

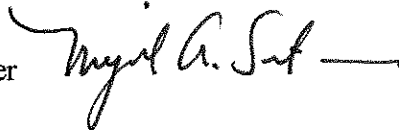
CITY OF LOS ANGELES
INTER-DEPARTMENTAL CORRESPONDENCE

DATE: April 30, 2015

TO: Honorable Members of the City Council

FROM: Sharon M. Tso 
Chief Legislative Analyst

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City Administrative Officer



**PEER REVIEW OF
CITYWIDE MINIMUM WAGE STUDIES**

SUMMARY

At its meeting of October 28, 2014, the Economic Development Committee instructed the CAO and CLA to commission a study of the policy issues associated with the minimum wage proposals included in two Motions, as well as other issues identified by the Committee and included on the public record. The Chairman of the Economic Development Committee also requested that other parties submit studies concerning the proposed minimum wage policy.

The City received three studies:

- a report commissioned by the City prepared by the Institute for Research on Labor and Employment at the University of California Berkeley;
- a report commissioned by the Los Angeles Chamber of Commerce prepared by Beacon Economics; and
- a report commissioned by the County Federation of Labor prepared by Economic Roundtable.

Authors of the three reports presented their findings to the Economic Development Committee on March 24, 2015.

Peer Review

In addition to a request that other studies be prepared on this subject, the Chairman of the Economic Development Committee directed the CLA and CAO to commission a peer review of all studies submitted for Council consideration. The intent of the peer review was to provide the following:

1. Evaluate the data sources used in the studies submitted for reliability and applicability to the question of impacts of minimum wage as well as applicability to the City of Los Angeles.

2. Evaluate the methodologies used in studies and the applicability to the questions and to the City of Los Angeles. This evaluation should include a review of research and literature regarding these methodologies, separate from the studies under review.
3. Identify the theoretical underpinnings used in the studies and how they drive the final conclusions and recommendations.
4. Review issues raised by Motions, public record comments, and similar data requests submitted to the public record prior to December 11, 2014 and determine whether they were addressed by the submitted studies.
5. Follow up with authors of studies for clarification of issues not well explained in study.
6. Evaluate the relative strength of competing claims among the various studies under review.
7. Provide Council with questions, issues, methodologies, or data sources not dealt with adequately in studies; provide suggestions for additional analysis that may assist elected officials with minimum wage-related policy decisions.

An RFP was released to select a consultant to prepare the peer review. The City received two submissions in response to the RFP and the team of Drs. Till von Wachter and Jeffrey Wenger, economists with UCLA and the University of Georgia, was selected to provide this study.

Peer Review Findings

Attached is a report titled “Technical Review of Studies Related to the Citywide Minimum Wage Proposal in the City of Los Angeles.” The report provides the following:

- Executive summary;
- Theoretical background used in the three studies;
- Main Findings of the three reports, including methods employed, policy and earnings impacts, employment effects, prices and border effects;
- Discussion of critical aspects such as long-term considerations; and
- Practical considerations raised by the reports, such as options for monitoring economic and social impacts, exceptions for small business and specific sectors and how compliance with a new Citywide minimum wage could be monitored.

Attachment A “Technical Review of Studies Related to the Citywide Minimum Wage Proposal in the City of Los Angeles”

Attachment A

“Technical Review of Studies Related to the Citywide Minimum Wage Proposal in the City of Los Angeles”

Technical Review of Studies Related to the Citywide Minimum Wage Proposal in the City of Los Angeles

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April 29, 2015

Executive Summary

We have reviewed three studies on the potential impact of the proposed increases in the minimum wage in the City of Los Angeles: 1) by Berkeley-IRLE, 2) by Beacon Economics, and 3) by the Economic Roundtable. All three studies provide estimates of the number of workers likely to be affected by increases in the minimum wage, of the projected total increase in earnings, of who may be most affected, and of potential impacts on the economy in the City and County. Overall, we find Berkeley-IRLE's assessment of the potential impacts of the minimum wage in the City of LA the most thorough and carefully implemented of the three studies. However, given that there remains some uncertainty over employment and earnings effects associated with the increasing the minimum wage, all three studies make useful contributions to the debate of the potential impacts in the City of Los Angeles.

One common finding across all three studies is that a large fraction of individuals working in the City of Los Angeles are likely to experience a substantial increase in earnings resulting from the proposed change in minimum wages. We discuss sources of numerical differences in the estimates in Section II of our review. These findings corroborate existing research findings that minimum wages are an effective instrument for increasing earnings and reducing income inequality. The three studies are cognizant that not all of the affected workers live in the City of Los Angeles, and take that into account when quantifying the effect of the minimum wage increase on the economy of the City. Only one report, Berkeley-IRLE, accounts for the fact that a statewide increase in the minimum wage is scheduled and reduces its estimates accordingly.

The three studies differ substantially in their estimates of the potential effects of the minimum wage increases on aggregate employment in the City of Los Angeles. Using a standard model for assessing regional policy impacts and a range of modeling choices consistent with the most recent literature, the Berkeley-IRLE report finds relatively small employment impacts. These findings are compatible with a substantial body of empirical evidence on the direct, shorter-run impact of increases in local minimum wages. The Beacon reports projects negative employment increases. Albeit the projections in the Beacon report are likely too large in magnitude for reasons we discuss in our review, they help to highlight that the existing academic literature does not exclude potential downside risks, particularly given the size of the increases proposed. The report by the Economic Roundtable also models the effects of minimum wage increases and finds net increases in employment. Again, we find the reported magnitudes too large, but these too cannot be excluded based on a best-case reading of the existing research literature.

All three reports provide information on which workers and industries might be most affected by the

changes in minimum wages. In addition, the Economic Roundtable report presents a careful spatial analysis of the potential impacts of the policy on workers and businesses.

Despite the high quality of the Berkeley-IRLE analysis, due to the inherently complex nature of the policy and difficulties in making economic forecasts, their analysis cannot fully dispel a range of uncertainties associated with increasing the minimum wage. Among others, these uncertainties stem from three important factors:

- 1) The proposed increase in the minimum wage is large both in terms of the proportion of the labor force impacted, and in terms of the size of the increase (as measured, for example, by the minimum-to-median wage ratio or the fraction of workers affected).
- 2) The City of Los Angeles is embedded in a complex geography of adjacent municipalities and counties.
- 3) The potential longer-run effects (when for example capital-labor and labor-labor substitution may have taken place) are difficult to estimate with precision.

The Berkeley-IRLE report deals with issues 1) and 2) head-on and finds that the effects are likely to be small – provided that turnover, pricing and employment effects are similar to estimates from the existing research literature and the assumptions built into their modeling framework are correct. While no forecast can eliminate all uncertainty, the Berkeley-IRLE report does the most thorough job of estimating these effects among the three studies we reviewed. In terms of issue 3), employment estimates in the Berkeley-IRLE can be viewed as short-run estimates of the effect of minimum wage. Limited guidance as to the longer-run effects of minimum wages is available in the existing literature. While the Beacon report aims at focusing on longer-run outcomes, the study of the long-run effects the authors use in modeling employment effects of the minimum wage is unpublished, has been challenged by other researchers, and provides estimates substantially larger than a substantial body of academic literature, as we discuss below.

