innovation.	A US firm takes suggestions via an anonymous box, they then review these each week in their section meeting and decide any that they would like to proceed with.	The employees of a German firm constantly analyse the production process as part of their normal duty. They film critical production steps to analyse areas more thoroughly. Every problem is registered in a special database that monitors critical processes and each issue must be reviewed and signed off by a manager.

(4) Performance tracking

- a) Tell me how you track production performance?
- b) What kind of KPI's would you use for performance tracking? How frequently are these measured? Who gets to see this KPI data?
- c) If I were to walk through your factory could I tell how you were doing against your KPI's?

Scoring grid:	Score 1 Measures tracked do not indicate directly if overall business objectives are being met. Tracking is an ad-hoc process (certain processes aren't tracked at all)	Score 3 Most key performance indicators are tracked formally. Tracking is overseen by senior management.	Score 5 Performance is continuously tracked and communicated, both formally and informally, to all staff using a range of visual management tools.
Examples:	A manager of a US firm tracks a range of measures when he does not think that output is sufficient. He last requested these reports about 8 months ago and had them printed for a week until output increased again.	At a US firm every product is bar-coded and performance indicators are tracked throughout the production process; however, this information is not communicated to workers	A US firm has screens in view of every line. These screens are used to display progress to daily target and other performance indicators. The manager meets with the shop floor every morning to discuss the day past and the one ahead and uses monthly company meetings to present a larger view of the goals to date and strategic direction of the business to employees. He even stamps napkins with key performance achievements to ensure everyone is aware of a target that has been hit.

(5) Performance review

- a) How do you review your KPI's?
- b) Tell me about a recent meeting
- c) Who is involved in these meetings? Who gets to see the results of this review?
- d) What are the typical next steps after a meeting?

Scoring grid:

Score 1

Performance is reviewed infrequently or in an un-meaningful way e.g. only success or failure is noted.

Score 3

Performance is reviewed periodically with successes and failures identified. Results are communicated to senior management. No clear follow-up plan is adopted.

Score 5

Performance is continually reviewed, based on indicators tracked. All aspects are followed up ensure continuous improvement. Results are communicated to all staff

Examples:

A manager of a US firm relies heavily on his gut feel of the business. He will review costs when he thinks there is too much or too little in the stores. He admits he is busy so reviews are infrequent. He also mentioned staffs feel like he is going on a hunt to find a problem, so he has now made a point of highlighting anything good.

A UK firm uses daily production meetings to compare performance to plan. However, clear action plans are infrequently developed based on these production results.

A French firm tracks all performance numbers real time (amount, quality etc). These numbers are continuously matched to the plan on a shift-by-shift basis. Every employee can access these figures on workstations on the shop floor. If scheduled numbers are not met, action for improvement is taken immediately.

(6) Performance dialogue

- a) How are these meetings structured? Tell me about your most recent meeting.
- b) During these meeting do you find that you generally have enough data?
- c) How useful do you find problem solving meetings?
- d) What type of feedback occurs in these meetings?

Scoring grid:

Score 1

The right data or information for a constructive discussion is often not present or conversations overly focus on data that is not meaningful. Clear agenda is not known and purpose is not stated explicitly

Score 3

Review conversations are held with the appropriate data and information present. Objectives of meetings are clear to all participating and a clear agenda is present. Conversations do not, as a matter of course, drive to the root causes of the problems.

Score 5

Regular review/performance conversations focus on problem solving and addressing root causes. Purpose, agenda and follow-up steps are clear to all. Meetings are an opportunity for constructive feedback and coaching.

Examples:

A US firm does not conduct staff reviews. It was just “not the philosophy of the company” to do that. The company was very successful during the last decade and therefore did not feel the need to review their performance.

A UK firm focuses on key areas to discuss each week. This ensures they receive consistent management attention and everyone comes prepared. However, meetings are more of an opportunity for everyone to stay abreast of current issues rather than problem solve.

A German firm meets weekly to discuss performance with workers and management. Participants come from all departments (shop floor, sales, R&D, procurement etc.) to discuss the previous week performance and to identify areas to improve. They focus on the cause of problems and agree topics to be followed up the next week, allocating all tasks to individual participants.

(7) Consequence management

- a) What happens if there is a part of the business (or a manager) who isn't achieving agreed upon results? Can you give me a recent example?
- b) What kind of consequences would follow such an action?
- c) Are there any parts of the business (or managers) that seem to repeatedly fail to carry out agreed actions?

