

## Department of Economics, Finance & Accounting

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Minimum Wage Compliance and Household Welfare: An analysis of over 1500

Minimum Wages<sup>1</sup>

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#### Abstract

Minimum wages are increasingly being used in developing countries as a policy to combat exploitation of workers and raise living standards. However, in many developing countries there is a substantial difference between *de jure* and *de facto* regulation. We examine the consequences of imperfect compliance by looking at the heterogeneous effects of minimum wages across compliance regimes in India from 1999-2011. We find noncompliance rates as high as 90% for some unskilled workers in India. We show that minimum wages have a positive effect on wages, without a corresponding effect on employment. As a result, household consumption increases following increases in the minimum wage; however, compliance matters. The beneficial pass-through of higher minimum wages to wages and consumption is significantly reduced in low compliance regimes. Our findings imply that labour market reforms have the potential to significantly improve workers' living standards in developing countries but only if accompanied by effective enforcement mechanisms.

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## 1. Introduction

Minimum wages aim to protect workers against low pay and are used by governments to try to reduce poverty and inequality. Dube (2019) and Neumark et al. (2014) provide recent summaries of the impact of minimum wages on wages, employment, and poverty. Dube (2019) states that the evidence “points to a very muted effect of minimum wages on employment, while significantly increasing the earnings of low paid workers.” Neumark et al. (2014) on the other hand, state that “we continue to view the available empirical evidence as indicating that minimum wages pose a tradeoff of higher wages for some against job losses for others and that policymakers need to bear this tradeoff in mind when making decisions about increasing the minimum wage.” The contrasting conclusions reached by these authors indicate that we are still a long way off reaching a consensus on the effects of minimum wages.

These reviews focus on developed countries, where the assumption that employers are fully compliant with the minimum wage may be reasonable. However, this assumption can be misleading when applied to developing countries, where there is a substantial difference between *de jure* and *de facto* regulation. Rani et al. (2013) report noncompliance rates as high as 50% for some developing and emerging countries, with most of the countries in the study having noncompliance rates above 20%. Such a high rate of noncompliance complicates the analysis of minimum wages in developing countries (Neumark and Wascher, 2007).

There are a number of theoretical papers looking at the interaction of minimum wages and compliance. In a competitive labour market, noncompliance with the minimum wage raises the marginal cost of labour above the market wage which reduces employment. Whether this

effect differs across compliance regimes depends on how the decision is modelled. If firms can only choose to either comply or not with the minimum wage, the noncomplying employer will reduce employment below the competitive level but still employ more workers than if they had complied with the law (Chang and Ehlrich (1985)). If, on the other hand, employers can choose to partially comply with the minimum wage, then Yaniv (2001) shows, that in a competitive labour market, minimum wages will reduce employment in *all* firms to the full compliance level, irrespective of the level of compliance. In imperfectly competitive labour markets, Basu et al. (2010) show that moderate increases in minimum wages can increase employment and that this effect is stronger in high compliance labour markets.

While the interaction of minimum wages and compliance provides additional insights into the workings of labour markets, there has been very little empirical work examining this issue. In this paper we estimate minimum wage compliance rates in India from 1999-2011. Indian provides an interesting study because despite substantial economic growth during this period, growth in wages and employment was more muted. In addition, the system of minimum wage determination in India generates over 1500 minimum wages across states and occupations, variation in which can be used to examine the interaction between minimum wages and compliance. We show that noncompliance was a key feature of Indian labour market during this period, with noncompliance rates as high as 90% for some workers. Noncompliance is higher for casual workers, for females, for unskilled workers and those working in rural areas.

Previous work in this area has tended to document the extent of noncompliance or its causes, without examining its impact on poverty and employment (Strobl and Walsh (2003), Ronconi (2010), Bhorat et al. (2012), Rani et al. (2013), Ham (2015), Kanbur et al. (2013) and Clemens and Strain (2020)). In the second part of the paper we extend this work by exploiting

variation in compliance rates across states, and over time, to examine the impact of noncompliance on minimum wage effects. Our results show that increasing the minimum wage has a positive effect on wages in India. We find little evidence of significant employment effects in response to these higher wages. As a result, the higher wages that follow a minimum wage increase, leads to higher household consumption, with a marginal propensity to consume equal to 0.49. However, compliance matters. The beneficial pass-through of higher minimum wages to wages and consumption is substantially reduced in low compliance regimes.

These results extend the recent empirical analysis of minimum wage effects in India. Menon and Rodgers (2017) examine minimum wage effects in India assuming full compliance and find that minimum wages have little impact on labour market outcomes in urban areas but increase wages in the rural sector. However, they do not take no account of the large differences in compliance across sectors when analyzing the minimum wage effect. Soundararajan (2019) allows for imperfect enforcement in her analysis of minimum wages for construction workers in India. She finds that in weak enforcement regimes wage effects are negligible and employment effects negative or null, while in stronger enforcement regimes wage effects are positive and employment effects positive or null. However, she only considers construction workers and acknowledges that her measure of enforcement may not capture aspects such as corruption and collusive agreements that might directly impact on compliance. In contrast, we allow for heterogeneous minimum-wage effects, using a direct measure of noncompliance constructed from the data and examine wage and employment effects across all sectors of the economy.

In addition, we extend previous research by considering the impact of minimum wages, not only on wages and employment, but also on household consumption. Given the objective

of minimum wages in developing countries, a focus on consumption is clearly warranted. We are aware of only one previous study (Yamada (2016)) that looks at the effect of minimum wages on the distribution of household consumption. He finds that while minimum wage increases in Indonesia resulted in increased earnings in the lower tail of the distribution, there was no corresponding increase in consumption. However, he did not consider heterogeneous effects across compliance regimes in detail. We find that the estimated minimum wage effect on consumption in models that fail to control for noncompliance substantially underestimate the true effect under full compliance.

Our findings have implications for the minimum wage literature in developing countries more generally. The evidence base for developing countries is smaller but growing.<sup>2</sup> However, as is the case for developed countries there is little by way of consensus. Dinkelman and Ranchhod (2012) find that the expansion of minimum wages to domestic workers in South Africa increased wages significantly, with no noticeable effect on employment. Bosch and Manacorda (2010) find that the decline in the minimum wage in Mexico explains all of the growth in wage inequality in the bottom end of the wage distribution between the late 1980s and early 2000s, while Lemos (2007) analyses minimum wages in Brazil and finds that the legislation reduced inequality, with no evidence of employment effects. In contrast, Neumark et al. (2006) find no evidence that minimum wages in Brazil lifted family incomes at the bottom of the distribution. Yamada (2016) finds that increasing the minimum wage in Indonesia resulted in an increase in wages, but a reduction in hours of work and formal employment. At the household level, he found that raising the minimum wage resulted in an increase in earnings

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<sup>2</sup> For a detailed review of this literature see Belman and Wolfson (2014).

in the lower tail of the distribution; however, as noted above there was no corresponding increase in consumption. Workers viewed the wage increase as transitory and thus increased savings rather than consumption following the minimum wage increase. He concludes that the welfare gain resulting from raising the minimum wage was small and attributable mostly to an increase in the leisure of low-wage workers. Gindling and Terrell (2007) find evidence of modest employment reductions following minimum wage increases in Costa Rica, while Gindling and Terrell (2009) find relatively large reductions in employment in Honduras.

Interpreting these cross-country differences is complicated by the variation in compliance across countries in developing countries. Ronconi (2010) reports a 95% compliance rate with the minimum wage in Argentina. Likewise, Rani et al. (2013) reports compliance rates of over 90% in Vietnam and Mexico. In contrast however, they report compliance rates of less than 60% in a number of countries including Peru, Costa Rica and South Africa. By highlighting the differences in the impact of minimum-wage laws across compliance regimes, our results can potentially reconcile the wide variation in results reported across these studies, given the compliance issues evident in many developing countries.

The rest of the paper is organized as follows. In section 2 we discuss the institutional details surrounding minimum wage legislation in India. Section 3 discusses the data used in our analysis. Section 4 discusses our noncompliance measures and presents an analysis of the determinants of noncompliance from 1999-2011. Section 5 uses this variation in compliance across states and over time to estimate the heterogeneous effects the minimum wage across compliance regimes. Section 6 presents some robustness checks for our main findings and Section 7 concludes the paper.

## **2. Institutional Detail and the Indian Economy**

During the first decade of the 21<sup>st</sup> century, the growth rate of GDP in India exceeded 7 per cent per annum. However, the process of economic growth has been uneven, with stunted growth in the manufacturing sector and low productivity in the agricultural sector. Unlike other Asian economies, India's structural transformation has been atypical, with the services sector, as opposed to the export-oriented manufacturing sector, being the driver of growth (Binswanger-Mkhize, H. 2013). However, this growth has not been accompanied by corresponding growth in employment (Thomas (2012); Kannan and Raveendran (2009)). For instance, while GDP grew at 6.3 per cent from 1993 to 2004, employment growth was only 1.8 per cent (Papola (2013)).

Wage growth for both regular and casual workers in rural and urban areas has been positive over this period, but slower in the post reform period (1993 to 2005) than in the pre-reform period (1983 to 1994) (Sarkar and Mehta (2010)). From 2004 to 2012 the wage of casual workers grew at a faster rate than regular worker, yet a huge disparity in earnings remain, with the former earning around 35 per cent of the latter in 2011 ((Papola and Kannan (2017))). Given the low wages still experienced by many workers, minimum wages may potentially provide an important means of raising the wages of disadvantaged workers.

The goal of the Minimum Wage Act 1948 (henceforth MW Act) is to prevent the exploitation of workers from payment of unduly low wages in industries where sweated conditions prevail. The MW Act aims to ensure the welfare of workers and their families by fixing a lower bound on wages. The Act does not define any criteria for fixing the level of the minimum wage. However, the recommendations in the sessions of the Indian Labor Conference, and guidelines given by the Supreme Court, offer guidance in fixing and revising minimum wages. The Act allows the government to fix minimum wages for listed schedules

of employments. This means that different wages are set different occupations and also for different tasks within those occupations.<sup>3</sup> The Act also empowers the state governments to add occupations to the list of employment schedules, with the condition that there are 1000 or more workers engaged in a particular occupation or activity in the state. As the coverage in terms of schedules of employments varies across states, this gives rise to a complex system of minimum wage. As of 2013, there were 45 different schedules of employments specified by central government and 1699 schedules in the States and Union Territories.

The coverage of minimum wages in India is not universal. A little more than half of the workforce is self-employed in India and these workers are not covered under the Act. Instead the Act applies to wage earners, both casual and regular workers, in activities incorporated in the schedules of the Act. According to one estimate, around two thirds of wage earners in India are covered by the MW Act in 2009-10, with coverage varying between 93.4% (agricultural workers) and 30.5% (construction workers) (Rani et al. (2013)). Coverage is higher in rural areas than in urban areas.

The Act also mandates a periodic revision of the minimum wages at intervals not exceeding five years. To prevent wages from falling in real terms, a variable dearness allowance (VDA) is included with the basic rate of minimum wage. However there is some doubt as to the extent to which minimum wages have been revised with changes in the cost of living (Anant and Sundaram (1998)).

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<sup>3</sup> Scheduled employments are quite detailed. A very small number of examples include stone breaking and stone crushing, toddy tapping, the manufacturing of matches and fireworks and the plucking of siali leaf, each of which potentially have a different minimum wage in different states.



The enforcement of the provisions of the Act is carried out in the central sphere by the officers of the Central Industrial Relations Machinery, and in states by their respective labor departments. Under the Act, every employer is required to maintain records giving particulars of employees, wages paid to them, work performed by them and any other necessary information. An employer who pays any employee less than the minimum wage or contravenes any other provisions of the Act is punishable with an imprisonment which may extend up to 6 months or a fine worth Rs. 500 or both. However, enforcement tends to be weak due to limited resources and corruption (Sundar (2010)).

### **3. Data**

In this study we merge survey data from the National Sample Survey Office (NSSO) with administrative data from the Report on the Working of the Minimum Wages Act, 1948, to create a unique minimum wage database across states, industries and years. We use four rounds of the repeated cross sections of the household survey collected by the National Sample Survey Office (NSSO) to obtain individual level data on earnings, consumption and employment. The surveys used were conducted in the years 1999-2000, 2004-05, 2007-08 and 2011-12.

These employment surveys have detailed information on the employment status, wages and socio-demographic characteristics of the household and its members. The socio-demographic characteristics include education, age, region of residence and social-religious status. India operates a caste system which classifies people into rigid hierarchical groups. The Scheduled Caste people are those who were previously considered untouchables and are relegated to the lowest jobs. Enforcement of laws designed to protect members of the Scheduled Caste is lax, if not non-existent, in many regions of India. Scheduled Tribes are a

community of people who lived in tribal areas (mainly forest). They have traditionally been marginalized and not in the mainstream of the society. Together the SC and ST groups constitute the lowest social groupings in India.

The survey also collects data, based on a 7-day reference period, on industry, occupation, number of days worked and earnings under each employment activity for each worker. Measuring the daily wage accurately is important because minimum wages in India are prescribed on a per-day basis. To construct the daily wage, we divide a worker's total wage and salary earnings for the week by a measure of daily work intensity during the week. Work intensity is measured for each day of the reference week and summed to get weekly work intensity. Since a person may be engaged in more than one type of activity on a single day, two potential activities are allowed for and measured each day. Each day of the reference week is looked upon as comprising either two 'half days' or a 'full day' for assigning the activity status. A person is considered 'working' (employed) for the entire day if he/ she had worked for 4 hours or more during the day. If the person had worked for 1 hour or more but less than 4 hours on a day, they are considered 'working' (employed) for half-day and 'seeking or available for work' (unemployed) or 'neither seeking nor available for work' (not in labour force) for the other half of the day, depending on whether they are seeking/ available for work or not. The total wage or salary receivable for the week includes payment in cash, as well as the value of salary or wages in kind.

Workers are classified according to usual weekly work status. The self-employed operate their own farm or non-farm enterprises or are engaged independently in a profession or trade on own-account or with a partner. The essential feature of the self-employed is that they have autonomy (i.e., how, where and when to produce) and economic independence (i.e., market,

scale of operation and money) for carrying out their operation. Although self-employed workers account for over 50% of the Indian workforce, they are not covered by minimum wage legislation. As a result, we omit them from our analysis. Regular wage/salaried employees are workers working in another person's enterprise and getting, in return, a salary or wages on a regular basis (and not on the basis of daily or periodic renewal of work contract). This category not only includes individuals getting timed wages, but also persons paid by piece-rate and paid apprentices, both full time and part-time. Casual labour refers to people casually engaged in other's farm or non-farm enterprises (both household and non-household) and getting, in return, a wage according to the terms of the daily or periodic work contract. Although casual workers lack many of the employment rights of regular workers, they are covered by the Minimum Wage Act and therefore included in our analysis. When considering the robustness of our results we carry out the analysis separately for regular and for casual workers.