If the debate were over raising the minimum wage to \$13.25 per hour by 2017 we would argue that the Berkeley-IRLE estimated impacts are the most likely scenario, partly because this size of increase is represented in previous estimates of the effect of minimum wages on employment. Confidence in predictions of the effect of the larger increase to \$15.25 per hour by 2019 is necessarily lower, given the longer time period and the larger increase in the minimum wage relative to most previous experience.

Whatever avenue is chosen, we highly encourage the City Council to follow the example of other city minimum wage ordinances and monitor the economic situation in the city. An effective system of monitoring requires timely data collection of firms and workers who are most affected by the law, and measures of the effects on worker income and firm profits. Moreover, we highly recommend developing complementary programs to aid both workers and firms that are most affected - should the benefits of the proposed increase in the minimum wage be lower or the adverse effects larger than anticipated.

The remainder of the report briefly reviews the theoretical background of the three reports (Section I), discusses the main methods and results of the three reports (Section II), presents further discussion of critical aspects (Section III), and gives an overview of practical considerations regarding practical implementation of the minimum wage ordinance contained in the three reports (Section IV).

I. Theoretical Background Used in the Three Studies

Traditionally, empirical analyses of the minimum wage have been motivated by what is called the neo-classical model of the labor market. In this model, an hour of labor is treated like a service that workers offer and employers buy in a fully competitive market. In the context of this model a higher minimum wage may reduce employment for two main reasons. Firms may choose other, now comparatively cheaper inputs. They may also choose to pass on some of the higher wage costs to prices, leading to a reduction of demand, and hence a decline in production and lower demand for employment. Partly because the neo-classical model has fared poorly in explaining many facts of the labor market, economists have developed a range of models that recognize that employment relationships in the labor market are more complex.

While there is no single comprehensive competing model, several of the modern models of the labor market have more nuanced or even opposite predictions from the neo-classical model. For example, one approach, championed by Nobel-prize winner George Akerlof, contends that worker productivity is not given, but increases with the wage itself. Another approach that led to a separate Nobel Prize (for Peter Diamond, Dale Mortensen and Christopher Pissarides) incorporates the fact that workers and employers may have high costs of conducting a job search or other substantial employment frictions. Both approaches can lead to different predictions for the effects of minimum wages than the neoclassical model.¹ A related branch of the literature has examined the case in which firms have market power, and hence optimally set wages that are below those that would be set in a competitive market – a case relevant for example for large, lower wage retail chains. Yet another approach, proposed by field medalist Daron Acemoglu, suggests firms can create high or low wage jobs, and that external constraints such as unions or minimum wages can move the economy towards a state with more productive and better utilized labor.

An implication of these alternative approaches is that minimum wages do not necessarily need to reduce and may even increase employment. Moreover, some of these approaches suggest reasons why minimum wages may increase productivity at firms. This is relevant in the context of increasing findings in the academic literature that there are large differences in productivity, wages, and turnover rates, among others, even between firms within comparable industries and regions. These differences are partly driven by differences in management quality.²

In our review of the three studies we find that an informed and nuanced discussion of classic and modern approaches to modeling the effects of the minimum wage makes an important difference in how the effects of increasing the minimum wage are assessed. The Beacon analysis adopts a neo-classical analysis of the labor market, leading it to downplay potential beneficial effects of the minimum wage on businesses. The Berkeley-IRLE and the Economic Roundtable reports incorporate more recent strands of the empirical research literature that partly address broader theoretical predictions.

The breadth of open theoretical predictions partly reflects that the academic literature has not come to a final conclusion as to the effects of the minimum wage on employment. In contrast, the uniform finding is

¹ See, e.g., Christopher Flinn. 2011. "The Minimum Wage and Labor Market Outcomes." MIT University Press.

² See, e.g., Bloom, Nicholas, and John Van Reenen. 2010. "Why Do Management Practices Differ across Firms and Countries?" *Journal of Economic Perspectives*, 24(1): 203-24.

that earnings of affected workers increase in response to a rise in minimum wages. As a result, minimum wages have been shown to be an effective policy at reducing earnings inequality if a substantial number of workers is affected. Changes in the value of the minimum wage in the 1980s have contributed substantially to a widening in income inequality.³

II. Approaches and Findings of Three Studies

In the sections that follow, we briefly review the data, approach, and main findings of the three reports we reviewed.

II.1 Data and Sample

To predict the economic effects of increases in the minimum wage, researchers need to understand the distribution of hourly wages and who is potentially affected by the change in policy – i.e., one needs the number of workers employed receiving different levels of hourly wages. Using this data, researchers can directly estimate the number of workers potentially affected by the increase in the minimum wage, and the earnings increases associated with the increases in minimum wages (See Section II.2). Unfortunately, this information is not available for researchers investigating the minimum wage’s effect on workers living or working in the City of Los Angeles. Hence, all three reports must rely on a combination of different data sets to estimate the potential effects of the increase in minimum wages on workers working and living in the City of Los Angeles.

All three reports begin by using information from the American Community Survey (ACS). The ACS provides representative information on earnings and hours worked for individuals *working* in Los Angeles *County*. As a result, the reports need to make adjustments to infer about the number of individuals working *and* living in the *City* of Los Angeles that are affected by the change in minimum wages.⁴ The Berkeley-IRLE report uses information from the Quarterly Census of Employment and Wages (QCEW) to impute information on the number of individuals working in the City of Los Angeles that are affected, adjusting for differences in industry between city and county. The Economic Roundtable report uses a combination of data derived from the QCEW, the unemployment insurance system, and the Decennial Census of Population to infer about the number of people affected that work and live in the city. The Beacon report uses wage distribution data from the Occupational Employment Statistics (OES) division at the industry level. In addition, each study adjusts the data for potential outliers and measurement error in hourly wages,

³ David Lee find that the minimum wage can accounts for an important fraction of changes in inequality in the early 1980s in the United States (“Wage Inequality in the United States During the 1980s: Rising Dispersion or Falling Minimum Wage?” *Quarterly Journal of Economics*, 114(3), 977-1023.).

⁴ The ACS does provide information at a finer geographical level than a county, but only for place of work and every five years. Another potential shortcoming of the ACS does not have hourly wage information; instead researchers must calculate hourly rates by dividing total earnings by weeks worked per year and hours per week. This is standard for salaried workers, but other data sets, such as the Current Population Survey (CPS), elicit directly hourly pay for workers paid by the hour. The CPS is not representative at this fine level of geography, and provides information by workers’ place of residence, not place of work.

and aims to exclude workers not covered by the minimum wage, such as state and federal employees, and the self-employed. Because each analysis conducts these adjustments in a different way, the results of the impact of the policy differ, although there are other methodological reasons for the differences further discussed below.