Scoring grid:	Score 1 Failure to achieve agreed objectives does not carry any consequences	Score 3 Failure to achieve agreed results is tolerated for a period before action is taken.	Score 5 A failure to achieve agreed targets drives retraining in identified areas of weakness or moving individuals to where their skills are appropriate
Examples:	At a French firm no action is taken when objectives aren't achieved. The President personally intervenes to warn employees but no stricter action is taken. Cutting payroll or making people redundant because of a lack of performance is very rarely done.	Management of a US firm reviews performance quarterly. That is the earliest they can react to any underperformance. They increase pressure on the employees if targets are not met.	A German firm takes action as soon as a weakness is identified. They have even employed a psychologist to improve behavior within a difficult group. People receive ongoing training to improve performance. If this doesn't help they move them in other departments or even fire individuals if they repeatedly fail to meet agreed targets

(8) Target balance

- a) What types of targets are set for the company? What are the goals for your plant?
- b) Tell me about the financial and non-financial goals?
- c) What do CHQ (or their appropriate manager) emphasize to you?

Scoring grid:	Score 1 Goals are exclusively financial or operational	Score 3 Goals include non-financial targets, which form part of the performance appraisal of top management only (they are not reinforced throughout the rest of organization)	Score 5 Goals are a balance of financial and non-financial targets. Senior managers believe the non-financial targets are often more inspiring and challenging than financials alone.
Examples:	At a UK firm performance targets are exclusively operational. Specifically volume is the only meaningful objective for managers, with no targeting of quality, flexibility or waste.	For French firm strategic goals are very important. They focus on market share and try to hold their position in technology leadership. However, workers on the shop floor are not aware of those targets.	A US firm gives everyone a mix of operational and financial targets. They communicate financial targets to the shop floor in a way they found effective – for example telling workers they pack boxes to pay the overheads until lunchtime and after lunch it is all profit for the business. If they are having a good day the boards immediately adjust and play the “profit jingle” to let the shop floor know that they are now working for profit. Everyone cheers when the jingle is played.

(9) Target interconnection

- a) What is the motivation behind your goals?
- b) How are these goals cascaded down to the individual workers?
- c) What are the goals of the top management team (do they even know what they are!)?
- d) How are your targets linked to company performance and their goals?

Scoring grid:	Score 1 Goals are based purely on accounting figures (with no clear connection to shareholder value)	Score 3 Corporate goals are based on shareholder value but are not clearly communicated down to individuals	Score 5 Corporate goals focus on shareholder value. They increase in specificity as they cascade through business units ultimately defining individual performance expectations.
Examples:	A family owned firm in France is only concerned about the net income for the year. They try to maximize income every year without focusing on any long term consequences.	A US firm bases its strategic corporate goals on enhancing shareholder value, but does not clearly communicate this to workers. Departments and individuals have little understanding of their connection to profitability or value with many areas labeled as “cost-centers” with an objective to cost-cut despite potentially disproportionately large negative impact on the other departments they serve.	For a US firm strategic planning begins with a bottom up approach that is then compared with the top down aims. Multifunctional teams meet every 6 months to track and plan deliverables for each area. This is then presented to the area head that then agrees or refines it and then communicates it down to his lowest level. Everyone has to know exactly how they contribute to the overall goals or else they won’t understand how important the 10 hours they spend at work every day is to the business.

(10) Target time horizon

- a) What kind of time scale are you looking at with your targets?
- b) Which goals receive the most emphasis?
- c) How are long term goals linked to short term goals?
- d) Could you meet all your short-run goals but miss your long-run goals?

Scoring grid:	Score 1 Top management's main focus is on short term targets	Score 3 There are short and long-term goals for all levels of the organization. As they are set independently, they are not necessarily linked to each other	Score 5 Long term goals are translated into specific short term targets so that short term targets become a "staircase" to reach long term goals
Examples:	A UK firm has had several years of ongoing senior management changes – therefore senior managers are only focusing on how the company is doing this month versus the next, believing that long-term targets will take care of themselves.	A US firm has both long and short-term goals. The long-term goals are known by the senior managers and the short-term goals are the remit of the operational managers. Operations managers only occasionally see the longer-term goals so are often unsure how they link with the short term goals.	A UK firm translates all their goals – even their 5-year strategic goals - into short-term goals so they can track their performance to them. They believe that it is only when you make someone accountable for delivery within a sensible timeframe that a long-term objective will be met. They think it is more interesting for employees to have a mix of immediate and longer-term goals.