To measure consumption, we use average monthly household consumption. As noted in previous work (Belser and Rani (2011)), the employment effect of a minimum wage change is more likely to occur through an adjustment in days worked, rather than an increase in unemployment. Therefore, when examining the employment effects, we use the number of days worked in the past week by the worker.

We match the individual survey data with minimum wage data taken from the Report on the Working of the Minimum Wages Act, 1948 published annually by the Labour Bureau of the Government of India. This report provides the data on the minimum wage rates which have been fixed for different 'schedules of employment' in states, where a schedule refers to a classification of work based on occupation and skill. We assign every schedule of employment a relevant 3-digit industry code based on National Industrial Classification (NIC) which is used

in the NSS employment surveys to record the worker's industry of employment. The Labour Bureau also report data on the number of firm inspections carried out at the state level each year. We use these data on state inspections as a measure of enforcement (inspections per 100,000 workers)<sup>4</sup>.

We merge each year's minimum wage database with the corresponding employment survey using state codes and industry codes. We merged the 1998 minimum wage database with the 1999-2000 employment survey, 2004 with 2004-05 round, 2007 with 2007-08 round, and finally 2011 with the 2011-12 round. Since industrial classification codes changed between the four rounds of employment surveys, we have used NIC-98 classification throughout. By combining the survey data with the Labour Bureau data, we develop a unique database containing minimum wage information at the state-industry level and enforcement at the state level. This database enables us to uniquely assign each worker in the employment surveys her relevant minimum wage.

Summary statistics for the key variables used in our study are given in Table 1. The average minimum wage, across schedules of employment, increased from 52.61 rupee (\$0.61) in 1999 to 153.76 rupee (\$2.02) in 2011. However, this simple average hides substantial variation within and between states and occupation. In our analysis the minimum wage ranges from a low of 10 rupees a day (approximately \$0.13) for workers engaged in loading and unloading in Ports and Docks in the state of Tamilnadu in 1999, to a high of 356.1 rupees a day (approximately \$4.71) for workers in forestry and timber operations in the state of Kerala in 2011. In addition, we see that the average minimum wage exceeds the average daily wage in

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<sup>4</sup> We are grateful to Vidhya Soundararajan for kindly providing us me with the inspection data.

our sample in both 2004 and 2007. This suggests that noncompliance is likely to be prevalent in India. In the next section we look at the issue of noncompliance in detail.

#### 4. Compliance

To estimate noncompliance, we consider the compliance index developed Borat et al. (2013). They apply the Foster–Greer–Thorbecke poverty metric (Foster et al. (1984)) to the measurement of noncompliance. Specifically, they propose estimating noncompliance rates using

$$NC^\alpha = \frac{1}{N} \sum_{i=1}^N I(MW_i > w_i) \left( \frac{MW_i - w_i}{MW_i} \right)^\alpha \quad (1)$$

where  $MW_i$  is the minimum wage applicable for individual  $i$ ,  $w_i$  is the observed daily wage,  $I(a)$  is an indicator variable taking the value 1 if condition  $a$  is true and zero otherwise and  $\alpha$  is a measure of violation-aversion. When  $\alpha$  is equal to 0 this measure gives the proportion of the workers earning subminimum wages and is comparable to the traditional headcount measure reported by Rani et al. (2013). Setting  $\alpha$  equal to 1 accounts for the depth of noncompliance and is similar in spirit to the wage-bill effect reported by Strobl and Walsh (2003). However, this latter estimate treats any additional percentage increase in depth the same, irrespective of its magnitude. For example, a society in which everyone earns 20% below the minimum wage will be viewed the same as one in which half of the workers earn 10% below the minimum wage and the other half earn 30% below. In contrast a value of  $\alpha$  equal to 2 imposes violation-aversion, with wages further below the threshold receiving larger weights than those just below. In the above example, using  $\alpha$  equal to 2 would result in the second society having higher noncompliance than the first.

Using this index for different values of  $\alpha$ , we estimate three different measures of noncompliance.  $NC^0$  which is the traditional headcount measure,  $NC^1/NC^0$  which is the average shortfall among the noncompliant sample and  $NC^2/NC^0$  which is the violation-aversion adjusted measure for the noncompliant sample.

The results for all workers are given in Table 2. Looking at the first column we see that the noncompliance was above 65% from 1999-2007 and increased during the first half of the decade. Although compliance has improved by 2011, the noncompliance rate remains high, at over 53%. The second column shows the average percentage shortfall in wages relative to the minimum wage for the sample of non-compliers. It shows a similar trend to head count rate, rising from 1999 to 2004 before declining through 2011. These estimates, which quantify the depth of noncompliance, show that not only are workers being paid less than the minimum wage, but the extent of noncompliance is large. Even in 2011, the average shortfall amounted to 31% of the minimum wage.

Table 3 looks at noncompliance across industry. In keeping with previous work, we find that headcount noncompliance is high in the agricultural sector but low in Electricity, Gas and Water supply, and Finance, Insurance and Retail. However, looking at alternative measures it is evident that there is much less variation in depth of noncompliance than in headcount ratios across industry. Furthermore, the rankings of industries can change dramatically based on the measure. For example, the Community, Social and Personal services sector had the third lowest headcount rate in 2011, but the highest depth of violation measure. In fact, this sector has the highest noncompliance rate based on average depth of noncompliance in all the years we consider.

Figure 1 shows the minimum wage and noncompliance rates across states over time. The data show substantial heterogeneity in minimum wages and noncompliance rates across states and over time. For example in 2011 the noncompliance ranged from a low noncompliance headcount rate of 8.2% in Himachal Pradesh, to a high of 90.79% in Chhattisgarh. In addition, the time profile of noncompliance varies substantially across states. For example, between 2005 and 2011 the noncompliance rate increased in Chhattisgarh, declined slightly in Dehli and declined substantially in Punjab. The correlation in state rankings based on alternative measures of noncompliance is 0.72.

Figure 2 plots state rankings by headcount and depth measures of compliance across all years. While there is general agreement between the measures, there are some notable instances where the alternative measures differ. For example, while Bihar is as the fourth lowest of the 23 states in terms of depth of noncompliance, it is only ranked 17<sup>th</sup> lowest in terms of headcount. As was the case when comparing noncompliance across workers and industries it is evident that flexible measures are also valuable when comparing states.

To examine the determinants of noncompliance in more detail, we estimate the following two-way fixed effects model:

$$NC_{ist} = \beta_0 + \beta_1 MW_{st} + \beta_2 X_{ist} + \beta_3 Z_{st} + \beta_4 D_s + \beta_5 D_t \quad (1)$$

where  $MW_{st}$  is the minimum wage in state  $s$  at time  $t$ ,  $X_i$  is a vector of individual characteristics, including gender, education, religious/social status, location, age and marital status and  $Z_{st}$  is a vector of time varying state characteristics, including state population and state gdp per capita. We estimate three versions of equation (1) corresponding to different measures of compliance. The first is a probit model, where  $NC_{ist}$  is a binary variable taking

the value of 1 if individual  $i$  in state  $s$  at time  $t$ , is paid below her minimum wage and zero other. This allows us to consider determinants of the head count measures of noncompliance.

To consider the determinants of the depth of noncompliance we specify  $NC_{ist} = \left( \frac{MW_i - w_i}{MW_i} \right)^\alpha$ , where  $\alpha=1$  or 2. When  $\alpha=1$  we have the simple measure of depth, while  $\alpha=2$  allows for depth-aversion. When using measures of the depth of noncompliance we estimate the regression on the subsample of noncompliers.

The results for each measure of noncompliance are given in Table 4. Looking at the results for the headcount measure in first column, we see that higher minimum wages are associated with higher noncompliance. This is consistent with both theoretical predictions (Ashenfelter and Smith (1979)) and recent empirical work (Clemens and Strain (2020)). Looking at the individual characteristics we see that the headcount measure of noncompliance is higher for women, casual workers, younger workers, those living in rural areas and unskilled workers.

A comparison of the  $NC^1$  and  $NC^2$  illustrates the potential value of these additional measure. For instance, the female effect is also significant for both the  $NC^1$  and  $NC^2$  measures. Thus, not only were female workers more likely to be receiving wages less than the minimum, they also suffered more in terms of the depth of noncompliance. Such a pattern is evident in other studies that have compared headcount to depth measures (Rani et al. (2013)). Therefore, in terms of noncompliance female workers in India suffer a double blow. The same double threat is not evident across all worker characteristics. For instance, while unskilled workers are more likely than regular workers to receive wages less than the minimum wage, conditional on noncompliance there is little difference in the depth of noncompliance between these two groups. Casual workers are more likely to be noncompliers, but conditional on noncompliance



the depth of noncompliance is somewhat lower among casual workers. This is consistent with the raw data that showed that in 2007 and 2011 the average depth of noncompliance was lower among casual workers than regular workers. These comparisons illustrate the complex nature of noncompliance in India (Bhorat, H., R. Kanbur and B. Stanwix 2019).

In the remainder of the paper we exploit the variation in compliance rates across states, skill categories and time to examine the impact variation in minimum wage effects by compliance level.

## 5. Minimum Wage Effects and Compliance

In this section we focus on the headcount measure of noncompliance and examine the impact of minimum wages on outcomes.<sup>5</sup> We calculate state-level noncompliance rate,  $NC_{st}$ , using the state-industry specific minimum wages. We use the variation in minimum wages and noncompliance rates across states to identify their effect on wages, consumption and work. We follow a large literature in using regional variation in labour market reforms to identify the effect of labour market regulations on labour market outcomes (Card (1992), Neumark and Wascher (1992), Besley and Burgess (2004), Allegretto et al. (2017), Menon and Rodgers (2017)). Allegretto et al. (2017) describe the canonical two-way fixed effects state-minimum wage model:

$$Y_{ist} = \beta_0 + \beta_1 MW_{st} + \beta_3 X_{ist} + \beta_4 D_s + \beta_5 D_t$$

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<sup>5</sup> We find similar results when we use the other measures of compliance. These results are available in the online Appendix.

where  $Y_{ist}$  is a labour market outcome, such as wages or employment,  $D_s$  and  $D_t$  are place(state) and time dummies respectively.  $X_{ist}$  is a vector of individual characteristics and  $Z_{st}$  is a vector of time varying state characteristics. As discussed in Allegretto et al. (2017), the identification of the minimum wage effects in this model relies on the parallel trends assumption, which assumes that the evolution of the outcome variable over time would be the same across states in the absence of a minimum wage change.<sup>6</sup>

In this paper we use a variation of the canonical model that incorporates noncompliance as follows:

$$Y_{ist} = \beta_0 + \beta_1 MW_{st} + \beta_2 NC_{st} + \beta_3 MW_{st} * NC_{st} + \beta_4 X_{ist} + \beta_5 Z_{st} + \beta_6 D_s + \beta_7 D_t \quad (2)$$

where the interaction term allows the effect of the minimum wage to differ across compliance regimes. In our analysis  $Y_{ist}$  is one of wages, employment or consumption.  $X_{ist}$  is a vector of individual characteristics including religion, whether the work is regular or casual, gender, age, and education.  $Z_{st}$  is a vector of time varying state characteristics, including population and State GDP, included to control for local labour demand conditions.

The model specified in equation (2) is in keeping with previous work examining the employment effects of minimum wages in India (Soundararajan (2019)). Our specification differs from Soundararajan (2019) both in the measure of compliance used, and the fact that we estimate the model over all industries, whereas Soundararajan (2019) focuses only on construction. Using the same identification strategy as previous work but extending the

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<sup>6</sup> We will examine the robustness of our results to the parallel trend assumption in Section 6.

specification to include noncompliance allows us to directly compare our results to previous work.

As noted earlier, in a competitive labour market noncompliance a binding minimum wage raises the marginal cost of labour above the market wage (due to probability of punishment). If firms can only choose to either comply or not comply with the minimum wage for all its workers this increase in marginal cost induces the noncomplying employer to reduce employment below the competitive level but to still employ more workers than would have been the case if they had complied with the law (Chang and Ehrlich (1985)). This implies that the direct minimum wage effect on employment,  $\beta_1$ , should be negative and the interaction with noncompliance,  $\beta_3$ , positive. If, on the other hand, employers can choose to partially comply with the minimum wage, that is pay some workers the minimum wage and others less, then Yaniv (2001) shows, that in a competitive labour market, employment in all firms will be reduced to the full compliance level, *even in firms that are not fully complying*. In this case the direct effect of the minimum wage will again be negative but the interaction effect zero. In imperfect labor markets Basu et al. (2010) show that moderate increases in the minimum wages can increase employment and that this effect is stronger in high compliance labour markets, implying that  $\beta_1$ , should be positive and the interaction with noncompliance,  $\beta_3$ , negative.

The results for wages, consumption and employment are given in Tables 5. We begin by looking at the results for wages. Before considering the results for minimum wages and noncompliance, we note that the estimated coefficients on the individual characteristics are all in line with expectations, with older workers, Hindus, married workers, men, regular workers and those in urban areas all earning a wage premium. We next consider the coefficients of main interest in this paper, namely the minimum wage effects. In the first column the coefficient on

the minimum wage measures the average pass through of the minimum wage to daily wages across all compliance regimes. Looking at this we see that a one rupee increase in the daily minimum wage leads to a 32 paise increase in the daily wage (a paise is 1/100<sup>th</sup> of a rupee). While the sign of this effect is as expected it is not statistically significant. However, this possibly reflects the fact that in this specification the impact of the minimum wage is being aggregated over all compliance regimes across states.

To examine the role of compliance in determining the minimum wage pass through, columns two estimates the model including the interaction between the minimum wage and noncompliance rates. The coefficient on the minimum wage variable remains positive and is now statistically significant, showing that minimum wages have a statistically significant effect on daily wages in full compliance regimes. However, the interaction effect with noncompliance is negative indicating that, as expected, higher rates of noncompliance reduce the pass-through of minimum wage increases to daily wages. For instance, our results imply that a worker in a labour market where noncompliance is only 30%, would expect to receive almost all of the minimum wage increase. In contrast a worker in a labour market where the noncompliance rate was 50% would receive 61 paise for each rupee increase in the minimum wage, while a worker in high noncompliance market, with noncompliance rates of 70%, would only receive 28 paise for each rupee increase. These results highlight the importance of distinguishing between *de jure* and *de facto* regulation (Bhorat et al. (2019), Kanbur and Ronconi (2018)).

Columns three and four examine the impact of minimum wages on work intensity. As noted above, in a competitive labour market  $\beta_1$  should be negative and  $\beta_3$  non-negative when examining employment. We find no evidence of this. Our results suggest that, if anything,

minimum wages have a weak positive effect on work activity on India. Furthermore, none of these employment effects are statistically significant. This is in keeping with Soundararajan (2019) and Menon and Rodgers (2017) who also found that minimum wages tended to have a small positive or null effect on employment in India.