How researchers prepare the data consists of a number of “judgment calls” and the economics discipline does not provide a uniform standard by which to evaluate these decisions. From what we can tell from necessarily terse Appendices, Berkeley-IRLE, Economic Roundtable and Beacon economics adjust the data in reasonable ways, benchmarking the data to known distributions or other published data sources. For example, Beacon re-weights the ACS data to match wage distribution data from the Occupational Employment Statistics (OES) at the industry level.⁵ The Beacon report also appears to apply the minimum wage increase to the entire Los Angeles County rather than the City, something we further discuss below.

II.2 Methods Employed

All of the three studies provide estimates of the potential effect of the minimum wage on four main areas: the number of workers potentially receiving pay increases, the total dollar increase in earnings for these affected workers, the incidence of the effects among workers and firms, and the potential change in aggregate economic conditions, chiefly employment. In addition, Berkeley-IRLE and Roundtable provide estimates on the effect of the City’s budget and expenditures on other social programs. To varying degrees, studies differentiate between workers living and working in the City of Los Angeles, as further discussed below.

The three reports follow a common approach to estimate the effects of the proposed minimum wage increase on the potential number of workers receiving pay increases, the total increase in earnings, and the type of individuals affected. In particular, each report uses their estimate of the distribution in hourly wage for individuals working in the City of Los Angeles to infer the effect of the scheduled increase in minimum wages. However, each study implements this approach in somewhat different ways. The Berkeley-IRLE report accounts for potential growth in real wages, potential growth in employment, and the scheduled increase in the statewide minimum wage occurring in 2016. Moreover, the Berkeley-IRLE report accounts for the fact that some workers earning *above* the minimum wage are typically found to have increases in earnings (the so-called ripple effect). The Roundtable report only accounts for potential employment growth. Hence, it may overstate the numbers affected solely by the city-wide minimum wage because it also attributes the increase in wages to the statewide minimum wage, a point to which we return below. The Beacon report also only considers direct effects of the minimum wage, but does not differentiate between City and County, effectively applying a minimum wage increase to the entire Los Angeles County. As discussed in Section II.3 and II.4 below, despite these differences the findings are in broad agreement.

⁵ In personal correspondence with the authors of the Beacon study they report that if they did not re-weight the ACS by the distribution in the Occupational Employment Statistics it would “reduce the wage share going to low wage workers and make the impact of a higher minimum wage look smaller.”

Estimating the potential effects on employment and broader economic activity is more difficult and has been more controversial in the literature. There are broadly two approaches to predict the effect of future minimum wage on employment.

One approach is to model the different effects of the minimum wage using a comprehensive economic model of the regional economy. The advantage of this approach is that it explicitly takes into account the integrated nature of local economies, allowing researchers to directly assess the multiplier effects from changes in spending or the amount of spillover effects between localities, among others. The approach also allows researchers to specify a range of parameters estimated in the literature to customize the model, and hence may enable tailoring the estimates to a particular circumstance/region. A potential disadvantage of this approach is that it relies on the ability of the model and the assumptions made to correctly capture economic relationships.

The Berkeley-IRLE and Economic Roundtable reports choose this approach. The Berkeley-IRLE report argues that this method allows them to better address the fact that previous estimates are partly based on smaller changes in minimum wages and may not reflect the situation of the City of Los Angeles. The Roundtable report also provides findings from similar simulations, but with substantially less detail. The model chosen by the Berkeley-IRLE and Roundtable reports to study the effects of the proposed minimum wage increases in the City of Los Angeles is the IMPLAN model, a standard model of the regional economy.⁶

Implementing such a model necessarily involves a range of choices. These choices are thoroughly discussed in the Berkeley-IRLE study, and we find most of them well grounded in existing empirical research. Berkeley also reports a range of sensitivity analyses to their approach. However, as is common when using complex economic models to make predictions, it is difficult, without an intimate knowledge of the model, to fully evaluate how various factors built into the model and assumptions made interact to produce the reported outcomes.

For example, it is our understanding that the Berkeley-IRLE study assumes that firms do not reduce low-wage labor because of higher wages; instead, all employment declines stem from a reduction in sales resulting from price increases. While this choice is motivated by empirical work, this is likely to lead the results to be more reflective of shorter-run effects, as we discuss in Section II.5. Another aspect is that the particular model chosen has an embedded multiplier effect in response to changes in spending resulting from higher wages and higher prices. The implementation of the Economic Roundtable of this model suggests the embedded multiplier effects appear to be quite substantial. It may be helpful to know how the multipliers compare, say, to other estimates used in the literature for these purposes.

As second standard approach uses existing estimates of the effects of minimum wages on employment to predict future minimum wage effects. This is the approach chosen by the Beacon report.⁷ The advantage of

⁶ The IMPLAN model for the City of Los Angeles is a regional input-output model that can be accessed and customized online, and has been used in prior analyses of the minimum wage and analyses of other local policy changes.

⁷ This approach is also chosen by a recent evaluation of the effect of proposed increases in the federal minimum wage by the Congressional Budget Office in 2014 ("The Effects of a Minimum-Wage Increase on Employment and Family

this approach is that, in principle, the existing empirical estimates of the effect of minimum wage increases on employment already take into account changes in employment in response to changes in local spending. This alleviates the need to use an economic model to simulate multiplier or spillover effects. A potential drawback is that existing estimates may not fully capture the economic situation in the City of Los Angeles. This approach also requires choosing which previous estimates to consider.⁸ Given the breadth of prior estimates, this is not an easy task. Yet, the literature has provided some guidance in the form of extensive literature reviews and meta-analyses.

Overall, differences in estimates of the effect of the proposed increase in the minimum wage on employment will thus arise from different choice of the main approach, as well as from the particular parameters chosen for implementation. We will discuss this further when summarizing estimates in Section II.5 below.

Finally, when implementing estimates of the effect of the proposed rise in minimum wages on the number of workers affected, earnings, and employment, each report must make assumptions on economic conditions that would arise were the City not to raise its minimum wage. Any assessment of the policy's impact will be based on comparisons to this "counterfactual." All three of the reports estimate reasonable counterfactuals based on standard forecasts of local economic development in the City of Los Angeles.

An important difference between the reports is that the counterfactual in the Berkeley-IRLE allows for a scheduled increase in the statewide minimum wage in 2016. In other words, the impact of the scheduled increase in the statewide minimum wages from \$9 per hour to \$10 per hour is *not* part of the assessed impacts in the Berkeley-IRLE study. Since this minimum wage increase would occur even in the absence of an increase of city minimum wages, this reduces the effective total increase in the *City* minimum wage. In fact, any future increase in minimum wages at the state or federal level would reduce the *incremental* impact of the City minimum wage law. (It is worth pointing out that the effect of the *total* increase in minimum wages is the increase relevant for the economic development of the city. However, that total increase will effectively come from the state level, city level and possibly the federal level.)