(11) Targets are stretching

- a) How tough are your targets? Do you feel pushed by them?
- b) On average, how often would you say that you meet your targets?
- c) Are there any targets which are obviously too easy (will always be met) or too hard (will never be met)?
- d) Do you feel that on targets that all groups receive the same degree of difficulty? Do some groups get easy targets?

	Score 1	Score 3	Score 5
Scoring grid:	Goals are either too easy or impossible to achieve; managers provide low estimates to ensure easy goals	In most areas, top management pushes for aggressive goals based on solid economic rationale. There are a few "sacred cows" that are not held to the same rigorous standard	Goals are genuinely demanding for all divisions. They are grounded in solid, solid economic rationale
Examples:	A French firm uses easy targets to improve staff morale and encourage people. They find it difficult to set harder goals because people just give up and managers refuse to work people harder.	A chemicals firm has 2 divisions, producing special chemicals for very different markets (military, civil). Easier levels of targets are requested from the founding and more prestigious military division.	A manager of a UK firm insisted that he has to set aggressive and demanding goals for everyone – even security. If they hit all their targets he worries he has not stretched them enough. Each KPI is linked to the overall business plan.

(12) Performance clarity

- a) What are your targets (i.e. do they know them exactly)? Tell me about them in full.
- b) Does everyone know their targets? Does anyone complain that the targets are too complex?
- c) How do people know about their own performance compared to other people's performance?

	Score 1	Score 3	Score 5
Scoring grid:	Performance measures are complex and not clearly understood. Individual performance is not made public	Performance measures are well defined and communicated; performance is public in all levels but comparisons are discouraged	Performance measures are well defined, strongly communicated and reinforced at all reviews; performance and rankings are made public to induce competition
Examples:	A German firm measures performance per employee based on differential weighting across 12 factors, each with its own measurement formulas (e.g. Individual versus average of the team, increase on prior performance, thresholds etc.). Employees complain the formula is too complex to understand, and even the plant manager could not remember all the details.	A French firm does not encourage simple individual performance measures as unions pressure them to avoid this. However, charts display the actual overall production process against the plan for teams on regular basis.	At a US firm self-directed teams set and monitor their own goals. These goals and their subsequent outcomes are posted throughout the company, encouraging competition in both target setting and achievement. Individual members know where they are ranked which is communicated personally to them bi-annually. Quarterly company meetings seek to review performance and align targets.

(13) Managing human capital

- a) Do senior managers discuss attracting and developing talented people?
- b) Do senior managers get any rewards for bringing in and keeping talented people in the company?
- c) Can you tell me about the talented people you have developed within your team? Did you get any rewards for this?

Scoring grid:	Score 1 Senior management do not communicate that attracting, retaining and developing talent throughout the organization is a top priority	Score 3 Senior management believe and communicate that having top talent throughout the organization is a key way to win	Score 5 Senior managers are evaluated and held accountable on the strength of the talent pool they actively build
Examples:	A US firm does not actively train or develop its employees, and does not conduct performance appraisals or employee reviews. People are seen as a secondary input to the production.	A US firm strives to attract and retain talent throughout the organization, but does not hold managers individually accountable for the talent pool they build. The company actively cross-trains employees for development and challenges them through exposure to a variety of technologies.	A UK firm benchmarks human resources practices at leading firms. A cross-functional HR excellence committee develops policies and strategies to achieve company goals. Bi-monthly directors' meetings seek to identify training and development opportunities for talented performers.

(14) Rewarding high-performance

- a) How does your appraisal system work? Tell me about the most recent round?
- b) How does the bonus system work?
- c) Are there any non-financial rewards for top-performers?
- d) How does your reward system compare to your competitors?

Scoring grid:	Score 1 People within our firm are rewarded equally irrespective of performance level	Score 3 Our company has an evaluation system for the awarding of performance related rewards	Score 5 We strive to outperform the competitors by providing ambitious stretch targets with clear performance related accountability and rewards
Examples:	An East Germany firm pays its people equally and regardless of performance. The management said to us "there are no incentives to perform well in our company". Even the management is paid an hourly wage, with no bonus pay.	A German firm has an awards system based on three components: the individual's performance, shift performance, and overall company performance.	A US firm sets ambitious targets, rewarded through a combination of bonuses linked to performance, team lunches cooked by management, family picnics, movie passes and dinner vouchers at nice local restaurants. They also motivate staff to try by giving awards for perfect attendance, best suggestion etc.