Given the positive wage effects and the lack of employment effects we would expect the minimum wage increases to be reflected in higher household consumption. This is precisely what we observed in columns five and six of Table 5. As is the case with wages, we find that higher minimum wages are associated with higher levels of consumption. This contrasts to the findings of Yamada (2016), who finds that although minimum wage increases in Indonesia resulted in increased earnings in the lower tail of the distribution, there was no corresponding increase in consumption. This partly reflects negative employment responses in Indonesia but also an apparent belief among Indonesian workers that minimum wage increases were transitory and did not increase permanent income. This he argued, raised serious concerns regarding the effectiveness of minimum wage for improving living standards. Our findings for India, however, indicate that minimum wages raise wages without reducing employment. Furthermore, Indian workers viewed this increase as an increase in permanent income and increased consumption accordingly. Our results suggest that, in a full compliance regime, a one rupee increase in the daily minimum wage results in a 14.61 rupee increase in monthly household consumption, implying a marginal propensity to consume out of the minimum wage increase of 0.49. Thus, the minimum wage is effective in raising living standards in India. However, once again enforcement matters. The coefficient on the interaction between the minimum wage and noncompliance is negative showing that pass through of higher minimum wages to increased living standards is hampered by weak enforcement.

Combined, the results in Table 5 show that minimum wages have a positive effect on wages and consumption in India without significant effects on employment. However, compliance matters for wages and consumption. The beneficial pass-through of higher minimum wages to wages and consumption is reduced substantially in low compliance regimes.

## **6. Robustness Checks**

### **6.1 Regressions by Subgroups**

To examine the robustness of our results across subgroups of the population we estimate equation (2) across a range of worker classifications. We distinguish between casual and regular workers, male and female workers, rural and urban workers and young (aged 25 or less) and older workers. The results for these specifications are given in Table 6. The key results from the earlier analysis are evident across all subgroups; minimum wages have a positive effect on wages and consumption, an effect which is mitigated by higher noncompliance, but minimum wages have only a weak effect on employment. There are some differences in the magnitudes of the noncompliance interaction effect on wages across groups, with the effect being somewhat larger for casual, urban, older and male workers. Nevertheless, this sub-group analysis supports the robustness of the finding reported in the main section.

### **6.2 State level Aggregation with State Specific Trends**

The identification of the minimum wage effects in equation (2) relies on the parallel trends assumption, which assumes that the evolution of the outcome variable over time would be the same across states in the absence of a minimum wage change. This assumption has been

challenged in the US literature that relies on state variation and there has been debate over how to proceed. Meer and West (2016) argue for the estimation of a trend break model. However, Addison et al. (2015) question the implications of their specification and Dube (2013) challenges the findings of their paper. Allegretto et al. (2017) argue that linear state specific trends may help overcome identification problems arising from a failure of the parallel trend assumption.<sup>7</sup> Following Allegretto et al. (2017) we modify equation (2) by including state specific trends. We estimate

$$Y_{ist} = \beta_0 + \beta_1 MW_{st} + \beta_2 NC_{st} + \beta_3 MW_{st} * NC_{st} + \beta_4 X_{ist} + \beta_5 Z_{st} + \beta_6 D_s + \beta_7 D_t + \beta_8 D_s * t \quad (3)$$

The results of estimating equation (3) are given in Table 7 and are consistent with those reported in Section 5. The models including state specific trends still show a positive direct effect of the minimum wage on wages and consumption, though the effect is less precisely estimated than before. Once again, we see that the impact of the minimum wage on wages and consumption declines as noncompliance rises. The effect of minimum wages on work is small and insignificant, even after inclusion of state-specific trends.

### 6.3 Endogeneity

In our estimation to date we have assumed that compliance is exogenous. However, it is possible that firms choose whether to comply or not in tandem with their other production decisions (Ashenfelter and Smith (1979), Chang and Ehrlich (1985), Squire and Suthiwart-

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<sup>7</sup> Neumark et al. (2014) call for higher order trends but Allegretto et al. (2017) find that the inclusion of such higher order trends makes little difference in their models.

Narueput (1997), Basu et al. (2010) and Clemens and Strain (2020)); if so the OLS estimator will be biased. To account for this, we consider an instrumental variable approach using two instruments for noncompliance. The first follows Almeida and Carneiro (2009) and Soundararajan (2019) and uses regional variation in crime rates to instrument for noncompliance. They motivate the use of crime rates as an instrument on the basis that states with low crime rates may also have strong institutions to enforce labor laws. The crime data are taken from the Crime in India Annual reports published by the National Crime Records Bureau and refer to the rate of total cognisable crimes per 100,000 of population. A cognisable crime implies a serious offence in which a police officer has the authority to make an arrest without a warrant and to start an investigation with or without the permission of a court. In India, crimes like rape, murder and theft are considered cognizable, while lesser crimes like public nuisance and mischief are considered non-cognisable.

The second instrument we consider is a measures of the strength of labour regulation enforcement across states. Since the mid-1990s the labour inspection system in India has undergone significant reform. Much of this followed complaints from employers that the existing system amounted to harassment of employers, with then Prime Minister Vajpayee conjuring the emotive image of “Inspector Raj”. While some have argued that these criticisms have been exaggerated and ideologically loaded, they have resulted in a significant relaxation of labour market inspections, with states using lighter labour regulations in a bid to attract investment into their region. Among the relaxations has been an increased emphasis on random, rather than targeted, inspections. The end result has been substantial variation in the scope and coverage of labour inspections across the states, for reasons that have little to do with existing underlying compliance rates and more to do with competition in the incentive



packages offered to attract investment to the state (Sundar (2010)). We exploit this variation in the timing and intensity of reforms across states, using the number of inspections (per 100,000 workers) in each state at time  $t$ , as an instrument for noncompliance.

The results from the first stage are given in the Appendix. The coefficients on the instruments have the expected signs; at the average value of the minimum wage higher crime is associated with more noncompliance and more inspections are associated with less noncompliance. The F-statistic on the instruments in the first stage are 3409 and 21116 for the direct noncompliance measure and the interaction term respectively, when unclustered standard errors are used, suggesting the instruments are highly relevant. However, these fall to 1.45 and 3.42 when the cluster robust standard errors are used in the first stage. The results of the second stage Instrumental Variable estimation are given in Table 8. Even after accounting for potential endogeneity, the estimated effects on wages and consumption are similar to those presented earlier, though the coefficients are less precisely estimated. The direct effect of minimum wages on daily wages and consumption is positive and the interaction term shows that these effects are weaker in high noncompliance regimes. The minimum wage effects on employment remain very small and statistically insignificant.

#### 6.4 Individual Components of overall effect.

In an influential paper Goodman-Bacon (2019) shows, that any two-way fixed effects estimate of DD relying on variation in a binary treatment timing can be decomposed into a weighted average of all possible two-by-two difference-in-differences estimators that can be constructed from the panel data set. This decomposition is important in that it highlights which state comparisons are being effectively used to obtain identification.

This result extends to a continuous treatment variable, such as that used in our paper. In particular, with a balanced sample and equal samples in each group, the overall estimate from a continuous difference in difference estimator such as (2) in the absence of the compliance controls is simply a weighted average of all possible (2x2) fixed effects. The weights are the difference in difference estimates from a first stage regression where the treatment variable (in our case the minimum wage) is used the dependent variable. In the extended model given by (2), the decomposition is more complicated in that identification of all the parameters requires at least 4 time periods. Furthermore, unequal sample sizes across states and years are also likely to affect the weights. Nevertheless, in the spirit of Goodman-Bacon we feel it useful to explore the likely individual contributions of pairwise state comparisons to our overall estimates.

For reasons discussed above we restrict our sample in this section to the balanced sample of states over the 4 years of our sample. We then estimate model (2) for every pairwise state comparison. Since we have 10 states in our balanced sample this results in 45 potential pairwise matches and thus 45 separate estimates of each parameter. As well as the parameter estimate we also keep account of the standard error of each estimate. We speculate that standard error is likely to be an important proxy for the relevant weight in each pairwise comparison, in the same way that the first stage treatment effect determines the weight in the canonical model, without controls for compliance.

The results from this exercise are given in Table 9. The first column shows the main minimum wage effect and the interaction effect on daily wages, work intensity and consumption for our balanced sample of states. The results are in keeping with those reported earlier for our full sample. The second column reports the simple mean across the 45 pairwise comparisons. It is clear from this that the simple mean may bear little relation to the overall

effect. The simple average of the interaction in the wage equation is almost zero, implying no variation in effect across compliance regimes. The simple average of the interaction effect is also much smaller than the two-way effect in the consumption equation and the simple average of the direct minimum wage effect is incorrectly signed in the work equation. In the third column we reported a weighted average of the pairwise estimates, where the weights are the inverse of the estimated standard errors. While not exact, the weighted averages across the 45 pairwise comparisons are now similar to the overall estimates. To explore this in more detail Figures 3a-c plot weighted kernel density estimates of the 45 pairwise estimates for the minimum wage effect and the interaction effect, where the vertical line denotes the overall two-way estimate. The weighted mode is very close to the overall effect in all cases. It clear from these graphs that the overall effects we report in this paper are not driven by a small number of unusual pair-wise comparisons.

## 6.5 Analysis by Skill Category

In the analysis thus far we have used aggregated state-wide noncompliance rates. This is useful in comparing our work to previous studies and also in allowing for the use of state level instruments when correcting for endogeneity. However, the aggregation involves throwing away variation in minimum wages and compliance rates across industries and skill categories within a state, that could be potentially useful in identifying the minimum wage effects. To examine this, we consider extending the regression model to allow for variation across the worker characteristics. In particular, we estimate

$$Y_{ict} = \beta_0 + \beta_1 MW_{ct} + \beta_2 NC_{ct} + \beta_3 MW_{ct} * NC_{ct} + Z_{st} + \beta_6 D_c + \beta_7 D_t \quad (4)$$

where  $c$  refers to the distinct categories of worker based on state of residence, industry, education, gender and urban status. In total we have 1288 such skill categories. Identification using equation (4) requires the somewhat stronger assumption of parallel trends across worker categories. Nevertheless, it is useful to see if the disaggregated analysis supports our state-wide analysis. The results are given in Tables 10a-c. For both daily wages and consumption, the results are very similar to those reported at the state level. Both wages and consumption rise with the minimum wage, but this effect is offset by noncompliance. The magnitudes are similar to those estimated at the state level. For example, the analysis using variation across worker categories implies that a worker in a labour market, with noncompliance rates of 70% would only receive 31 paise for each rupee increase (the comparable estimate using state variation was 28 paise). As with the state-level analysis we find little evidence of an impact of minimum wages on employment.

The key findings that minimum wages increase wages and consumption in India, without effecting employment, with effects that are muted when compliance is low, are robust to the range of alternative specifications and state comparisons considered here.

## 7. Conclusion

Minimum wages are increasingly being used in developing countries as a policy measure to combat exploitation of workers and raise living standards. However, such legislation can only be effective if enforced correctly. Simply legislating for a minimum wage is not sufficient to

make it happen. Yet in many developing countries there is a substantial difference between *de jure* and *de facto* regulation. We examine the consequences of imperfect compliance by looking at the heterogeneous effects of minimum wages across compliance regimes in India from 1999-2011. We show that minimum wages have a positive effect on wages. Furthermore, we find little evidence of an effect of minimum wages on employment. As a result these higher wages translate into higher consumption. However, compliance matters. The beneficial pass-through of higher minimum wages to wages and consumption is mitigated in low compliance regimes.

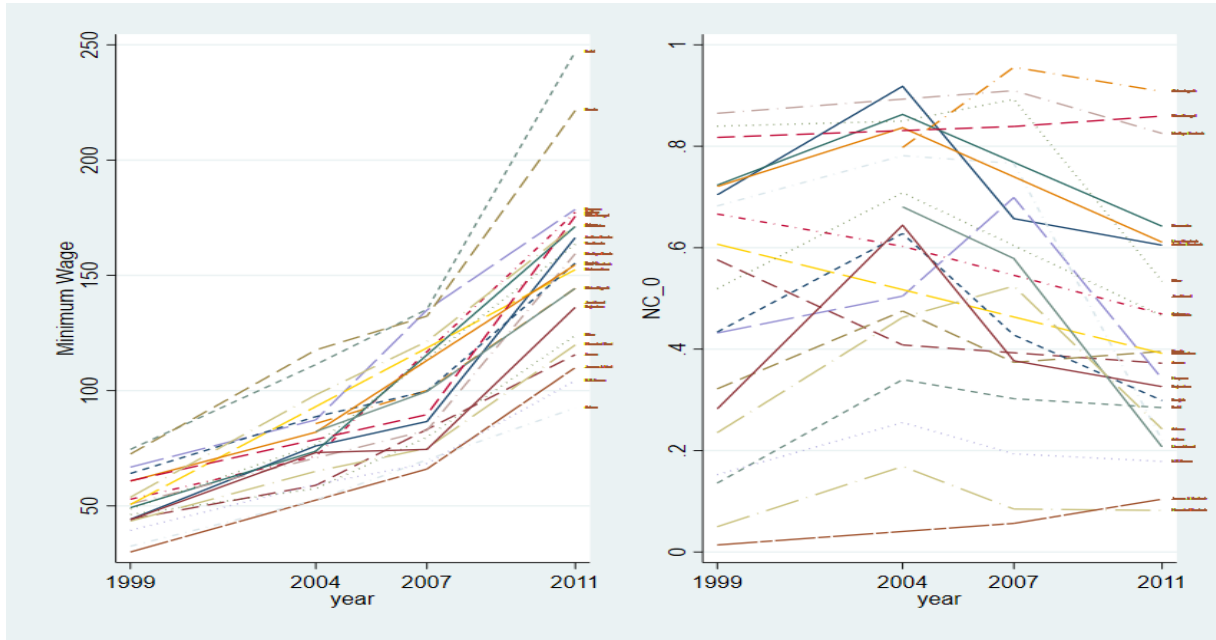
Given these results it is essential that labor market reform includes effective regulation and enforcement regimes. Such initiatives may include a reversal of the relaxation of labour market inspections that has occurred in recent years, developing a more effective system of penalties and sanctions and further developing the role of government as an employer of last resort. Only once these issues are addressed will workers fully recoup the benefits of higher minimum wages.