Our reading of the Beacon and Economic Roundtable reports that they attribute the full increase of the minimum wage to the City. These studies hence tend to overstate the incremental impact of the considered citywide minimum wage.

On a practical note, while Berkeley-IRLE and Economic Roundtable reports evaluate both minimum wage proposals currently under consideration by the City Council, Beacon is evaluating only the prospects of raising the minimum wage to \$13.25 (see pages 1, 4, and 10) by 2017.

Income"). Beacon has used the same model as Berkeley-IRLE uses in their report to assess the potential impact of the minimum wage in San Jose in a separate report.

⁸ Another potential difficulty here is that not all estimates account for the spillover effects between integrated local economies in the same way. Yet, since estimates do not appear to differ strongly when a geographically close economic area is chosen as counterfactual, this may not be a primary source of concern.

II.3 Impacts on the Number of Workers Affected and Increases in Earnings

All three studies report the number of workers predicted to obtain pay increases and the total increase in earnings. Since the Beacon report does not provide estimates for the \$15.25 scenario, we begin by comparing the impacts for raising the minimum wage to \$13.25 by 2017 in the three reports.

Number of Workers Affected for \$13.25/2017 Scenario. Overall, all three studies agree that a substantial number of individuals working in the City of Los Angeles is likely to receive a large increase in take-home pay either in the \$13.25 scenario, amounting to a substantial rise in total earnings. A caveat to all of the estimates discussed is that they assume effective enforcement of the law, something that may vary in practice and to which we return in Section IV.

Based on their mid-range inflation and growth scenario Berkeley-IRLE estimates that 446,000 workers would be directly affected by raising the minimum wage to \$13.25 in 2017; the number increases to 542,000 if the ripple effect for workers with prior wages just above the minimum wage are included (Year 2017 in Table 3). Since the other two studies do not include this effect (see Section II.2), the former is the most comparable number to the other two reports. Berkeley-IRLE is the only study that also provides estimates for the number of workers affected for an optimistic and pessimistic scenario. The estimates vary by the order of 5-10% (Table 3).

In contrast, the Economic Roundtable estimates that there are 632,138 workers affected (Year 3 in Table 3.4). As discussed in Section II.2, part of the difference can be attributed that the Economic Roundtable incorporates the change in the statewide minimum wage. Part of the difference may be due to different sample selection criteria.

The Beacon report estimates that 1,039,000 workers presumed to be affected by the policy (sum of column labeled “Total Workers” from upper table on pg. 19). However, judging from the header on the top table of page 19, Beacon’s estimates are based on Los Angeles County as whole. Relative to the total covered employment that Beacon reports for Los Angeles County this leads to an implied fraction of workers affected in the workforce covered by the minimum wage of 35%.⁹ The corresponding percentages from Berkeley-IRLE and Economic Roundtable are 31.1% and 45%, respectively. Hence, we suspect that Beacon applied the minimum wage increase to the entire county to get their total number affected. If we scale the Beacon number by the fraction of jobs of the County that are in the City, we obtain a number directly affected of approximately 600,000.

To obtain an additional estimate, we used publicly available individual-level data from the Current Population Survey (CPS) to obtain another estimate of the current distribution of hourly wages. While our sample is not directly comparable for various reasons, there is no reason to expect that the differences are

⁹ Note that Beacon’s estimate of the total employment count in the County based on the ACS (sum of first column of top table of page 20), which is 3,567,000, differs from the official County employment count provided by the California Employment Development Department (EDD). Total employment for Los Angeles County reported by EDD is 4.4 Million. We use Beacon’s numbers to calculate the fraction affected among the covered workforce, assuming their undercounting of County employment affects the number of workers affected equally. To estimate the covered workforce, we impose the fraction covered by the minimum wage in the City of Los Angeles that is implied by numbers in the Berkeley-IRLE and Economic Roundtable reports, which is 82%.

substantial.¹⁰ We also neither take into account ripple effects and the statewide minimum wage increase (hence overstating the fraction of workers affected), nor potential growth in wages and the fact that wages in Orange County may be higher (hence potentially understating the fraction affected). Our findings confirm that the percentage of workers affected in the covered workforce is in the range projected by the three reports.

Earnings Increase for \$13.25/2017 Scenario. In terms of increases in earnings, Berkeley projects that under an increase of the minimum wage to \$13.25 in 2017 individuals working in the City of Los Angeles will experience a \$1.7 Billion increase in annual earnings in 2014 dollars (Table 4). This results in an average increase of \$3200 per affected worker, or about 20.4% of prior annual earnings.

The Economic Roundtable estimates an increase of approximately \$3.8 Billion in annual earnings in 2017 in 2014 prices. Since they estimate that each \$1 increase in the minimum wage appears to add \$1 Billion in earnings, this number can be used to approximately net out the statewide increase. This would result in an estimated impact of \$2.7, still substantially higher than the Berkeley-IRLE increase. The difference is partly driven by the estimated number of people affected, but also because the Economic Roundtable obtains a higher estimate of the average increase per person affected (Tables 3.6 and Table 3.6).

The Beacon report estimates that the increase in take-home pay is \$4.4 Billion, with a ‘worse case’ scenario of \$2.3 Billion (bottom page 21). The Beacon report does not state whether these numbers are in current or 2014 prices, nor where the ‘worse case’ scenario comes from. While the report states these estimates are for the City of Los Angeles, we believe they are based on the 1.04 Million number affected they estimate for Los Angeles County on page 20.”

To derive a number comparable to that of the other reports, we assume that Beacon’s estimates were derived from effectively applying the minimum wage increase to the entire Los Angeles County and that they are current prices. Converting the dollar numbers to 2014 prices using a 2% annual inflation rate, at Beacon’s estimate of the number affected, the implied estimate for the average increase in annual earnings per affected worker is \$4000. This is somewhat larger than Berkeley-IRLE’s estimate, but smaller than the Economic Roundtable estimates. If one makes the same ad-hoc adjustment to the Beacon estimates for the fact that the statewide minimum wage is counted, the increase in earnings for the average affected worker is similar to that reported in Berkeley-IRLE.

Estimates for \$15.25/2019 Scenario. In contrast to Beacon, the Berkeley-IRLE and the Economic Roundtable report predicted impacts for each year of the proposed phased-in increase in the minimum wage up to \$15.25 in 2019. In 2019, Berkeley-IRLE reports that 609,000 individuals working in the City of Los Angeles are receiving a rise in pay (511,000 without the ripple effect, Table 3). The total projected increase in take-home pay is approximately \$2.9 Billion in 2014 prices (an average rise of \$4800 or 30.2%

¹⁰ The Current Population Survey sample is not directly comparable since it is based on employed individuals living in the Los Angeles Metropolitan Statistical Area, comprising also Santa Ana and Long Beach. However, it is unlikely that the wage distribution differs dramatically in our sample. Moreover, because many of these individuals work in Los Angeles County and hence are part of the population counted in the ACS as used by the three reports.