(15) Removing poor performers

- a) If you had a worker who could not do his job what would you do? Could you give me a recent example?
- b) How long would underperformance be tolerated?
- c) Do you find any workers who lead a sort of charmed life? Do some individuals always just manage to avoid being fixed/fired?

Scoring grid:	Score 1 Poor performers are rarely removed from their positions	Score 3 Suspected poor performers stay in a position for a few years before action is taken	Score 5 We move poor performers out of the company or to less critical roles as soon as a weakness is identified
Examples:	A French firm had a supervisor who was regularly drinking alcohol at work but no action was taken to help him or move him. In fact no employee had ever been laid off in the factory. According to the plant manager HR “kicked up a real fuss” whenever management wanted to get rid of employees, and told managers their job was production not personnel.	For a German firm it is very hard to remove poor performers. The management has to prove at least three times that an individual underperformed before they can take serious action.	At a US firm, the manager fired four people during last couple of months due to underperformance. They continually investigate why and who are underperforming.

(16) Promoting high performers

- a) Can you rise up the company rapidly if you are really good? Are there any examples you can think of?
- b) What about poor performers – do they get promoted more slowly? Are there any example you can think of?
- c) How would you identify and develop (i.e. train) your star performers?
- d) If two people both joined the company 5 years ago and one was much better than the other would he/she be promoted faster?

Scoring grid:	Score 1 People are promoted primarily upon the basis of tenure	Score 3 People are promoted upon the basis of performance	Score 5 We actively identify, develop and promote our top performers
Examples:	A UK firm promotes based on an individual’s commitment to the company measured by experience. Hence, almost all employees move up the firm in lock step. Management was afraid to change this process because it would create bad feeling among the older employees who were resistant to change.	A US firm has no formal training program. People learn on the job and are promoted based on their performance on the job.	At a UK firm each employee is given a red light (not performing), amber light (doing well and meeting targets) a green light (consistently meeting targets very high performer) and a blue light (high performer capable of promotion of up to two levels). Each manager is assessed every quarter based on his succession plans and development plans for individuals.

(17) Attracting human capital

- a) What makes it distinctive to work at your company as opposed to your competitors?
- b) If you were trying to sell your firm to me how would you do this (get them to try to do this)?
- c) What don't people like about working in your firm?

Scoring grid:	Score 1 Our competitors offer stronger reasons for talented people to join their companies	Score 3 Our value proposition to those joining our company is comparable to those offered by others in the sector	Score 5 We provide a unique value proposition to encourage talented people join our company above our competitors
Examples:	A manager of a firm in Germany could not give an example of a distinctive employee proposition and (when pushed) thinks the offer is worse than most of its competitors. He thought that people working at the firm “have drawn the short straw”.	A US firm seeks to create a value proposition comparable to its competitors and other local companies by offering competitive pay, a family atmosphere, and a positive presence in the community.	A German firm offers a unique value proposition through development and training programs, family culture in the company and very flexible working hours. It also strives to reduce bureaucracy and seeks to push decision making down to the lowest levels possible to make workers feel empowered and valued.

(18) Retaining human capital

- a) If you had a star performer who wanted to leave what would the company do?
- b) Could you give me an example of a star performers being persuaded to stay after wanting to leave?
- c) Could you give me an example of a star performer who left the company without anyone trying to keep them?

Scoring grid:	Score 1 We do little to try and keep our top talent.	Score 3 We usually work hard to keep our top talent.	Score 5 We do whatever it takes to retain our top talent.
Examples:	A German firm lets people leave the company if they want. They do nothing to keep those people since they think that it would make no sense to try to keep them. Management does not think they can keep people if they want to work somewhere else. The company also will not start salary negotiations to retain top talent.	If management of a French firm feels that people want to leave the company, they talk to them about the reasons and what the company could change to keep them. This could be more responsibilities or a better outlook for the future. Managers are supposed to “take-the-pulse” of employees to check satisfaction levels.	A US firm knows who its top performers are and if any of them signal an interest to leave it pulls in senior managers and even corporate HQ to talk to them and try and persuade them to stay. Occasionally they will increase salary rates if necessary and if they feel the individual is being underpaid relative to the market. Managers have a responsibility to try to keep all desirable staff.