## References

- ADDISON, J. T., M. L. BLACKBURN, and C. D. COTTI (2015): "On the Robustness of Minimum Wage Effects: Geographically-Disparate Trends and Job Growth Equations," *IZA Journal of Labor Economics*, 4, 24.
- ALLEGRETTO, S., A. DUBE, M. REICH, and B. ZIPPERER (2017): "Credible Research Designs for Minimum Wage Studies: A Response to Neumark, Salas, and Wascher," *ILR Review*, 70, 559-592.
- ALMEIDA, R., and P. CARNEIRO (2009): "Enforcement of Labor Regulation and Firm Size," *Journal of Comparative Economics*, 37, 28-46.
- ANANT, T., and K. SUNDARAM (1998): "Wage Policy in India: A Review.," *The Indian Journal of Labour Economics*, 41 ( October – December), 815 – 34.
- ASHENFELTER, O., and R. S. SMITH (1979): "Compliance with the Minimum Wage Law," *Journal of Political Economy*, 87, 333-350.
- BASU, A., N. CHAU, and R. KANBUR (2010): "Turning a Blind Eye: Costly Enforcement, Credible Commitment and Minimum Wage Laws," *Economic Journal*, 120, 244-269.
- BELSER, P., and U. M. A. RANI (2011): "Extending the Coverage of Minimum Wages in India: Simulations from Household Data," *Economic and Political Weekly*, 46, 47-55.
- BESLEY, T., and R. BURGESS (2004): "Can Labor Regulation Hinder Economic Performance? Evidence from India," *The Quarterly Journal of Economics*, 119, 91-134.
- BHORAT, H., R. KANBUR, and N. MAYET (2012): "Estimating the Causal Effect of Enforcement on Minimum Wage Compliance: The Case of South Africa," *Review of Development Economics*, 16, 608-623.
- (2013): "A Note on Measuring the Depth of Minimum Wage Violation," *LABOUR*, 27, 192-197.
- BHORAT, H., R. KANBUR, and B. STANWIX (2019): "Compliance with Labor Laws in Developing Countries," *IZA World of Labor*, 80.
- BINSWANGER-MKHIZE, H. (2013): "The Stunted Structural Transformation of the Indian Economy: Agriculture, Manufacturing and the Rural Non-Farm Sector," *Economic and Political Weekly*, 48, 5-13.
- BOSCH, M., and M. MANACORDA (2010): "Minimum Wages and Earnings Inequality in Urban Mexico," *American Economic Journal-Applied Economics*, 2, 128-149.
- CARD, D. (1992): "Using Regional Variation in Wages to Measure the Effects of the Federal Minimum Wage," *Industrial and Labor Relations Review*, 46, 22-37.
- CHANG, Y.-M., and I. EHRLICH (1985): "On the Economics of Compliance with the Minimum Wage Law," *Journal of Political Economy*, 93, 84-91.
- CLEMENS, J., and M. STRAIN (2020): "Understanding "Wage Theft": Evasion and Avoidance to Minimum Wage Increases."
- DINKELMAN, T., and V. RANCHHOD (2012): "Evidence on the Impact of Minimum Wage Laws in an Informal Sector: Domestic Workers in South Africa," *Journal of Development Economics*, 99, 27-45.
- DUBE, A. (2019): "Impacts of Minimum Wages: Review of the International Evidence," *HM Treasury Report*.
- FOSTER, J., J. GREER, and E. THORBECKE (1984): "A Class of Decomposable Poverty Measures," *Econometrica*, 52, 761-766.
- GINDLING, T., and K. TERRELL (2007): "The Effects of Multiple Minimum Wages Throughout the Labor Market: The Case of Costa Rica," *Labour Economics*, 14, 485-511.
- (2009): "Minimum Wages, Wages and Employment in Various Sectors in Honduras," *Labour Economics*, 16, 291-303.
- HAM, A. (2015): "Minimum Wage Violations in Honduras," *IZA Journal of Labor & Development*, 4, 22.
- KANBUR, R., and L. RONCONI (2018): "Enforcement Matters: The Effective Regulation of Labour," *International Labour Review*, 157, 331-356.

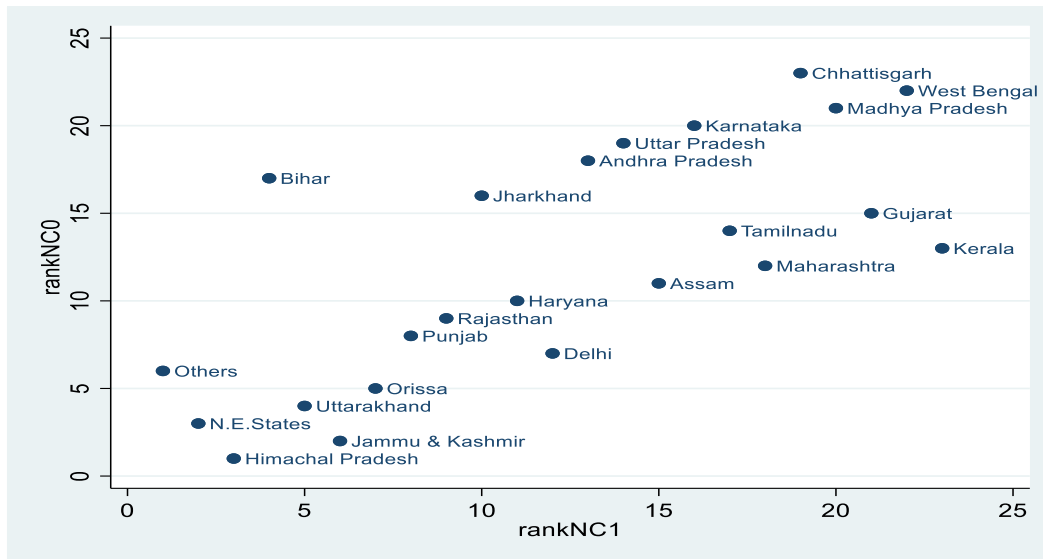
- KANBUR, R., L. RONCONI, and L. WEDENOJA (2013): "Labour Law Violations in Chile," *International Labour Review*, 152, 431-444.
- KANNAN, K. P., and G. RAVEENDRAN (2009): "Growth Sans Employment: A Quarter Century of Jobless Growth in India's Organised Manufacturing," *Economic and Political Weekly*, 44, 80-91.
- LEMONS, S. (2007): "Minimum Wage Effects across the Private and Public Sectors in Brazil," *Journal of Development Studies*, 43, 700-720.
- MEER, J., and J. WEST (2016): "Effects of the Minimum Wage on Employment Dynamics," *The Journal of Human Resources*, 51, 500-522.
- MENON, N., and Y. V. D. M. RODGERS (2017): "The Impact of the Minimum Wage on Male and Female Employment and Earnings in India," *Asian Development Review*, 34, 28-64.
- NEUMARK, D., W. CUNNINGHAM, and L. SIGA (2006): "The Effects of the Minimum Wage in Brazil on the Distribution of Family Incomes: 1996-2001," *Journal of Development Economics*, 80, 136-159.
- NEUMARK, D., J. SALAS, and W. WASCHER (2014): "Revisiting the Minimum Wage-Employment Debate: Throwing out the Baby with the Bathwater?," *ILR Review*, 67, 608-648.
- NEUMARK, D., and W. WASCHER (1992): "Employment Effects of Minimum and Subminimum Wages: Panel Data on State Minimum Wage Laws," *Industrial and Labor Relations Review*, 46, 55-81.
- PAPOLA, T. S. (2013): "economic Growth and Employment Linkages: The Indian Experience.," *Institute for Studies in Industrial Development*.
- PAPOLA, T. S., and K. P. KANNAN (2017): "Towards an India Wage Report," *International Labour Organization*.
- RANI, U., P. BELSER, M. OELZ, and S. RANJBAR (2013): "Minimum Wage Coverage and Compliance in Developing Countries," *International Labour Review*, 152, 381-410.
- RONCONI, L. (2010): "Enforcement and Compliance with Labor Regulations in Argentina," *ILR Review*, 63, 719-736.
- SARKAR, S., and B. S. MEHTA (2010): "Income Inequality in India: Pre- and Post-Reform Periods," *Economic and Political Weekly*, 45, 45-55.
- SOUNDARARAJAN, V. (2019): "Heterogeneous Effects of Imperfectly Enforced Minimum Wages in Low-Wage Labor Markets," *Journal of Development Economics*, 140, 355-374.
- SQUIRE, L., and S. SUTHIWART-NARUEPUT (1997): "The Impact of Labor Market Regulations," *World Bank Economic Review*, 11, 119-43.
- STROBL, E., and F. WALSH (2003): "Minimum Wages and Compliance: The Case of Trinidad and Tobago," *Economic Development and Cultural Change*, 51, 427-450.
- SUNDAR, S. (2010): "Evaluation of Labour Market Inspection Reforms in India," *The Indian Journal of Labour Economics*, 53, 517-535.
- THOMAS, J. J. (2012): "Surveying the Changes in India's Labour Market During the 2000s," *Economic and Political Weekly*, 7, 39-51.
- YAMADA, K. (2016): "Tracing the Impact of Large Minimum Wage Changes on Household Welfare in Indonesia," *European Economic Review*, 87, 287-303.
- YANIV, G. (2001): "Minimum Wage Noncompliance and the Employment Decision," *Journal of Labor Economics*, 19, 596-603.

**Figure 1: Minimum Wage and Noncompliance across States and Time**



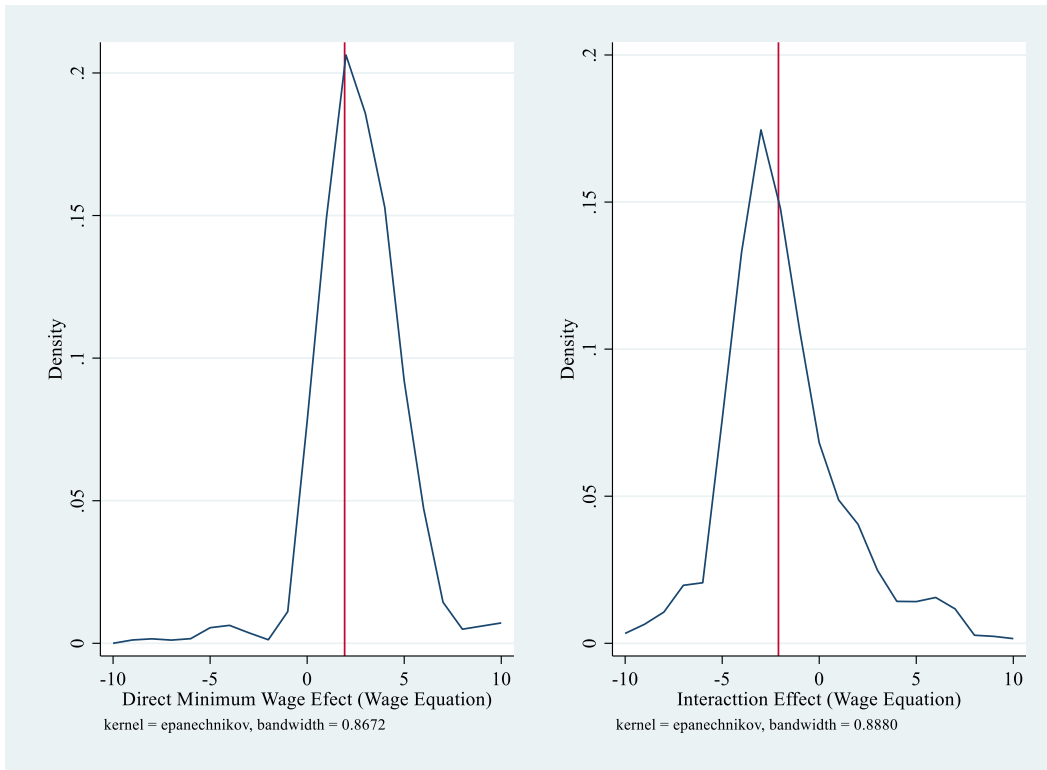
**Figure 2**

States ranked by Head Count non-compliance ( $NC^0$ ) and Depth of non-compliance ( $NC^1/NC^0$ )

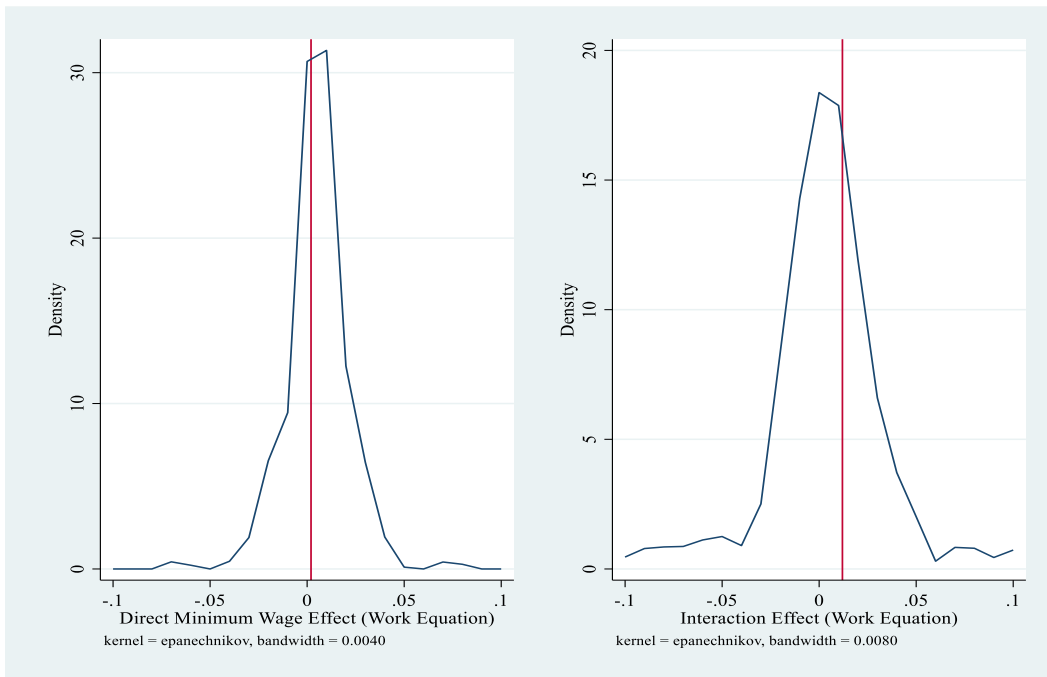




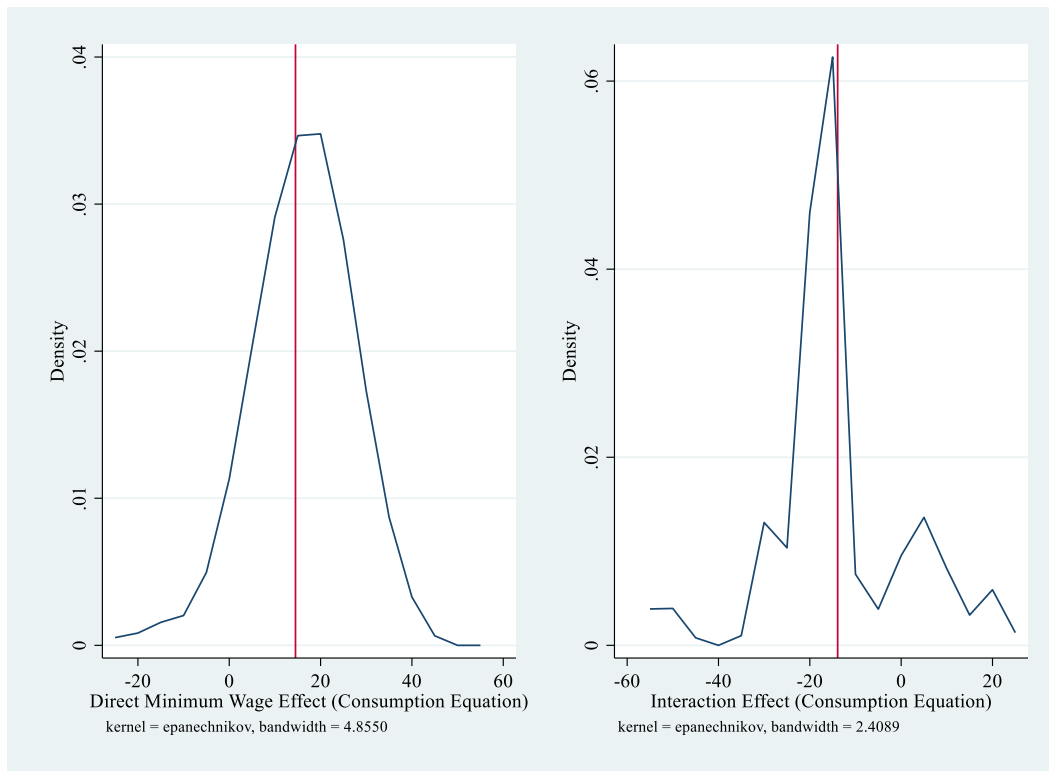
**Figure 3a: Density of pairwise estimates (Wage Equation)**