¹¹ If these estimates were literally for the City, the average per person increase for workers in the City that are affected would be approximately \$10,000. At the extreme case where *all* workers affected earned only \$9 and then received a \$4.25 pay increase, this would imply workers had to work 2300 hours per year. Full time work is 2000 hours.

per worker, Table 4). The Economic Roundtable report estimates that in 2019 approximately 732,000 workers are directly affected (Table 3.4) and that total earnings rise by \$5.9 Billion in 2014 prices (Table 3.6).

It is worth noting that all of the reported earnings amounts are gross, and are reduced by the fact that some workers lose access to public services. Taking into account this factor and changes in economic conditions triggered by the minimum wage increase, Berkeley-IRLE reports that the earnings increase is reduced by about 25%, resulting in a 15% instead of a 20% rise in annual earnings (Table 11).

II.4 Who is Most Affected?

While the levels of impact are different across the three reports, the distribution of impacts among demographic groups such as age and education appear similar between the reports. Direct comparisons are somewhat difficult because each group of researchers define groups in slightly different ways. Generally, all three reports find that workers potentially affected by minimum wage increases are predominately prime-age (not teenagers), and that the effects are likely larger for non-white and Latino populations. While there are substantial effects on household heads, a non-negligible fraction of minimum wage earners live in families with higher incomes or in two-earner households. The studies provide a broad range of further detail beyond the scope of this review.

All three studies recognize and emphasize that a large fraction of individuals working in the City of Los Angeles do not live in the City. Only the Economic Roundtable report provides comprehensive information on the number of workers affected and the earnings received by *place of residence*. By the Economic Roundtable's calculations, the fraction of workers affected by the minimum wage increases living in the city is larger, because these workers are likely to take lower paid jobs than worker commuting in from neighboring municipalities (Tables 3.3, 3.5). As a result, an over-proportional share of the total increase in earnings is projected to affect the city (Table 3.7).

II.5 Employment Effects

The three studies come to different conclusions as to the potential effects of the proposed minimum wage increase on aggregate employment in the City of Los Angeles. The most comprehensive and well-explained of the three studies, the report by Berkeley-IRLE, finds that that approximately 1,552 fewer jobs would be created in the City of Los Angeles if the minimum wage were to be gradually raised to \$13.25 by 2017. This estimate factors in the potential effect from increased spending by workers and the reduction in employment by firms in response to the minimum wage. The projected net job loss for a gradual increase to \$15.25 by 2019 is 3,472 workers.

As explained in Section II.2, this estimate is based on a range of choices made by the authors and elements hard-wired into the economic model used. While as in any such case the authors have to choose from a range of estimates, we found the choices made were well-motivated and grounded in the previous literature. Moreover, the finding of small dis-employment effects is consistent with a large body of direct empirical

evidence from the academic literature on the employment effects of changes in minimum wages. We return to a brief discussion of the applicability of these estimates to the proposed minimum wage increase in the City of Los Angeles in Section III.

Overall, these estimated impacts might be best interpreted as short-run effects. We believe this interpretation partly mirrors the authors' own assessment (footnote 39). This is because first, the estimates do not incorporate spatial relocation of firms. The report discusses the issue of potential relocation extensively (Section 5.5), and finds that there is little empirical evidence to support that firms may move in response to changes in minimum wages.¹² Second, the report sets the degree of substitution of labor with capital to zero.¹³ While this choice is motivated by an empirical study, it is possible that the degree of substitutability may be higher over the longer term and for larger increases in the minimum wage.

The employment effects estimated by the Beacon study are considerably larger than those estimated by the Berkeley-IRLE study. Beacon's estimates suggest that instead of experiencing a job growth of 150,000 the minimum wage would "at best" reduce job growth to 77,000, thus implying that job losses due to the increase in the minimum wage would be 73,000. The large estimates stem from the fact that the Beacon report relies on a specific set of estimates to assess employment impacts, those of an as of yet unpublished study by Jonathan Meer and Jeremy West (2013). Meer and West's estimates are considerably larger than recent estimates derived from a meta-analysis of the literature.¹⁴ The study's findings have also been challenged in the literature.¹⁵ In addition, it appears Beacon multiplied these already substantial estimates by two to obtain their "worst case" results. Hence, while as discussed in Section II.2, we find the general methodology chosen by Beacon plausible, we do not find their employment estimates realistic.

To assess to what extent the differences in methodologies of the two studies may have contributed to different findings, we replicated the basic analysis in the Beacon report. Since Beacon's industry-level analysis is beyond the scope of our report, we followed the implementation of a similar approach set forth in a recent report by the Congressional Budget Office (CBO). We implemented this approach using CBO's preferred estimates, as well as with a somewhat lower estimate based on a recent meta-analysis of 1,424 estimates of the effect of the minimum wage on employment by Doucouliagos and Stanley (2009).¹⁶ We also considered the lower bound of the statistical confidence interval as worse case scenario. In all cases, the estimated employment losses are substantially smaller than Beacon's employment estimates. Yet, for our worst-case scenario, employment losses are larger than what is found in the Berkeley-IRLE study. Berkeley-IRLE does not provide estimates for a worst-case scenario.

¹² This is partly because in practice few firms relocate; partly it is because of substantial evidence of price variation among similar firms in narrow geographic areas, suggesting that firms have some ability to set prices locally; partly it is because they report that only 6.4% of jobs paying less than \$13.25 are situated very close to the border in the City of Los Angeles (page 40 of the Berkeley-IRLE report).

¹³ Another important question is to what extent lower skilled workers may be substituted with higher skilled workers. We are not aware that the economic model used allows for this possibility.

¹⁴ Meer, Jonathan and Jeremy West 2013. "Effects of the Minimum Wage on Employment Dynamics." NBER Working Paper 19262. For all demographic groups, Meer and West (2013) estimate a short-run elasticity of -0.12, by comparison Doucouliagos and Stanley's largest estimated short-run elasticity from their meta-analysis is -0.024.

¹⁵ E.g., Dube, Arindrajit. 2013. "Minimum Wages and Aggregate Job Growth: Causal Effect or Statistical Artifact?" unpublished working paper, University of Massachusetts Amherst.

¹⁶ Doucouliagos, Hristos, and Tom D. Stanley. "Publication Selection Bias in Minimum-Wage Research? A Meta-Regression Analysis." *British Journal of Industrial Relations* 47.2 (2009): 406-428.