Appendix A.2: Work-life balance survey

Run in parallel as the management survey but targeted at the HR department

Workforce Characteristics

<u>Data Field</u>	<u>Breakdown</u>
Total number of employees (cross check again accounts)	(all employees)
% with university degree	(all employees)
% with MBA	(all employees)
Average age of employees	(all employees)
% of employees	(managerial/non-managerial)
Average training days per year	(managerial/non-managerial)
Average hours worked per week (including overtime, excluding breaks)	(managerial/non-managerial)
Average holidays per year	(all employees)
Average days sick-leave	(all employees)
% part-time	(managerial/non-managerial)
% female	(managerial/non-managerial)
% employees abroad	(all employees)
% union membership	(all employees)
Are unions recognized for wages bargaining [yes / no]	(all employees)

Work-life Balance Outcome Measure:

<u>Question</u>	<u>Response choice (all employees)</u>
Relative to other companies in your industry how much does your company emphasize work-life balance?	[much less / slightly less / the same / slightly more / much more]

Work-Life Balance Practices:

<u>Question</u>	<u>Response choice (managerial/non-managerial)</u>
If an employee needed to take a day off at short notice due child-care problems or their child was sick how do they generally do this?	[Not allowed / Never Been Asked / Take as leave without pay / Take time off but make it up later / Take as annual leave / Take as sick leave]
<u>What entitlements are there to the following</u>	<u>Breakdown</u>
Working at home in normal working hours?	(managerial/non-managerial)
Switching from full-time to part-time work?	(managerial/non-managerial)
Job sharing schemes?	(managerial/non-managerial)
Financial subsidy to help pay for childcare?	(managerial/non-managerial)

Organizational Characteristics

<u>Question</u>	<u>Response choice (all employees)</u>
Who decides the pace of work?	[exclusively workers / mostly workers / equally / mostly managers / exclusively managers]
Who decides how tasks should be allocated?	[exclusively workers / mostly workers/ equally / mostly managers / exclusively managers]
Do you use self-managing teams?	[v. heavily / heavily / moderately / slightly / none]

Market & firm questions:

<u>Response choice</u>
of competitors
hostile take-over bids in last three years
[none / less than 5 / 5 or more]
[none / one / more than one]

Interviewer's assessment of the scoring reliability

1 to 5 scoring system calibrated according to:
1 = Interviewee did not have enough expertise for interview to be valuable; I have significant doubts about most of the management dimensions probed
3 = Interviewee had reasonable expertise; on some dimensions I am unsure of scoring
5 = Interviewee had good expertise, I am confident that the score reflects management practices in this firm

Appendix B

Appendix B: Firm data

Sampling frame construction

Our sampling frame was based on the Amadeus dataset for Europe—the United Kingdom, France and Germany—and the Compustat dataset for the United States. These all have information on company accounting data. We chose firms whose principal industry was in manufacturing and who employed—on average between 2000 and 2003—no less than 50 employees and no more than 10,000 employees. We also removed any clients of the consultancy firm we worked with from the sampling frame (33 out of 1,353 firms).

Our sampling frame is reasonably representative of medium sized manufacturing firms. The European firms in Amadeus include both private and public firms, whereas Compustat only includes publicly listed firms. There is no U.S. database with privately listed firms with information on sales, labor, and capital. Fortunately, there are a much larger proportion of firms listed on the stock exchange in the United States than in Europe, so we were able to go substantially down the size distribution using Compustat. Nevertheless, the U.S. firms in our sample are slightly larger than those of the other countries, so we were always careful to control for size and public listing in the analyses. Furthermore, when estimating production functions, we could allow all coefficients to be different on labor, capital, materials, and consolidation status by country.

Another concern is that we conditioned on firms where we have information on sales, employment, and capital. These items are not compulsory for firms below certain size thresholds, so disclosure is voluntary to some extent for the smaller firms. Luckily, the firms in our sampling frame, over 50 workers, are past the threshold for voluntary disclosure—the only exception is for capital in Germany).