**Figure 3b: Density of pairwise estimates (Work Equation)**



**Figure 3c: Density of pairwise estimates (Consumption Equation)**



**Table 1**  
**Summary Statistics**

	1999	2004	2007	2011	Total
Minimum Wage	52.61 (16.50)	78.59 (21.54)	95.86 (26.80)	153.76 (42.58)	
Daily Wage	58.44 (88.92)	76.11 (92.53)	91.93 (103.0)	194.7 (257.6)	90.91 (150.9)
Monthly per capita Consumption	461.8 (375.7)	620.9 (555.6)	700.1 (552.0)	1414.2 (1277.5)	693.2 (782.1)
Weekly Work Intensity	5.867 (1.512)	5.788 (1.559)	5.875 (1.560)	6.308 (1.326)	5.947 (1.498)
Age in Years	34.63 (12.28)	34.69 (12.30)	35.31 (12.32)	36.47 (12.44)	35.07 (12.34)
Scheduled Tribes (ST)	0.129 (0.335)	0.0881 (0.283)	0.148 (0.355)	0.101 (0.301)	0.120 (0.325)
Scheduled Castes (SC)	0.311 (0.463)	0.320 (0.467)	0.316 (0.465)	0.280 (0.449)	0.307 (0.461)
Other Backward Castes (OBC)	0.315 (0.464)	0.382 (0.486)	0.309 (0.462)	0.355 (0.479)	0.330 (0.470)
Muslin	0.0761 (0.265)	0.0701 (0.255)	0.0924 (0.290)	0.108 (0.311)	0.0833 (0.276)
Hindu Forward	0.157 (0.363)	0.127 (0.333)	0.121 (0.326)	0.145 (0.352)	0.148 (0.355)
Christian Forward	0.00774 (0.0877)	0.00694 (0.0830)	0.00749 (0.0862)	0.00697 (0.0832)	0.00747 (0.0861)
Other Forward	0.00452 (0.0671)	0.00568 (0.0751)	0.00612 (0.0780)	0.00397 (0.0629)	0.00469 (0.0683)
Regular Worker	0.189 (0.392)	0.223 (0.416)	0.172 (0.378)	0.264 (0.441)	0.206 (0.405)
Casual Worker	0.811 (0.392)	0.777 (0.416)	0.828 (0.378)	0.736 (0.441)	0.794 (0.405)
Never Married	0.177 (0.382)	0.199 (0.400)	0.178 (0.382)	0.185 (0.388)	0.181 (0.385)
Currently Married	0.760 (0.427)	0.732 (0.443)	0.763 (0.425)	0.751 (0.432)	0.755 (0.430)
Widowed	0.0536 (0.225)	0.0596 (0.237)	0.0516 (0.221)	0.0574 (0.233)	0.0549 (0.228)
Divorced/Separated	0.00969 (0.0980)	0.00862 (0.0924)	0.00775 (0.0877)	0.00673 (0.0817)	0.00879 (0.0934)
Male	0.691 (0.462)	0.715 (0.451)	0.736 (0.441)	0.759 (0.428)	0.711 (0.453)
Female	0.309 (0.462)	0.285 (0.451)	0.264 (0.441)	0.241 (0.428)	0.289 (0.453)
Unskilled	0.877 (0.329)	0.853 (0.354)	0.874 (0.332)	0.776 (0.417)	0.854 (0.354)
Skilled	0.123	0.147	0.126	0.224	0.146

	(0.329)	(0.354)	(0.332)	(0.417)	(0.354)
Rural	0.816 (0.387)	0.780 (0.414)	0.841 (0.366)	0.728 (0.445)	0.797 (0.403)
Urban	0.184 (0.387)	0.220 (0.414)	0.159 (0.366)	0.272 (0.445)	0.203 (0.403)
Agriculture & allied	0.668 (0.471)	0.558 (0.497)	0.583 (0.493)	0.413 (0.492)	0.596 (0.491)
Mining & quarrying	0.00977 (0.0984)	0.0120 (0.109)	0.0130 (0.113)	0.00956 (0.0973)	0.0103 (0.101)
Manufacturing	0.102 (0.303)	0.139 (0.346)	0.0898 (0.286)	0.135 (0.341)	0.112 (0.315)
Electricity, Gas & Water Supply	0.00364 (0.0602)	0.00471 (0.0685)	0.00499 (0.0705)	0.00506 (0.0709)	0.00417 (0.0644)
Construction	0.104 (0.305)	0.166 (0.372)	0.202 (0.401)	0.263 (0.440)	0.152 (0.359)
Trade, Rest & Hotels	0.0229 (0.150)	0.0275 (0.164)	0.0267 (0.161)	0.0367 (0.188)	0.0266 (0.161)
Transport Storage & Communication	0.0167 (0.128)	0.0156 (0.124)	0.0197 (0.139)	0.0242 (0.154)	0.0183 (0.134)
Finance Insurance & Real Estate	0.00200 (0.0446)	0.00456 (0.0673)	0.00492 (0.0700)	0.0136 (0.116)	0.00489 (0.0698)
Community Social & Personal Services	0.0707 (0.256)	0.0727 (0.260)	0.0559 (0.230)	0.100 (0.300)	0.0755 (0.264)

**Table 2**

Non-Compliance rates for all workers aged 15 and above

	NC <sub>0</sub>	NC <sub>1</sub> /NC <sub>0</sub>	NC <sub>2</sub> /NC <sub>0</sub>
1999	65.39	34.95	15.86
2004	74.08	37.16	17.81
2007	70.05	32.55	13.87
2011	53.24	31.00	13.27

Table 3

## Non-Compliance rates by Industry

	1999	2004	2007	2011
NC0 Agriculture & allied	76.28	84.68	80.66	58.30
NC1/NC0 Agriculture & allied	34.96	38.23	32.83	28.77
NC2/NC0 Agriculture & allied	15.60	18.33	13.84	11.35
NC0 Mining & quarrying	46.23	74.95	63.22	70.24
NC1/NC0 Mining & quarrying	33.10	36.32	32.62	33.66
NC2/NC0 Mining & quarrying	14.91	16.95	13.62	14.57
NC0 Manufacturing	50.44	66.01	58.17	52.13
NC1/NC0 Manufacturing	36.46	38.41	36.39	33.93
NC2/NC0 Manufacturing	17.93	19.88	18.00	15.85
NC0 Electricity, Gas & Water Supply	2.68	4.56	10.38	9.76
NC1/NC0 Electricity, Gas & Water Supply	9.36	34.70	30.97	28.14
NC2/NC0 Electricity, Gas & Water Supply	1.94	15.56	11.85	12.83
NC0 Construction	54.77	73.98	64.31	56.39
NC1/NC0 Construction	30.83	30.87	28.85	29.87
NC2/NC0 Construction	13.15	12.75	10.98	12.16
NC0 Trade, Rest & Hotels	52.06	69.64	57.50	54.66

NC1/NC0 Trade, Rest & Hotels	40.09	40.92	36.91	35.93
NC2/NC0 Trade, Rest & Hotels	21.14	21.92	18.25	17.49
NC0 Transport Storage & Communication	8.84	20.49	28.15	23.98
NC1/NC0 Transport Storage & Communication	35.48	29.89	25.12	27.69
NC2/NC0 Transport Storage & Communication	15.97	14.14	9.75	10.63
NC0 Finance Insurance & Real Estate	23.02	46.66	49.34	39.56
NC1/NC0 Finance Insurance & Real Estate	26.49	37.19	30.26	34.94
NC2/NC0 Finance Insurance & Real Estate	9.80	20.55	12.67	16.30
NC0 Services	24.62	27.82	28.77	34.65
NC1/NC0 Services	40.88	42.87	40.24	41.94
NC2/NC0 Services	23.01	23.69	22.41	23.37

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**Table 4:**

## Determinants of Noncompliance

	(1) NC <sub>0</sub> Probit Marginal Effects	(2) NC <sub>1</sub> OLS: Sample of Noncompliers	(3) NC <sub>2</sub> OLS: Sample of Noncompliers
main			
Minimum Wage	0.018*** (0.002)	0.001+ (0.001)	0.001+ (0.000)
lnPopState	0.040 (0.034)	0.006 (0.008)	0.003 (0.006)
lnGDPState	-0.818** (0.278)	0.064 (0.083)	0.084 (0.054)
age	-0.055*** (0.005)	-0.005*** (0.000)	-0.004*** (0.000)
c.age#c.age	0.001*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
Casual worker	0.362*** (0.100)	-0.045** (0.012)	-0.041*** (0.010)
SC	-0.173* (0.073)	-0.005 (0.008)	-0.001 (0.006)
OBC	-0.165* (0.073)	0.002 (0.009)	0.004 (0.006)
Muslim	-0.180* (0.077)	0.008 (0.007)	0.010* (0.005)
Hindu	-0.312*** (0.076)	-0.010 (0.009)	-0.004 (0.006)
Christian	-0.166 (0.137)	-0.068** (0.019)	-0.046*** (0.012)
Other	-0.435*** (0.108)	0.005 (0.017)	-0.002 (0.012)
Female	0.923*** (0.119)	0.111*** (0.009)	0.082*** (0.007)
Married	-0.111** (0.034)	-0.018*** (0.004)	-0.015*** (0.003)



Widowed	-0.018 (0.053)	-0.008 (0.007)	-0.007 (0.005)
Divorced	0.070 (0.066)	-0.011 (0.011)	-0.010 (0.009)
Urban	-0.334*** (0.075)	-0.011 (0.011)	-0.004 (0.009)
Skilled	-0.508*** (0.045)	-0.008 (0.005)	-0.004 (0.004)
_cons	7.971** (2.431)	-0.309 (0.727)	-0.637 (0.465)
<i>N</i>	179337	96931	96931

Standard errors in parentheses  
<sup>+</sup>  $p < .1$ , \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

**Table 5:**  
**Minimum Wage and Compliance Effects**

	(1) dailywage	(2) dailywage	(3) week_int	(4) week_int	(5) Cons_PC	(6) Cons_PC
Minimum Wage	0.323 (0.514)	1.438*** (0.346)	0.00146 (0.00294)	0.000412 (0.00354)	7.694** (2.196)	14.60*** (1.402)
NC <sub>0</sub>	9.680 (40.58)	126.6*** (31.56)	-0.443 (0.329)	-0.553 (0.364)	-246.0 (219.7)	478.2** (156.8)
Minimum Wage # NC		-1.651*** (0.237)		0.00155 (0.00246)		-10.23*** (1.054)
lnPopState	4.944 (4.054)	3.787* (1.699)	0.0193 (0.0361)	0.0204 (0.0366)	59.68* (26.78)	52.51*** (12.73)
lnGDPState	17.27 (35.14)	-43.57 (24.99)	0.404 (0.353)	0.461 (0.379)	193.3 (245.6)	-183.6* (86.06)
age	1.751*** (0.382)	1.792*** (0.385)	0.0161** (0.00455)	0.0160** (0.00455)	2.535 (2.363)	2.791 (2.300)
c.age#c.age	-0.0115* (0.00454)	-0.0120* (0.00458)	-0.000232*** (0.0000607)	-0.000232*** (0.0000607)	0.0130 (0.0265)	0.0102 (0.0257)
Casual worker	-52.96*** (7.153)	-52.78*** (7.098)	-1.078*** (0.105)	-1.078*** (0.105)	-269.3*** (25.88)	-268.2*** (26.08)
SC	-1.189 (2.038)	-1.156 (1.877)	-0.125* (0.0563)	-0.125* (0.0561)	6.136 (12.10)	6.338 (11.06)
OBC	-3.642 (2.370)	-3.553 (2.121)	-0.0724 (0.0518)	-0.0725 (0.0516)	36.71** (11.55)	37.26** (10.17)
Muslim	-4.803 (3.113)	-4.323 (3.041)	-0.0357 (0.0515)	-0.0362 (0.0513)	-7.472 (14.68)	-4.492 (14.36)
Hindu	16.84** (4.570)	17.35*** (4.515)	-0.0990 (0.0690)	-0.0995 (0.0685)	154.0*** (16.22)	157.2*** (15.37)
Christian	15.19 (8.986)	17.57 (8.642)	-0.0317 (0.0990)	-0.0339 (0.0971)	319.1*** (68.14)	333.8*** (68.15)
Other	55.70*** (13.00)	58.51*** (13.94)	-0.121 (0.0855)	-0.124 (0.0841)	518.2** (160.5)	535.5** (166.8)
Female	-19.58***	-20.24***	-0.413***	-0.413***	30.69**	26.58**