The Economic Roundtable reports substantial net increases in employment from the increase in minimum wages using a different implementation of the same model that is used in the Berkeley-IRLE study. In light of the Berkeley-IRLE findings and our reading of the existing literature this is an unlikely scenario. Yet, given many estimates of employment effects in the literature are close to zero, it cannot be excluded that a best-case scenario could involve net increases in employment increases from increases in the minimum wage.

Overall, given the bulk of the existing evidence, it is not unreasonable to presume the cost in terms of employment losses may be quite low. However, the existing evidence does not fully exclude negative effects that are larger than what the Berkeley-IRLE report estimates. Hence, as we mention in our Executive Summary and in Section IV below, it would be worth considering complementary programs to aid potentially particularly affected sectors. As mentioned in Section II.4, both the Berkeley-IRLE and Economic Roundtable reports provide in depth discussions of which sectors might be most strongly affected by the proposed changes in minimum wages.

II.6 Changes in Operating Costs and Prices

Turnover and productivity

One of the most misunderstood aspects of raising the minimum wage is the impact that it will have on worker behavior. Models that do not take into consideration how workers will change their behavior when paid more are likely to over-estimate the dis-employment effects of increases in the minimum wage. This is because increasing wages has an impact on worker turnover and productivity. The methodology employed by the Berkeley-IRLE report allows them to explicitly take into consideration the reduction in firms' costs due to turnover. They also acknowledge that turnover effects are largest at the lowest wages and phase out turnover savings by 2019. The two other reports discuss but do not explicitly quantify the benefits from reduced turnover.

Prices

The Berkeley-IRLE model assumes that all wage increases that are not offset by savings due to turnover are passed through to output prices of the firm (pg. 33). For example, if minimum wages increase by \$1 and 20 percent of the wage increase is offset by reductions in turnover costs then the other 80 cents is reflected in prices. Note that this does not mean that prices will increase dramatically since labor's share of total costs is often quite small for workers impacted by the minimum wage (see Table 7). The assumption of complete pass through is perhaps too strong, since it means that there are no direct effects in profitability due to input costs, and profits fall only by the reduction in demand triggered by the price increase. Since many workers will be wealthier as a result of the minimum wage increase these demand reductions are somewhat offset by higher spending. The reported estimates are a net effect. While some sensitivity analysis is provided, we find it worth further exploring the effect of assuming different rates of pass-through of minimum wages to prices, different product demand elasticities, and different capital-labor substitution elasticities on

employment to obtain a fuller understanding of the potential impacts of the minimum wage.¹⁷ The other two reports do not explicitly model specific channels of the effect of minimum wages.

Other Channels

The Berkeley-IRLE and Economic Roundtable reports provide in-depth discussions of potential other beneficial effects of minimum wages to firms, such as additional cost savings resulting from improved worker performance, job experience, improvements in morale, reductions in absenteeism, or work effort. The two reports also detail what options firms have to adjust to minimum wage increases. The reports also discuss a range of additional benefits of higher minimum wages, such as the benefits of increased income on family stability and child wellbeing. None of the reports quantify these potential effects.

II.7 Border Effects

Berkeley-IRLE reports that firm relocation effects are not likely to be important – many cater to local markets, competition for sales and services is competitive in markets where the firm would move, and marginal labor cost increases due to the minimum wage are typically small relative to the portion of total costs. The research literature, especially that of Kolko and Neumark (2007), finds firm relocation is very infrequent and when it does occur wage differential play only a small role.

Customer mobility is more difficult to measure. Depending on how large the area is drawn determines the proportion of people living “close” to a border. Most people are 10 miles from a border, few are a quarter mile. What matters is how costly it is to travel from LA City to LA County and how much the potential price savings are likely to be. The Berkeley-IRLE report argues that since LA City represents relatively expensive travel and minimum wages are thought to have modest effects on prices this may likely be a secondary effect. There is some empirical support for these claims even within a metro area (see Colbion 2015).

¹⁷ It is worth noting that while the use of IMPLAN for modeling the minimum wage and other local policies is standard, a previous analysis of the minimum wage using IMPLAN found that employment effects are sensitive to the level of presumed capital-labor substitution. See Holland, DW; Bhattacharjee, S and Stodick, L. Assessing the Economic Impact of the Minimum Wage Increases on the Washington Economy: A General Equilibrium Approach. Washington State University Working Paper 2006-12. September 2006.

III. Further Discussion of Critical Aspects

III.1 Size of Minimum Wage Changes

In Section 6 of their report, Berkeley-IRLE compares the size of the proposed minimum wage increase in the City of Los Angeles with minimum wage increases in other cities using two common measures, the minimum-to-median ratio and estimates of the percentage of the workers affected by the minimum wage increase. Under Berkeley-IRLE's mid-range scenario, the minimum-to-median ratio is 60.6 (66.5) in the \$13.25/2017 (\$15.25/2019) scenario (Table 13). The estimated fraction of workers covered that is affected is 37.8% and 41.3% in the two scenarios, respectively. In comparison, the increases in the minimum wages to \$15 in San Francisco and Seattle have minimum-to-median ratios of 47.7 and 53.3, respectively, at full implementation. The percent affected at \$15 in San Francisco is 23%, and at a proposed \$13 in Chicago the fraction covered is estimated to be 31%. Overall, at \$13.25, the minimum wage in the City of Los Angeles would cover more workers than higher increases in other cities, and that at \$15.25, the metrics used to assess minimum wage impacts are above historical standards.

As Berkeley-IRLE's review of the relevant literature in their Appendix B summarizes, there are empirical studies of cases in which cities have experienced substantial increases in the minimum wage.¹⁸ However, the majority of minimum wage increases have been smaller both in terms of percent increase and in terms of the minimum-to-median ratio. This implies that the majority of the available evidence is based on smaller increases in minimum wages. As a result, to some degree, using previous estimates to assess the effect of LA's proposed minimum wage increase is thus "out of sample." This is only a problem insofar as the effect of minimum wages is not linear. This may, for example, be the case if firms react differently to larger changes in operating costs. For example it could be the case that reorganization of production processes is costly, and that higher minimum wages lead more firms to be willing to pay the fixed cost to shift to production methods that are less intensive in low-wage labor.

The Berkeley-IRLE study addresses this issue in various ways, which we find helpful.

- They point to the fact that studies of larger minimum wage increases that are comparable to the increase proposed in the city of LA obtain similar results as the bulk of evidence based on smaller changes. This is a useful point, but only useful insofar as the areas affected by these large minimum wage increases are comparable to the economy of the city of Los Angeles.
- They also quote work that has directly tried to estimate the effect, and did not find precisely

¹⁸ The Berkeley-IRLE team has reiterated this point in their reply to an inquiry, providing additional discussion, part of which we reproduce here. (Minimum wage increases from 1982 to 2008 are listed in Appendix Table 2 of Aaronson, Daniel, Sumit Agarwal, and Eric French. 2012. "The Spending and Debt Response to Minimum Wage Hikes." *American Economic Review*, 102(7): 3111-39.)