We achieved a response rate of 54 percent from the firms that we contacted: a very high success rate given the voluntary nature of participation. Respondents were not significantly more productive than nonresponders. French firms were slightly less likely to respond than firms in the other three countries, and all respondents were significantly larger than nonrespondents. Apart from these two factors, respondents seemed randomly spread around our sampling frame

Firm level data

Our firm accounting data on sales, employment, capital, profits, shareholder equity, long-term debt, market values (for quoted firms), and wages (where available) came from Amadeus (France, Germany and the United Kingdom) and Compustat (the United States). This is drawn from underlying databases such as Companies House in the United Kingdom, which is a mandatory register of all public and private firms, and Dun & Bradstreet in the United States, which is a private firm tracking the population of all public and private firm

Appendix C

Appendix C: Firm performance and work-life-balance regressions

Table 1: The links between firm management practices, firm sales, and work-life-balance practices

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable	Sales (in logs)	Sales (in logs)	Sales (in logs)	Sales (in logs)	Management practices	Management practices	Management practices	Management practices
WLB practices z-score	0.416*** (0.114)	0.420*** (0.112)	0.360** (0.106)	0.371*** (0.107)	0.089*** (0.026)	0.080** (0.029)	0.074** (0.029)	0.063** (0.031)
Industry Controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Noise Controls	No	No	Yes	Yes	No	No	Yes	Yes
Size weighted	No	No	No	Yes	No	No	No	Yes
Firms	536	536	536	536	536	536	536	536

NOTES: In all columns, standard errors are in parentheses under coefficient estimates and cluster standard errors at the firm level. ***=significant at the 1% level, **=significant at the 5% level, *=significant at the 10% level. “Sales (in logs)” is the log of the dollar values of sales in 2004 or the closest year. “Management practices” is the average z-score for the 18 individual management practice scores, normalized so this measure has a mean of 0 and standard deviation of 1. “WLB practices z-score” is the average z-score for the five practice “working from home allowed”, “full-time/part-time job switching allowed”, “job sharing allowed”, “childcare flexibility” and “childcare subsidy”, normalized so this measure has a mean of 0 and standard deviation of 1. All columns include a country control. “Industry Controls” include a full set of SIC 3-digit controls. “Noise Controls” includes controls for interviewer, day of the week and time, interview reliability, interviewee tenure and seniority and interview duration.