	(3.856)	(3.815)	(0.0673)	(0.0665)	(9.282)	(8.843)
Married	13.90 <sup>***</sup> (1.718)	13.72 <sup>***</sup> (1.733)	-0.0503 <sup>*</sup> (0.0201)	-0.0501 <sup>*</sup> (0.0201)	-64.09 <sup>**</sup> (18.71)	-65.19 <sup>**</sup> (18.14)
Widowed	-2.527 (2.905)	-2.665 (2.893)	0.0585 (0.0328)	0.0587 (0.0328)	-58.45 <sup>*</sup> (24.32)	-59.31 <sup>*</sup> (23.83)
Divorced	4.137 (2.259)	4.061 (2.234)	0.134 <sup>**</sup> (0.0418)	0.134 <sup>**</sup> (0.0419)	-18.66 (30.55)	-19.13 (29.97)
Urban	31.82 <sup>***</sup> (3.274)	31.26 <sup>***</sup> (3.372)	0.0970 <sup>***</sup> (0.0248)	0.0976 <sup>***</sup> (0.0251)	254.6 <sup>***</sup> (15.60)	251.1 <sup>***</sup> (16.19)
Skilled	82.29 <sup>***</sup> (7.254)	81.78 <sup>***</sup> (7.293)	0.0121 (0.0223)	0.0126 (0.0221)	340.9 <sup>***</sup> (21.04)	337.8 <sup>***</sup> (21.08)
_cons	-215.1 (308.7)	310.0 (227.5)	2.864 (3.220)	2.371 (3.455)	-2212.7 (2114.9)	1040.0 (774.0)
<i>N</i>	179337	179337	179337	179337	179336	179336

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Table 6a**  
**Casual versus Regular Workers**

	(1) Dailywage	(2) Dailywage	(3) week_int	(4) week_int	(5) Cons_PC	(6) Cons_PC
	Casual	Regular	Casual	Regular	Casual	Regular
Minimum Wage	0.580 (0.635)	1.165** (0.401)	-0.000516 (0.000844)	0.000667 (0.00447)	9.046*** (1.659)	11.13*** (1.268)
NC <sub>0</sub>	148.9* (58.90)	50.04* (20.46)	-0.212 (0.146)	-0.624 (0.473)	103.0 (206.7)	198.4 (131.6)
Minimum Wage # NC	-1.496** (0.507)	-0.882** (0.280)	0.00118 (0.000710)	0.00122 (0.00321)	-5.932*** (1.434)	-6.046*** (0.890)
_cons	141.4 (831.8)	5.966 (145.2)	5.635** (1.543)	0.717 (3.954)	-3730.0* (1696.5)	67.48 (630.4)
N	58938	120399	58938	120399	58938	120398

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Table 6b**  
**Males versus Females**

	(1) Dailywage	(2) Dailywage	(3) week_int	(4) week_int	(5) Cons_PC	(6) Cons_PC
	Male	Female	Male	Female	Male	Female
Minimum Wage	1.641*** (0.249)	1.247 (0.742)	0.000131 (0.00312)	0.00463 (0.00431)	14.95*** (1.635)	13.64*** (2.566)
NC0	124.1** (35.28)	98.52* (42.60)	-0.567 (0.358)	-0.619 (0.399)	404.8* (174.6)	597.7* (230.9)
Minimum Wage # NC	-1.746*** (0.177)	-1.301* (0.511)	0.00217 (0.00215)	-0.000317 (0.00351)	-10.09*** (1.086)	-10.15*** (2.192)
_cons	255.6 (198.4)	309.2 (370.8)	2.030 (2.902)	2.503 (4.207)	1036.5 (914.0)	663.5 (1419.0)
N	134312	45025	134312	45025	134311	45025

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Table 6c**  
**Rural versus Urban**

	(1) Dailywage	(2) Dailywage	(3) week_int	(4) week_int	(5) Cons_PC	(6) Cons_PC
	Rural	Urban	Rural	Urban	Rural	Urban
Minimum Wage	0.856*	1.391*	0.000257	0.00250	11.37***	10.12***
	(0.330)	(0.622)	(0.00468)	(0.00202)	(1.475)	(1.803)
NC0	82.81**	142.1*	-0.598	-0.241	309.8	220.8
	(24.12)	(64.36)	(0.428)	(0.213)	(167.2)	(254.1)
Minimum Wage # NC	-1.020***	-2.002***	0.00138	0.000601	-7.137***	-8.638***
	(0.223)	(0.483)	(0.00327)	(0.00161)	(1.076)	(1.547)
_cons	26.77	865.3	1.567	6.970*	758.1	-815.2
	(130.3)	(686.3)	(4.069)	(2.599)	(802.5)	(1962.8)
N	120495	58842	120495	58842	120494	58842

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 6d  
Young versus Old

	(1) Dailywage	(2) Dailywage	(3) week_int	(4) week_int	(5) Cons_PC	(6) Cons_PC
	Young	Old	Young	Old	Young	Old
Minimum Wage	1.058*** (0.115)	1.530*** (0.399)	0.000417 (0.00535)	0.000404 (0.00310)	16.37*** (1.471)	14.04*** (1.527)
NC0	29.56* (10.95)	150.6*** (35.25)	-0.375 (0.475)	-0.600 (0.341)	237.4 (171.9)	548.0** (160.2)
Minimum Wage # NC	-0.806*** (0.0769)	-1.843*** (0.276)	0.000537 (0.00306)	0.00169 (0.00225)	-9.843*** (1.155)	-10.29*** (1.129)
_cons	-60.93 (91.30)	341.9 (284.2)	1.647 (4.697)	3.170 (3.070)	501.4 (912.4)	1206.2 (903.7)
N	43331	136006	43331	136006	43331	136005

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Table 7**  
**Minimum Wage and Compliance Effects with State-Specific Trends**

	(1) dailywage	(2) dailywage	(3) week_int	(4) week_int	(5) Cons_PC	(6) Cons_PC
Minimum Wage	-0.0380 (0.736)	2.515* (1.210)	0.00790 (0.00504)	0.00919 (0.0106)	3.042 (3.129)	17.98*** (1.803)
NC <sub>0</sub>	5.694 (50.14)	148.8*** (38.45)	-0.884* (0.389)	-0.812 (0.517)	-87.90 (218.2)	749.5*** (164.3)
Minimum Wage # NC <sub>0</sub>		-2.483** (0.805)		-0.00126 (0.00669)		-14.52*** (1.358)
lnPopState	11.01* (4.361)	8.289 (5.201)	-0.0321 (0.0710)	-0.0335 (0.0720)	66.53* (29.20)	50.59* (23.20)
lnGDPState	-23.02 (37.71)	-14.49 (35.54)	0.134 (0.724)	0.139 (0.724)	-469.6 (285.8)	-419.7* (186.4)
Age	1.792*** (0.386)	1.802*** (0.387)	0.0163** (0.00453)	0.0163** (0.00453)	2.807 (2.305)	2.862 (2.300)
c.age#c.age	-0.0119* (0.00460)	-0.0120* (0.00461)	-0.000235*** (0.0000605)	-0.000235*** (0.0000605)	0.0102 (0.0258)	0.00955 (0.0257)
Casual worker	-52.92*** (7.124)	-52.86*** (7.135)	-1.083*** (0.105)	-1.083*** (0.105)	-267.3*** (26.16)	-266.9*** (26.22)
SC	-0.861 (1.770)	-0.803 (1.734)	-0.125* (0.0557)	-0.125* (0.0558)	7.313 (10.88)	7.653 (10.86)
OBC	-3.110 (1.947)	-3.052 (1.924)	-0.0773 (0.0508)	-0.0773 (0.0509)	39.14*** (9.806)	39.48*** (9.837)
Muslim	-3.902 (2.950)	-3.983 (2.952)	-0.0396 (0.0504)	-0.0397 (0.0503)	-2.191 (14.01)	-2.665 (14.03)
5.soc_rel	17.77*** (4.375)	17.83*** (4.399)	-0.102 (0.0674)	-0.102 (0.0675)	158.8*** (15.24)	159.1*** (15.20)
Christian	18.75* (8.358)	18.70* (8.341)	-0.0185 (0.0968)	-0.0185 (0.0968)	332.7*** (66.72)	332.4*** (66.85)



Other	60.17*** (14.54)	59.66*** (14.05)	-0.130 (0.0841)	-0.131 (0.0839)	538.2** (167.1)	535.2** (164.3)
Female	-20.16*** (3.800)	-20.20*** (3.814)	-0.412*** (0.0655)	-0.412*** (0.0654)	25.85** (8.842)	25.59** (8.824)
Married	13.75*** (1.784)	13.65*** (1.774)	-0.0535* (0.0198)	-0.0535* (0.0198)	-65.48** (18.20)	-66.03** (18.14)
Widowed	-2.657 (2.930)	-2.758 (2.905)	0.0578 (0.0330)	0.0577 (0.0330)	-60.18* (23.87)	-60.77* (23.82)
Divorced	4.067 (2.291)	4.005 (2.302)	0.131** (0.0425)	0.131** (0.0425)	-19.40 (30.03)	-19.76 (29.96)
Urban	31.08*** (3.367)	31.06*** (3.335)	0.0954*** (0.0248)	0.0954*** (0.0248)	251.2*** (15.98)	251.0*** (15.96)
Skilled	81.88*** (7.334)	81.84*** (7.310)	0.0125 (0.0214)	0.0125 (0.0214)	337.1*** (21.21)	336.9*** (21.04)
_cons	16099.1*** (1210.9)	-510.0 (4940.9)	30.49* (13.04)	22.09 (45.14)	98007.1*** (6775.3)	847.0 (10769.4)
<i>N</i>	179337	179337	179337	179337	179336	179336

**Table 8**  
**Instrumental Variable Results**

	(1) dailywage	(2) week_int	(3) Cons_PC
Minimum Wage	0.461 (0.718)	0.00919 (0.0121)	11.87** (3.831)
NC <sub>0</sub>	257.3* (131.2)	-2.505 (2.016)	357.1 (823.7)
Minimum Wage # NC	-1.337** (0.497)	0.00269 (0.00671)	-7.001*** (1.247)
_cons	-405.8 (522.5)	8.717 (9.671)	-260.4 (2937.1)
<i>N</i>	161298	161298	161297

Standard errors in parentheses  
\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Table 9**

**Pairwise estimates Daily Wage Regression**

	(1)	(2)	(3)
	Overall Effect	Simple Mean	Weighted Mean
Daily Wage			
Minimum Wage	1.93	2.83	2.87
Minimum Wage#NC <sub>0</sub>	-2.10	-0.04	-2.19
Work Intensity			
Minimum Wage	0.002	-.0278	.004
Minimum Wage#NC <sub>0</sub>	0.012	.0347	.002
Consumption			
Minimum Wage	14.50	19.52	17.35
Minimum Wage#NC <sub>0</sub>	-13.93	-1.33	-13.91

**Table 10:**  
**Results using variation by Skill category**

	(1) dailywage	(2) Dailywage	(3) week_int	(4) week_int	(5) Cons_PC	(6) Cons_PC
Minimum Wage	0.769** (0.150)	1.683*** (0.154)	0.000220 (0.000587)	-0.000128 (0.000681)	4.392*** (0.600)	8.373*** (0.725)
NC0	-29.34** (11.21)	144.7*** (15.99)	-0.265*** (0.0760)	-0.332** (0.111)	-1.340 (56.68)	757.0*** (100.5)
c.minwage_3# c.noncomplian ce0		-1.968*** (0.141)		0.000750 (0.000917)		-8.576*** (0.799)
_cons	-128.3 (186.2)	266.3 (162.7)	1.252 (2.150)	1.102 (2.145)	-3720.0** (1136.9)	-2000.9 (1123.2)
<i>N</i>	179363	179363	179363	179363	179362	179362

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

## Appendix:

**Table 1**

Non-Compliance rates for Male and Female workers aged 15 and above

	Men NC <sub>0</sub>	Men NC <sub>1</sub> /NC <sub>0</sub>	Men NC <sub>2</sub> /NC <sub>0</sub>	Women NC <sub>0</sub>	Women NC <sub>1</sub> /NC <sub>0</sub>	Women NC <sub>2</sub> /NC <sub>0</sub>
1999	55.45	30.92	13.01	87.63	40.65	19.89
2004	68.08	31.67	13.44	89.13	47.69	26.18
2007	64.31	29.77	11.73	86.08	38.33	18.35
2011	46.62	27.79	11.03	74.06	37.35	17.70

Table 2

Non-Compliance rates for Rural and Urban workers aged 15 and above

	Rural NC <sub>0</sub>	Rural NC <sub>1</sub> /NC <sub>0</sub>	Rural NC <sub>2</sub> /NC <sub>0</sub>	Urban NC <sub>0</sub>	Urban NC <sub>1</sub> /NC <sub>0</sub>	Urban NC <sub>2</sub> /NC <sub>0</sub>
1999	71.87	35.06	15.85	36.62	33.94	15.92
2004	80.37	37.75	18.13	51.80	33.92	16.05
2007	74.77	32.62	13.84	45.03	31.90	14.12
2011	57.81	30.47	12.76	41.04	32.97	15.16

Table 3

Non-Compliance rates for Casual and Regular workers aged 15 and above

	Casual NC <sub>0</sub>	Casual NC <sub>1</sub> /NC <sub>0</sub>	Casual NC <sub>2</sub> /NC <sub>0</sub>	Regular NC <sub>0</sub>	Regular NC <sub>1</sub> /NC <sub>0</sub>	Regular NC <sub>2</sub> /NC <sub>0</sub>
1999	73.04	34.99	15.77	32.57	34.59	16.75
2004	82.69	37.25	17.69	44.12	36.63	18.55
2007	76.49	32.35	13.58	39.12	34.37	16.58
2011	58.92	30.18	12.54	37.40	34.59	16.46

Table 4

## Non-Compliance rates for Skilled and Unskilled workers aged 15 and above

	Skilled NC <sub>0</sub>	Skilled NC <sub>1</sub> /NC <sub>0</sub>	Skilled NC <sub>2</sub> /NC <sub>0</sub>	Unskilled NC <sub>0</sub>	Unskilled NC <sub>1</sub> /NC <sub>0</sub>	Unskilled NC <sub>2</sub> /NC <sub>0</sub>
1999	27.91	33.74	15.47	70.65	35.02	15.88
2004	38.87	32.71	15.40	80.15	37.54	18.01
2007	35.56	30.44	13.19	75.02	32.69	13.92
2011	33.26	29.71	12.87	59.02	31.21	13.33

Table 5

## Non-Compliance rates by Religious Groups

	1999	2004	2007	2011
NC <sub>0</sub> ST	78.37	80.28	82.00	60.95
NC <sub>1</sub> /NC <sub>0</sub> ST	36.12	39.40	36.03	31.98
NC <sub>2</sub> /NC <sub>0</sub> ST	16.41	18.91	16.03	13.59
NC <sub>0</sub> SC	69.71	80.35	72.67	56.58
NC <sub>1</sub> /NC <sub>0</sub> SC	34.40	36.26	31.57	30.37
NC <sub>2</sub> /NC <sub>0</sub> SC	15.52	16.98	13.10	12.73
NC <sub>0</sub> OBC	65.65	75.50	70.46	53.03
NC <sub>1</sub> /NC <sub>0</sub> OBC	36.01	37.67	33.34	30.28
NC <sub>2</sub> /NC <sub>0</sub> OBC	16.63	18.27	14.58	12.90
NC <sub>0</sub> Muslim	63.21	73.22	72.70	57.89
NC <sub>1</sub> /NC <sub>0</sub> Muslim	33.91	37.03	30.20	33.00
NC <sub>2</sub> /NC <sub>0</sub> Muslim	15.36	17.83	12.00	14.74
NC <sub>0</sub> Other	48.04	52.38	48.04	39.45
NC <sub>1</sub> /NC <sub>0</sub> Other	32.86	36.29	29.25	31.78
NC <sub>2</sub> /NC <sub>0</sub> Other	14.44	17.81	12.12	13.95