"The proposed percentage increases are similar to those in previous policies or studies. As we show in Table 1 of our report the Los Angeles increase to \$13.25 in 2017 equals \$12.45 in 2014 dollars, and the increase to \$15.25 in 2019 equals \$13.66. Taking into account the \$10 state minimum wage, which will take effect on January 1, 2016), the LA increase is thus less than 25 percent in 2017 and about 37 percent in 2019.

There have been many minimum wage increases of comparable percentages. Examples include San Francisco's 28 percent increase in 2004, Santa Fe's 65 percent increase in 2004 and the federal increase from \$5.15 to \$7.25 in 2007-09 (about 33 percent in real terms). All of these have been studied in detail."

estimated differences in effects for larger changes in minimum wages (In response to an inquiry the Berkeley-IRLE team writes: “Zipperer (2014), uses state panel data since 1979 to examine whether the effects of minimum wages vary by the min/median ratio. He finds the same results as Dube, Lester and Reich (2010) and Allegretto, Dube and Reich (2011), even for states in which the min/median ratio is in the mid-50s. While the employment elasticities are slightly higher at higher minimum to median ratios, they still do not reach statistical significance. Although the ratio would be still higher in Los Angeles, Zipperer’s finding suggests that the previous literature is not entirely irrelevant.” The references are found in the Berkeley-IRLE report.)

- To directly account for potential uncertainty in using the existing literature to assess larger changes in minimum wages, the Berkeley-IRLE tries to examine different mechanisms through which the minimum wage can affect the economy of the city of LA. (The Berkeley-IRLE team writes: “Precisely because of the problem of using these reduced-form studies for an out-of-sample prediction, we develop our job loss estimates from estimates of the specific mechanisms at work. Chapter 5 (see esp. Table 11) of our report use the levels of the proposed Los Angeles minimum wages to take into account two mechanisms that directly affect employment: the negative effects of our estimates of increased prices on sales, and the positive effects of our estimates of increased spending power within the city.”) As discussed in Section II.2, while useful and important, there may be other relevant mechanisms through which minimum wages affect the economy that have not been extensively studied.
- We also found the following point made by Berkeley-IRLE in correspondence with us useful. “For some further perspective, not included in our report, we have calculated min/median ratios by state implied by raising the federal minimum wage to \$10.10, as in last year’s Harkin-Miller bill. The min/median ratio under Harkin-Miller would have exceeded 55 percent in 21 states, 58 percent in 10 states, 60 percent in 4 states, and 63 percent in 1 state. These higher ratios are comparable to those that would occur for the \$13.25 Los Angeles proposal. Harkin-Miller nonetheless was endorsed by a large number of economists.”

While we find these points reassuring, we concur with another point made by the Berkeley-IRLE team in response to our inquiries and communicated to the City Council: “Nevertheless, as we state in our report, we agree that some caution is warranted in relying on the results of the literature at the higher wage levels proposed for 2019, and that the risk of unintended consequences is greater.”

III.2 Role of Closely Integrated Local Labor Market

A particular concern has been that the minimum wage in the City of Los Angeles may be hard to predict from previous research because the city’s economy is highly integrated with that of the surrounding areas. It is helpful that much of the modern empirical research on the minimum wage is based on areas that are contiguous, such as bordering states or counties.¹⁹ Yet, while this might mean that economic conditions in

¹⁹ This research design goes back to Card, David and Alan Krueger. 1995. “Myth and Measurement.” Princeton University Press, who provide an early assessment. A recent discussion can be found in Allegretto, Sylvia, Arindrajit

these areas are likely to evolve similarly absent the minimum wage (making for good treatment-control comparisons if one of the areas experiences a minimum wage increase), it does not mean that the degree of worker and firm mobility is necessarily comparable to an integrated labor market as Los Angeles. For example, San Jose may be a good comparison, while San Francisco may not be – owing largely to the geography of each city.

It is reassuring to know that existing research has also studied increases in minimum wages along state borders occurring *within the same metropolitan statistical areas*²⁰. These findings confirm that the employment effects tend to be small. (This is especially useful since any spillover effect on employment in the neighboring labor market would have *raised* the estimated effect of the minimum wage. So finding small employment effect in these specifications is particularly useful.) Especially for the smaller range of the proposed increase in the minimum wage to \$13.25 by 2017, this provides helpful evidence that previous studies are likely to be decent guide impact of the minimum wage on employment.

III.3 Considerations From a Longer-Term Perspective

There is a lack of research on the longer-run impacts of the minimum wage. This is partly due to the fact that in the past, minimum wage increases were often not large enough or not in place long enough to obtain an estimate of employment effect that achieved statistical precision. Limited existing evidence does suggest that the employment effects may in fact increase over time.²¹ Hence, the uncertainty as to the minimum wage effects is largest over the longer term, when workers and firms have fully adjusted to the minimum wage and capital-labor and labor-labor substitutions have fully occurred.

Overall, given the uncertainty as to the effects of larger increases in minimum wages occurring in closely integrated economic areas, and given the potential of larger employment effects in this scenario, especially over the longer run, this may speak in favor of a more gradual approach. Hence, we concur with the assessment of the Berkeley-IRLE reports' assessment that their (or any) predictions are likely to be of better guidance for the smaller of the two proposed increases.

Dube, Michael Reich, and Ben Zipperer. 2013. "Credible Research Designs for Minimum Wage Studies." IZA Discussion Paper No. 7638.

²⁰ Allegretto, Sylvia, Arindrajit Dube, T. William Lester, and Michael Reich. 2010. "Minimum Wage Effects Across State Borders: Estimates Using Contiguous Counties." *Review of Economics and Statistics*. 2010, Vol. 92, No. 4, Pages 945-964 and an unpublished working paper by part of the same team
<http://www.irle.berkeley.edu/workingpapers/181-09.pdf>

²¹ A study based on Canadian data finds support in favor of minimum wage effects being stronger over the longer-run for teenagers (Baker, Michael, Dwayne Benjamin, and Shuchita Stanger. 1999. "The High and Lows of the Minimum Wage Effect: A time-series cross-section study of the Canadian Law." *Journal of Labor Economics* 17 (2): 2318-2350).

IV. Practical Considerations Raised by the Three Reports

In this section we address issues such as monitoring the economic impact of the policy change, guaranteeing compliance, and providing exemptions from the minimum wage for particular sectors and industries. Our assessment is that monitoring is important, especially if the law incorporates provisions for appropriate data collection on the impact of minimum wages on firms and workers. Monitoring is particularly useful if at the same time complementary policies are developed for the event of adverse economic impacts on workers or firms. Similarly, providing delayed phase-in may militate against the most serious potential impacts for certain “high sensitivity” businesses such as smaller firms or businesses in certain non-profit sectors. However, such exceptions can significantly reduce the number of workers affected by the policy and make enforcement more difficult. We discuss each of these issues in more detail below.