Endnotes

- 1 Council of Economic Advisers, *Work-life balance and the economics of workplace flexibility* (Executive Office of the President, 2010), available at <http://www.whitehouse.gov/files/documents/100331-cea-economics-workplace-flexibility.pdf>.
- 2 See, for example, Derek Thompson, "Marissa Mayer is Wrong: Working From Home Can Make You More Productive," *The Atlantic*, February 25, 2013, available at <http://www.theatlantic.com/business/archive/2013/02/marissa-mayer-is-wrong-working-from-home-can-make-you-more-productive/273482/>.
- 3 The suggestion that better work-life-balance policies, such as the ones from JetBlue, allow companies to attract higher quality employees who are also able to provide better customer service is often present in the academic literature on human resource management. See, for example, the literature survey in Nicholas Bloom, Tobias Kretschmer, and John Van Reenen, "Are Family Friendly Workplace Practices a valuable firm resource?," *Strategic Management Journal* 32 (4) (2011): 343–367.
- 4 Stephen Dorgan, John Dowdy, and Thomas Rippin, "The link between management and productivity," *McKinsey Quarterly* (2006), available at http://www.forac.ulaval.ca/fileadmin/docs/Manchettes/The_link_between_management_and_productivity.pdf; Nicholas Bloom and John Van Reenen, "Measuring and explaining management practices across firms and countries," *Quarterly Journal of Economics* 122 (4) (2007): 1351–1408.
- 5 Nicholas Bloom and others, "Does working from home work? Evidence from a Chinese experiment," *Quarterly Journal of Economics* (2015): 165–218.
- 6 Chad Syverson, "What Determines Productivity?," *Journal of Economic Literature* 49 (2) (2011): 326–365.
- 7 Michael Lewis, *Moneyball: The Art of Winning an Unfair Game* (New York: W. W. Norton & Company, 2004).
- 8 James P. Womack, Daniel T. Jones, and Daniel Roos, *The Machine That Changed the World: The Story of Lean Production—Toyota's Secret Weapon in the Global Car Wars That Is Revolutionizing World Industry* (New York: Scribner, 1990).
- 9 Nick Bloom, Tobias Kretschmer, and John Van Reenen, "Work-life Balance, Management Practices and Productivity." In Richard Freeman and Kathryn Shaw, eds., *International Differences in the Business Practice and Productivity of Firms* (Chicago, IL: University of Chicago Press, 2009); Nicholas Bloom and others, "The new empirical economics of management," *Journal of the European Economic Association* 12 (4) (2014): 835–876.
- 10 Nicholas Bloom, Tobias Kretschmer, and John Van Reenen, "Are Family Friendly Workplace Practices a valuable firm resource?," *Strategic Management Journal* 32 (4) (2011): 343–367.
- 11 See, for example, the literature surveyed in Nicholas Bloom and John Van Reenen, "Human resource management and productivity," *Handbook of Labor Economics* (2011).
- 12 For a survey, see Nicholas Bloom and others, "The new empirical economics of management," *Journal of the European Economic Association* 12 (4) (2014).
- 13 The z-score normalizes all the questions to have a mean of zero and a standard-deviation of one.
- 14 Stephen Dorgan, John Dowdy, and Thomas Rippin, "The link between management and productivity," *McKinsey Quarterly* (2006), available at http://www.forac.ulaval.ca/fileadmin/docs/Manchettes/The_link_between_management_and_productivity.pdf; Bloom and Van Reenen, "Measuring and explaining management practices across firms and countries"; Nicholas Bloom and others, "The new empirical economics of management." Working Paper 20102 (National Bureau of Economic Research, 2014).
- 15 Casey Ichniowski, Kathryn Shaw, and Giovanna Prennushi, "The Effects of Human Resource Management: A Study of Steel Finishing Lines," *American Economic Review* 87 (3) (1997): 291–313; Sandra Black and Lisa Lynch, "How to Compete: The Impact of Workplace Practices and Information Technology on Productivity," *Review of Economics and Statistics* 83 (3) (2001): 434–445; Ann Bartel, Casey Ichniowski, and Kathryn Shaw, "Using 'Insider Econometrics' to Study Productivity," *American Economic Review* 94 (2) (2004): 217–223.
- 16 This management z-score was then renormalized to zero mean and standard deviation one.
- 17 Marianne Bertrand and Sendhil Mullainathan, "Do People Mean What they Say? Implications for Subjective Survey Data," *American Economic Review: Papers and Proceedings* 91 (2) (2001): 67–72.
- 18 This survey tool has been passed by Stanford University's Human Subjects Committee. The deception involved was deemed acceptable because it is necessary to get unbiased responses; minimized to the management practice questions and is temporary as managers are sent debriefing packs afterwards; and presents no risk as the data is confidential.
- 19 If an interviewer could not score a question, it was left blank, with the firm average taken over the remaining questions. The average number of unscored questions per firm was 1.3 percent, with no firm included in the sample if more than three questions were unscored.
- 20 See, for example, Bloom and Van Reenen, "Measuring and explaining management practices across firms and countries."
- 21 Words like "survey" or "research" should be avoided as these are used by switchboards to block market research calls.
- 22 The authors found no significant correlation between the number, type, and timespan of contacts before an interview is conducted and the management score. This suggests that, while different managers may respond differently to the interview proposition, their differences do not appear to be directly correlated with their responses or the average management practices of the firm.

- 23 This removed 33 firms out of our sampling frame of 1,353 firms.
- 24 Bloom, and others, "Does working from home work? Evidence from a Chinese experiment."
- 25 Ibid.
- 26 Ibid.
- 27 However, we should note home workers experienced one downside of working from home: Conditional on performance, working from home reduced promotion rates by about 50 percent. Bloom and others, "Does working from home work? Evidence from a Chinese experiment."
- 28 Ibid.
- 29 Ibid.; Robert W. Van Giezen, "Paid leave in private industry over the past 20 years," *Beyond the Numbers: Pay & Benefits* 2 (18) (2013), available at <http://www.bls.gov/opub/btn/volume-2/paid-leave-in-private-industry-over-the-past-20-years.htm>. For census working-from-home data, see the analysis in Bloom and others, "Does working from home work? Evidence from a Chinese experiment." On leave, Van Giezen, "Paid leave in private industry over the past 20 years" notes that while most common leave benefits, such as paid holidays, have remained unchanged over the last 20 years, evidence from the U.S. Bureau of Labor Statistics suggests that sick leave and personal leave has shown some growth.
- 30 Note the European data is also from 2004. The authors have resurveyed these European firms and are cleaning the data. The authors anticipate these European firms are likely to have also improved their overall work-life-balance index, so the United States-Europe gap may actually be larger than shown in Figure 8.

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