**Table 6**  
**Non-Compliance rates for States**

	1999	2004	2007	2011
NC0An	70.41	91.83	65.73	60.49
NC1/NC0An	36.43	44.06	28.87	29.21
NC2/NC0An	16.64	23.03	11.57	12.39
NC0As	57.62	40.82	.	37.22
NC1/NC0As	22.44	17.98	.	31.98
NC2/NC0As	7.10	4.74	.	12.38
NC0Bi	83.97	84.96	89.26	53.38
NC1/NC0Bi	30.23	29.93	31.93	20.34
NC2/NC0Bi	12.56	11.97	12.76	8.07
NC0Ch	.	79.75	95.58	90.79
NC1/NC0Ch	.	44.91	53.78	33.09
NC2/NC0Ch	.	23.39	31.78	13.48
NC0De	13.58	34.00	30.22	28.47
NC1/NC0De	23.51	24.46	29.12	29.18
NC2/NC0De	9.13	9.56	12.23	11.56
NC0Gu	66.64	60.28	.	46.92
NC1/NC0Gu	28.99	34.13	.	33.70
NC2/NC0Gu	11.72	14.77	.	15.03
NC0Ha	43.18	50.46	69.91	34.14
NC1/NC0Ha	28.86	22.75	33.11	29.06
NC2/NC0Ha	11.34	8.80	14.65	12.7
NC0Hi	4.98	16.88	8.47	8.20
NC1/NC0Hi	29.28	19.65	25.29	19.52
NC2/NC0Hi	15.76	6.73	11.03	7.42
NC0Ja	1.39	.	5.64	10.42
NC1/NC0Ja	33.78	.	41.55	24.11
NC2/NC0Ja	17.37	.	21.26	12.06
NC0Jh	.	.	.	50.24
NC1/NC0Jh	.	.	.	28.86
NC2/NC0Jh	.	.	.	12.27
NC0Ka	72.33	86.28	.	64.22
NC1/NC0Ka	38.80	44.67	.	32.57
NC2/NC0Ka	18.71	23.24	.	14.64
NC0Ke	32.17	47.52	37.39	39.56
NC1/NC0Ke	33.56	34.58	31.23	37.16
NC2/NC0Ke	16.90	17.51	14.22	18.72
NC0Ma	86.50	.	90.97	82.53
NC1/NC0Ma	44.01	.	38.78	33.45
NC2/NC0Ma	22.56	.	17.29	14.21
NC0Mah	60.70	.	.	39.16
NC1/NC0Mah	36.48	.	.	32.93
NC2/NC0Mah	16.56	.	.	14.08
NC0Or	68.23	78.15	76.63	22.02



NC1/NC0Or	29.31	36.61	34.95	26.00
NC2/NC0Or	11.67	17.76	14.58	9.59
NC0Pu	43.37	62.80	42.79	29.85
NC1/NC0Pu	22.30	26.77	25.70	27.09
NC2/NC0Pu	8.44	10.68	10.81	12.95
NC0Ra	28.21	64.43	37.71	32.60
NC1/NC0Ra	26.02	27.16	21.71	28.14
NC2/NC0Ra	10.90	10.34	7.79	11.20
NC0Ta	51.93	70.86	.	46.55
NC1/NC0Ta	33.65	37.18	.	32.74
NC2/NC0Ta	14.97	18.33	.	14.16
NC0Up	72.06	83.66	.	61.08
NC1/NC0Up	38.91	38.05	.	29.97
NC2/NC0Up	18.84	17.86	.	12.32
NC0Ut	.	68.06	57.87	20.69
NC1/NC0Ut	.	24.57	18.26	21.46
NC2/NC0Ut	.	8.29	5.91	7.66
NC0Wb	81.75	.	83.90	85.95
NC1/NC0Wb	33.55	.	28.77	34.70
NC2/NC0Wb	14.26	.	10.69	15.31
NC0Ne	15.26	25.53	19.35	17.86
NC1/NC0Ne	24.28	28.20	23.23	14.26
NC2/NC0Ne	5.15	4.45	4.82	3.40
NC0Ot	23.53	46.25	52.43	24.23
NC1/NC0Ot	1.99	.	4.47	10.36
NC2/NC0Ot	16.64	16.74	13.52	13.22

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**Table 7**  
**Results: Wages**

	(1) dailywage	(2) dailywage	(3) dailywage	(4) dailywage	(5) dailywage	(6) dailywage
Minimum Wage	0.323 (0.514)	1.438*** (0.346)	0.224 (0.406)	1.451*** (0.320)	0.274 (0.398)	1.514*** (0.318)
NC0	9.680 (40.58)	126.6*** (31.56)				
lnPopState	4.944 (4.054)	3.787* (1.699)	4.142 (3.640)	5.810* (2.152)	4.295 (3.641)	6.772** (2.327)
lnGDPState	17.27 (35.14)	-43.57 (24.99)	16.74 (30.90)	-58.66* (27.07)	10.04 (32.25)	-67.62* (28.48)
age	1.751*** (0.382)	1.792*** (0.385)	1.755*** (0.383)	1.782*** (0.384)	1.756*** (0.383)	1.777*** (0.384)
c.age#c.age	-0.0115* (0.00454)	-0.0120* (0.00458)	-0.0115* (0.00455)	-0.0118* (0.00457)	-0.0116* (0.00455)	-0.0118* (0.00456)
Casual worker	-52.96*** (7.153)	-52.78*** (7.098)	-53.01*** (7.129)	-52.85*** (7.079)	-52.97*** (7.130)	-52.91*** (7.076)
SC	-1.189 (2.038)	-1.156 (1.877)	-1.161 (2.010)	-1.207 (1.901)	-1.140 (2.005)	-1.273 (1.922)
OBC	-3.642 (2.370)	-3.553 (2.121)	-3.663 (2.347)	-3.698 (2.170)	-3.642 (2.343)	-3.775 (2.202)
Muslim	-4.803 (3.113)	-4.323 (3.041)	-4.829 (3.121)	-4.452 (3.055)	-4.824 (3.124)	-4.521 (3.064)
5.soc_rel	16.84** (4.570)	17.35*** (4.515)	16.74** (4.542)	17.16*** (4.495)	16.76** (4.541)	17.05*** (4.482)
Christian	15.19 (8.986)	17.57 (8.642)	15.37 (8.901)	17.30 (8.524)	15.37 (8.886)	17.18 (8.450)
Other	55.70*** (13.00)	58.51*** (13.94)	55.77*** (12.98)	58.51*** (14.13)	55.81*** (12.98)	58.43*** (14.23)
Female	-19.58*** (3.856)	-20.24*** (3.815)	-19.69*** (3.853)	-20.17*** (3.827)	-19.67*** (3.857)	-20.14*** (3.823)

Married	13.90 <sup>***</sup> (1.718)	13.72 <sup>***</sup> (1.733)	13.90 <sup>***</sup> (1.721)	13.75 <sup>***</sup> (1.749)	13.89 <sup>***</sup> (1.721)	13.77 <sup>***</sup> (1.770)
Widowed	-2.527 (2.905)	-2.665 (2.893)	-2.495 (2.887)	-2.669 (2.890)	-2.503 (2.890)	-2.673 (2.895)
Divorced	4.137 (2.259)	4.061 (2.234)	4.180 (2.247)	3.942 (2.224)	4.139 (2.245)	3.920 (2.226)
Urban	31.82 <sup>***</sup> (3.274)	31.26 <sup>***</sup> (3.372)	31.83 <sup>***</sup> (3.265)	31.36 <sup>***</sup> (3.359)	31.84 <sup>***</sup> (3.265)	31.39 <sup>***</sup> (3.366)
Skilled	82.29 <sup>***</sup> (7.254)	81.78 <sup>***</sup> (7.293)	82.33 <sup>***</sup> (7.257)	81.92 <sup>***</sup> (7.291)	82.34 <sup>***</sup> (7.257)	81.97 <sup>***</sup> (7.292)
c.minwageState#c.no ncompliance0StateA		-1.651 <sup>***</sup> (0.237)				
NC1			82.70 (60.84)	362.7 <sup>***</sup> (61.18)		
Minimum Wage # NC				-4.349 <sup>***</sup> (0.667)		
NC2					126.1 (94.86)	778.4 <sup>***</sup> (126.9)
c.minwageState#c.no ncompliance2StateA						-9.374 <sup>***</sup> (1.404)
_cons	-215.1 (308.7)	310.0 (227.5)	-210.5 (257.0)	426.2 (238.9)	-143.5 (269.5)	500.0 (252.2)
<i>N</i>	179337	179337	179337	179337	179337	179337

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 8: Results  
Consumption

	(1) Cons_PC	(2) Cons_PC	(3) Cons_PC	(4) Cons_PC	(5) Cons_PC	(6) Cons_PC
Minimum Wage	7.694** (2.196)	14.60*** (1.402)	6.166** (1.891)	13.87*** (1.318)	6.182** (1.897)	13.77*** (1.415)
NC0	-246.0 (219.7)	478.2** (156.8)				
lnPopState	59.68* (26.78)	52.51*** (12.73)	57.12* (26.55)	67.60*** (12.62)	56.82* (25.95)	71.96*** (13.77)
lnGDPState	193.3 (245.6)	-183.6* (86.06)	278.0 (239.9)	-195.6 (115.0)	259.9 (243.5)	-214.8 (130.0)
age	2.535 (2.363)	2.791 (2.300)	2.512 (2.363)	2.679 (2.299)	2.518 (2.364)	2.644 (2.306)
c.age#c.age	0.0130 (0.0265)	0.0102 (0.0257)	0.0133 (0.0265)	0.0115 (0.0257)	0.0132 (0.0265)	0.0119 (0.0258)
Casual worker	-269.3*** (25.88)	-268.2*** (26.08)	-270.4*** (25.97)	-269.5*** (25.94)	-270.4*** (25.97)	-270.0*** (25.92)
SC	6.136 (12.10)	6.338 (11.06)	6.515 (11.95)	6.229 (11.26)	6.615 (11.85)	5.807 (11.36)
OBC	36.71** (11.55)	37.26** (10.17)	36.68** (11.36)	36.46** (10.47)	36.73** (11.28)	35.91** (10.69)
Muslim	-7.472 (14.68)	-4.492 (14.36)	-7.192 (14.58)	-4.822 (14.19)	-7.189 (14.55)	-5.336 (14.22)
5.soc_rel	154.0*** (16.22)	157.2*** (15.37)	153.4*** (15.92)	156.0*** (15.31)	153.3*** (15.88)	155.1*** (15.30)
Christian	319.1*** (68.14)	333.8*** (68.15)	319.8*** (67.80)	331.9*** (68.01)	320.0*** (67.75)	331.0*** (67.46)
Other	518.2** (160.5)	535.5** (166.8)	518.5** (160.4)	535.7** (167.6)	518.7** (160.4)	534.7** (168.0)
Female	30.69** (9.282)	26.58** (8.843)	29.78** (9.181)	26.77** (8.832)	29.72** (9.141)	26.84** (8.805)
Married	-64.09** (18.71)	-65.19** (18.14)	-63.88** (18.72)	-64.83** (18.14)	-63.89** (18.71)	-64.66** (18.15)

Widowed	-58.45* (24.32)	-59.31* (23.83)	-57.92* (24.27)	-59.01* (23.82)	-57.90* (24.26)	-58.93* (23.80)
Divorced	-18.66 (30.55)	-19.13 (29.97)	-17.80 (30.40)	-19.30 (29.82)	-17.87 (30.34)	-19.20 (29.71)
Urban	254.6*** (15.60)	251.1*** (16.19)	254.7*** (15.63)	251.8*** (15.91)	254.8*** (15.60)	252.0*** (15.77)
Skilled	340.9*** (21.04)	337.8*** (21.08)	341.4*** (21.16)	338.8*** (21.05)	341.5*** (21.17)	339.3*** (21.15)
c.minwageState#c.no ncompliance0StateA		-10.23*** (1.054)				
NC1			177.5 (430.4)	1936.3*** (294.7)		
Minimum Wage # NC				-27.32*** (2.895)		
NC2					386.8 (700.7)	4373.8*** (586.4)
c.minwageState#c.no ncompliance2StateA						-57.30*** (6.664)
_cons	-2212.7 (2114.9)	1040.0 (774.0)	-3149.4 (2038.6)	849.6 (1028.7)	-2971.4 (2073.2)	962.0 (1156.2)
N	179336	179336	179336	179336	179336	179336

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 9: Results  
Work

	(1) week_int	(2) week_int	(3) week_int	(4) week_int	(5) week_int	(6) week_int
Minimum Wage	0.00146 (0.00294)	0.000412 (0.00354)	0.000453 (0.00297)	0.000783 (0.00353)	-0.000106 (0.00312)	0.000591 (0.00377)
NC0	-0.443 (0.329)	-0.553 (0.364)				
lnPopState	0.0193 (0.0361)	0.0204 (0.0366)	0.0246 (0.0379)	0.0251 (0.0371)	0.0223 (0.0370)	0.0237 (0.0358)
lnGDPState	0.404 (0.353)	0.461 (0.379)	0.526 (0.344)	0.506 (0.356)	0.573 (0.334)	0.529 (0.351)
age	0.0161** (0.00455)	0.0160** (0.00455)	0.0160** (0.00456)	0.0160** (0.00455)	0.0160** (0.00456)	0.0160** (0.00455)
c.age#c.age	-0.000232*** (0.0000607)	-0.000232*** (0.0000607)	-0.000231*** (0.0000608)	-0.000231*** (0.0000607)	-0.000231*** (0.0000608)	-0.000231*** (0.0000608)
Casual worker	-1.078*** (0.105)	-1.078*** (0.105)	-1.079*** (0.105)	-1.079*** (0.105)	-1.080*** (0.105)	-1.080*** (0.105)
SC	-0.125* (0.0563)	-0.125* (0.0561)	-0.125* (0.0562)	-0.125* (0.0562)	-0.125* (0.0562)	-0.125* (0.0563)
OBC	-0.0724 (0.0518)	-0.0725 (0.0516)	-0.0722 (0.0518)	-0.0722 (0.0518)	-0.0724 (0.0518)	-0.0725 (0.0520)
Muslim	-0.0357 (0.0515)	-0.0362 (0.0513)	-0.0351 (0.0514)	-0.0350 (0.0514)	-0.0351 (0.0514)	-0.0350 (0.0515)
5.soc_rel	-0.0990 (0.0690)	-0.0995 (0.0685)	-0.0988 (0.0690)	-0.0987 (0.0688)	-0.0991 (0.0691)	-0.0989 (0.0690)
Christian	-0.0317 (0.0990)	-0.0339 (0.0971)	-0.0327 (0.0993)	-0.0322 (0.0975)	-0.0324 (0.0993)	-0.0314 (0.0977)
Other	-0.121 (0.0855)	-0.124 (0.0841)	-0.122 (0.0857)	-0.121 (0.0852)	-0.122 (0.0857)	-0.120 (0.0856)
Female	-0.413*** (0.0673)	-0.413*** (0.0665)	-0.413*** (0.0671)	-0.413*** (0.0667)	-0.414*** (0.0674)	-0.414*** (0.0670)