IV.1 Options for Monitoring Economic and Social Impacts

Two of the three studies suggest monitoring the potential effects of the minimum wage on the wellbeing of citizens and the economy of the City in real time. We agree with the authors of the studies that this is a good idea. However, given that the required data is not easy to gather, especially if it is supposed to be timely, we believe it is necessary that the City Council establishes a framework for data collection, preparation, and analysis at the same time as passage of the minimum wage law. The City Council could consider appointing a working group responsible for evaluating the policy impacts and a plan for collecting the necessary data. Real time data collection, with a scientifically proven sampling strategy, as is for example available by high-quality private vendors, will be paramount in this effort. Such data would also be helpful to monitor the compliance of minimum wages, since it provides direct, high-quality estimates of which types of workers may not receive the statutory minimum wage. Additionally, this group could evaluate how the information may be best used to revise or complement minimum wage policy if it appears that the effects of increasing the minimum wage are better or worse than predicted. For example, Seattle has created a minimum wage commission to monitor the policy implementation and provide audits of the policy’s impacts. Seattle’s commission may serve as a model for a similar commission in Los Angeles.

We also believe it is an excellent idea to actively develop complementary programs that could support workers and businesses in the event that the potential adverse effects of the minimum wage are stronger than anticipated, or if the benefits are less strong than anticipated. For example, a likely scenario here is that attainment of the highest level of the minimum wage might arise during an economic downturn, which given known business cycle patterns may well be in 2017 or 2019. Availability of complementary programs would enable the City to respond effectively and quickly to support workers and firms in case of unanticipated effects of the minimum wage.

IV.2 Should There Be Exceptions for Small Businesses?

The Berkeley-IRLE study shows that firms of all sizes will be affected by the increase in minimum wages, but that smaller firms tend to have a larger share of workers experiencing a raise (Table 8). The study does

not analyze potential differential effects of minimum wage increases by firm size. However, it does mention in Section 9.1, that several other local minimum wage ordinances contained minimum wage exemptions or delayed phase-in for smaller firms, and that in monitoring the effect of the minimum wage increase the effect of on smaller firms should be monitored separately.

Beacon recommends eliminating the minimum wage for small businesses, but provides no definition of “small.” In a separate section of the report the Beacon authors recommend “For businesses with 500 or more employees that offer medical benefits to full-time employees, that \$15 per hour minimum wage is pushed back until 2018. For businesses with fewer than 500 employees, the \$15 per hour minimum wage is pushed back until 2021. A more gradual increase would be especially beneficial to small businesses, where payrolls represent a more substantial percentage of total operating costs.” This would effectively delay implementation for approximately half of workers. (See Berkeley-IRLE Table 8)

In implementing any exceptions for smaller firms, the Berkeley-IRLE study points out several important practical aspects, such as the definition of “small” and the definition of a “firm.” They also highlight the important point that wholesale exemptions based on firm size can create incentives for firms to avoid the law by tailoring their employment sizes.

If exceptions involving small firms are being considered, we recommend that it is worth reviewing findings as to which firms may find adjusting to the minimum wage more difficult and why. Among others, such a review may help establish which firms would especially benefit from an exception, and whether there are other approaches available to support these firms. It is also worth pointing out in this context that recent research by the Census Bureau highlights that the biggest engines of job creations are typically younger firms, not smaller firms per se. Since younger firms typically start small, this partly explains why small firms appear to grow faster on average. Given the particular desirability of job growth, temporarily exempting or supporting younger firms is worthy of consideration.

IV.3 Should There Be Exceptions for Certain Sectors or Groups of Workers?

Besides small businesses, the Berkeley-IRLE report discusses policy aspects of potential exemptions for teenagers, firms that have non-wage benefits, and for non-profit firms. The study recommends against special treatment of teenagers, partly referring to their estimate that teenagers constitute a small share of workers affected by the minimum wage. The Beacon study recommends wholesale exemptions from minimum wages for training periods, younger workers and nonprofits. Despite the fact that teens represent a small proportion of those who would be impacted by the minimum wage there is reason to be concerned about the disemployment effects of minimum wages for teens. Neumark et al. (2014) find large disemployment effects for teens even after taking into consideration spatial heterogeneity.²² It is worth noting that existing federal and state law already provides an exemption for teenagers and ‘learners,’ defined as workers new to the particular occupation. The exemption for teenagers applies to workers under 20 years of age for the first 90 calendar days. The exemption for ‘learners’ allows payment of 85% of minimum

²² Neumark, David, J. M. Ian Salas, and William Wascher (2014). “Revisiting the Minimum Wage—Employment Debate: Throwing Out the Baby with the Bathwater?” *Industrial & Labor Relations Review*, 67(3 suppl), 608-648.

wages for the first 160 days on the job. More generally, wholesale exemptions may create incentives to avoid the minimum wage by substituting covered by uncovered workers.

The Berkeley-IRLE study does not address the question of tips, referring to the fact that current California state law regulates the treatment of tips. With regards to non-wage benefits, the Berkeley-IRLE report authors point to potentially substantial difficulties in enforcement and the risk of unequal treatment among firms and workers. The study's discussion of non-profit firms is too long to summarize here, but it points to potential implementation issues for which types of non-profit receive exemptions from the minimum wage.

IV. 4 How Should Compliance Be Monitored?

The Berkeley-IRLE and Economic Roundtable reports provides a useful summary of a range of potential practices for monitoring compliance with the minimum wage that have been enacted in other minimum wage increases in California and nation-wide. This is too long to comment on here. However, it is worth emphasizing that for effective compliance it is important to collecting information on business payroll that allows a calculation of hours and hourly wages. As mentioned in Section II.1, while minimum wages are typically stated in terms of wage per hour, most data collected by state or federal agencies for businesses in Los Angeles does not allow one to calculate hourly wages. For example, the QCEW data provides only information on quarterly wage bill and number of workers. Timely and accurate data can for example be obtained by requiring businesses to keep records on their payroll and hours using appropriate software. Similarly, innovative data collection strategies to elicit widespread worker-level data on earnings and employment are worth exploring. For example, incentivizing or requiring workers to submit their hours worked and earnings received regularly via mobile applications may provide substantial information that can complement firm-level payroll statistics and more in-depth survey data.

The Beacon study does not address the issue of compliance.

IV.5 Issues raised by Motions/Comments/Data Requests Submitted by 12/10/2014

The issues raised by Motions/Comments/Data requests evolve around a few common themes. These comprise comments in favor or against exemptions for particular groups, such as trainees, teenagers, non-profits, small businesses, or tipped workers; concerns regarding the effect of minimum wages on the profitability and sustainability of businesses in various sectors; support for the minimum wage as means to support low-income workers such as women, single mothers, or immigrants. As summarized in our technical review, these issues have been addressed by the three reports.