Married	-0.0503* (0.0201)	-0.0501* (0.0201)	-0.0500* (0.0201)	-0.0500* (0.0201)	-0.0500* (0.0202)	-0.0500* (0.0201)
Widowed	0.0585 (0.0328)	0.0587 (0.0328)	0.0589 (0.0328)	0.0589 (0.0328)	0.0591 (0.0328)	0.0590 (0.0328)
Divorced	0.134** (0.0418)	0.134** (0.0419)	0.134** (0.0418)	0.134** (0.0418)	0.135** (0.0420)	0.135** (0.0419)
Urban	0.0970*** (0.0248)	0.0976*** (0.0251)	0.0972*** (0.0249)	0.0971*** (0.0251)	0.0971*** (0.0249)	0.0969*** (0.0251)
Skilled	0.0121 (0.0223)	0.0126 (0.0221)	0.0123 (0.0224)	0.0122 (0.0224)	0.0124 (0.0224)	0.0122 (0.0224)
c.minwageState#c.no ncompliance0StateA		0.00155 (0.00246)				
NC1			-0.669 (0.488)	-0.593 (0.724)		
Minimum Wage # NC				-0.00117 (0.00810)		
NC2					-0.809 (0.648)	-0.443 (1.406)
c.minwageState#c.no ncompliance2StateA						-0.00527 (0.0179)
_cons	2.864 (3.220)	2.371 (3.455)	1.531 (3.030)	1.702 (3.168)	1.052 (2.951)	1.413 (3.122)
N	179337	179337	179337	179337	179337	179337

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Table 11a**  
**Results: Wages with State Trends**

	(1) dailywage	(2) dailywage	(3) dailywage	(4) dailywage	(5) dailywage	(6) dailywage
Minimum Wage	-0.0380 (0.736)	2.515* (1.210)	-0.0727 (0.498)	1.421 (0.927)	-0.0209 (0.460)	1.128 (0.806)
NC0	5.694 (50.14)	148.8*** (38.45)				
lnPopState	11.01* (4.361)	8.289 (5.201)	11.10* (4.355)	15.74* (6.286)	11.01* (4.436)	17.90* (6.618)
lnGDPState	-23.02 (37.71)	-14.49 (35.54)	-24.05 (33.97)	-25.48 (45.44)	-24.68 (35.36)	-34.74 (44.64)
age	1.792*** (0.386)	1.802*** (0.387)	1.793*** (0.386)	1.795*** (0.387)	1.792*** (0.386)	1.794*** (0.387)
c.age#c.age	-0.0119* (0.00460)	-0.0120* (0.00461)	-0.0119* (0.00460)	-0.0119* (0.00461)	-0.0119* (0.00460)	-0.0119* (0.00461)
Casual worker	-52.92*** (7.124)	-52.86*** (7.135)	-52.92*** (7.125)	-52.89*** (7.131)	-52.92*** (7.124)	-52.92*** (7.129)
SC	-0.861 (1.770)	-0.803 (1.734)	-0.854 (1.770)	-0.812 (1.757)	-0.856 (1.769)	-0.828 (1.765)
OBC	-3.110 (1.947)	-3.052 (1.924)	-3.106 (1.949)	-3.083 (1.945)	-3.107 (1.949)	-3.098 (1.954)
Muslim	-3.902 (2.950)	-3.983 (2.952)	-3.906 (2.955)	-3.940 (2.958)	-3.901 (2.954)	-3.942 (2.962)
5.soc_rel	17.77*** (4.375)	17.83*** (4.399)	17.76*** (4.336)	17.79*** (4.364)	17.77*** (4.330)	17.77*** (4.348)
Christian	18.75* (8.358)	18.70* (8.341)	18.75* (8.356)	18.71* (8.364)	18.75* (8.356)	18.70* (8.373)
Other	60.17***	59.66***	60.18***	59.86***	60.17***	59.86***



	(14.54)	(14.05)	(14.57)	(14.26)	(14.57)	(14.31)
Female	-20.16*** (3.800)	-20.20*** (3.814)	-20.17*** (3.801)	-20.15*** (3.804)	-20.16*** (3.801)	-20.13*** (3.800)
Married	13.75*** (1.784)	13.65*** (1.774)	13.75*** (1.797)	13.72*** (1.786)	13.75*** (1.800)	13.73*** (1.793)
Widowed	-2.657 (2.930)	-2.758 (2.905)	-2.652 (2.925)	-2.762 (2.916)	-2.655 (2.927)	-2.755 (2.921)
Divorced	4.067 (2.291)	4.005 (2.302)	4.080 (2.290)	4.002 (2.274)	4.069 (2.296)	3.975 (2.267)
Urban	31.08*** (3.367)	31.06*** (3.335)	31.09*** (3.367)	31.10*** (3.349)	31.09*** (3.367)	31.11*** (3.349)
Skilled	81.88*** (7.334)	81.84*** (7.310)	81.89*** (7.342)	81.85*** (7.317)	81.88*** (7.343)	81.84*** (7.318)
c.minwageState#c.no ncompliance0StateA		-2.483** (0.805)				
NC1			20.28 (36.73)	406.8* (159.0)		
Minimum Wage # NC				-4.906* (2.164)		
NC2					14.26 (48.82)	773.2* (354.7)
c.minwageState#c.no ncompliance2StateA						-9.082 (4.391)
_cons	16099.1*** (1210.9)	-510.0 (4940.9)	15953.1*** (704.2)	3497.7 (5445.4)	16142.4*** (666.4)	5521.4 (5189.6)
N	179337	179337	179337	179337	179337	179337

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Table 11b**  
**Results: Consumption with State Trends**

	(1) Cons_PC	(2) Cons_PC	(3) Cons_PC	(4) Cons_PC	(5) Cons_PC	(6) Cons_PC
Minimum Wage	3.042 (3.129)	17.98*** (1.803)	1.966 (2.808)	10.90*** (2.006)	2.136 (2.740)	8.416*** (2.048)
NC0	-87.90 (218.2)	749.5*** (164.3)				
lnPopState	66.53* (29.20)	50.59* (23.20)	69.28* (30.72)	97.07*** (23.01)	69.12* (30.67)	106.8*** (26.73)
lnGDPState	-469.6 (285.8)	-419.7* (186.4)	-457.7 (274.8)	-466.3 (230.1)	-462.1 (279.8)	-517.2* (228.2)
age	2.807 (2.305)	2.862 (2.300)	2.807 (2.305)	2.823 (2.303)	2.807 (2.305)	2.813 (2.304)
c.age#c.age	0.0102 (0.0258)	0.00955 (0.0257)	0.0102 (0.0258)	0.0100 (0.0257)	0.0102 (0.0258)	0.0101 (0.0258)
Casual worker	-267.3*** (26.16)	-266.9*** (26.22)	-267.3*** (26.18)	-267.1*** (26.23)	-267.3*** (26.17)	-267.2*** (26.22)
SC	7.313 (10.88)	7.653 (10.86)	7.342 (10.90)	7.594 (11.01)	7.346 (10.89)	7.495 (11.03)
OBC	39.14*** (9.806)	39.48*** (9.837)	39.14*** (9.853)	39.28*** (9.970)	39.14*** (9.853)	39.19*** (9.990)
Muslim	-2.191 (14.01)	-2.665 (14.03)	-2.248 (14.06)	-2.447 (14.17)	-2.226 (14.04)	-2.449 (14.16)
5.soc_rel	158.8*** (15.24)	159.1*** (15.20)	158.5*** (15.17)	158.7*** (15.20)	158.6*** (15.17)	158.6*** (15.22)
Christian	332.7*** (66.72)	332.4*** (66.85)	332.8*** (66.72)	332.5*** (66.79)	332.8*** (66.72)	332.4*** (66.76)
Other	538.2** (167.1)	535.2** (164.3)	538.4** (167.3)	536.5** (165.3)	538.4** (167.3)	536.7** (165.8)
Female	25.85** (8.842)	25.59** (8.824)	25.81** (8.857)	25.93** (8.829)	25.82** (8.854)	26.01** (8.833)

Married	-65.48** (18.20)	-66.03** (18.14)	-65.36** (18.17)	-65.56** (18.17)	-65.38** (18.16)	-65.46** (18.17)
Widowed	-60.18* (23.87)	-60.77* (23.82)	-60.14* (23.88)	-60.80* (23.87)	-60.15* (23.88)	-60.69* (23.89)
Divorced	-19.40 (30.03)	-19.76 (29.96)	-19.22 (29.98)	-19.68 (29.93)	-19.25 (29.99)	-19.76 (29.93)
Urban	251.2*** (15.98)	251.0*** (15.96)	251.2*** (15.95)	251.3*** (15.92)	251.2*** (15.95)	251.3*** (15.92)
Skilled	337.1*** (21.21)	336.9*** (21.04)	337.2*** (21.24)	337.0*** (21.09)	337.2*** (21.24)	337.0*** (21.12)
c.minwageState#c.no ncompliance0StateA		-14.52*** (1.358)				
NC1			89.72 (253.7)	2401.6*** (429.0)		
Minimum Wage # NC				-29.35*** (4.711)		
NC2					91.65 (363.0)	4242.1*** (999.5)
c.minwageState#c.no ncompliance2StateA						-49.67*** (11.77)
_cons	98007.1*** (6775.3)	847.0 (10769.4)	94362.0*** (5962.9)	19856.7 (12520.0)	94983.7*** (5304.0)	36898.3* (14017.4)
N	179336	179336	179336	179336	179336	179336

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Table 11c**  
**Results: Work with State Trends**

	(1)	(2)	(3)	(4)	(5)	(6)
	week_int	week_int	week_int	week_int	week_int	week_int
Minimum Wage	0.00790 (0.00504)	0.00919 (0.0106)	0.00658 (0.00403)	0.0108 (0.00846)	0.00499 (0.00373)	0.00764 (0.00759)
NC0	-0.884* (0.389)	-0.812 (0.517)				
lnPopState	-0.0321 (0.0710)	-0.0335 (0.0720)	-0.0285 (0.0696)	-0.0154 (0.0635)	-0.0306 (0.0718)	-0.0147 (0.0673)
lnGDPState	0.134 (0.724)	0.139 (0.724)	0.278 (0.625)	0.274 (0.565)	0.385 (0.641)	0.361 (0.595)
age	0.0163** (0.00453)	0.0163** (0.00453)	0.0163** (0.00452)	0.0163** (0.00453)	0.0163** (0.00452)	0.0163** (0.00453)
c.age#c.age	-0.000235*** (0.0000605)	-0.000235*** (0.0000605)	-0.000235*** (0.0000604)	-0.000235*** (0.0000605)	-0.000235*** (0.0000604)	-0.000235*** (0.0000605)
Casual worker	-1.083*** (0.105)	-1.083*** (0.105)	-1.083*** (0.105)	-1.083*** (0.105)	-1.083*** (0.105)	-1.083*** (0.105)
SC	-0.125* (0.0557)	-0.125* (0.0558)	-0.126* (0.0556)	-0.126* (0.0558)	-0.126* (0.0556)	-0.126* (0.0557)
OBC	-0.0773 (0.0508)	-0.0773 (0.0509)	-0.0777 (0.0507)	-0.0776 (0.0508)	-0.0778 (0.0507)	-0.0778 (0.0508)
Muslim	-0.0396 (0.0504)	-0.0397 (0.0503)	-0.0394 (0.0502)	-0.0395 (0.0503)	-0.0397 (0.0503)	-0.0398 (0.0502)
5.soc_rel	-0.102 (0.0674)	-0.102 (0.0675)	-0.102 (0.0677)	-0.102 (0.0679)	-0.102 (0.0677)	-0.102 (0.0678)
Christian	-0.0185 (0.0968)	-0.0185 (0.0968)	-0.0186 (0.0967)	-0.0187 (0.0967)	-0.0187 (0.0967)	-0.0188 (0.0967)
Other	-0.130 (0.0841)	-0.131 (0.0839)	-0.130 (0.0843)	-0.131 (0.0838)	-0.130 (0.0843)	-0.131 (0.0838)
Female	-0.412*** (0.0655)	-0.412*** (0.0654)	-0.411*** (0.0654)	-0.411*** (0.0653)	-0.411*** (0.0654)	-0.411*** (0.0654)

Married	-0.0535* (0.0198)	-0.0535* (0.0198)	-0.0536* (0.0197)	-0.0537* (0.0197)	-0.0535* (0.0197)	-0.0535* (0.0198)
Widowed	0.0578 (0.0330)	0.0577 (0.0330)	0.0575 (0.0328)	0.0571 (0.0329)	0.0575 (0.0328)	0.0572 (0.0329)
Divorced	0.131** (0.0425)	0.131** (0.0425)	0.131** (0.0425)	0.131** (0.0424)	0.131** (0.0425)	0.131** (0.0424)
Urban	0.0954*** (0.0248)	0.0954*** (0.0248)	0.0949*** (0.0247)	0.0949*** (0.0247)	0.0948*** (0.0247)	0.0949*** (0.0247)
Skilled	0.0125 (0.0214)	0.0125 (0.0214)	0.0121 (0.0214)	0.0120 (0.0214)	0.0121 (0.0214)	0.0120 (0.0214)
c.minwageState#c.no ncompliance0StateA		-0.00126 (0.00669)				
NC1			-1.472*** (0.351)	-0.387 (1.379)		
Minimum Wage # NC				-0.0138 (0.0179)		
NC2					-2.082*** (0.509)	-0.325 (2.945)
c.minwageState#c.no ncompliance2StateA						-0.0210 (0.0365)
_cons	30.49* (13.04)	22.09 (45.14)	28.60* (10.49)	-6.370 (45.65)	22.77* (9.923)	-1.813 (42.30)
N	179337	179337	179337	179337	179337	179337

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Table 12:**  
**First Stage IV Regression**

	(1) NC <sub>0</sub> (Unclustered SEs)	(2) NC <sub>0</sub> (Clustered SEs)	(3) Minimum Wages # NC <sub>0</sub> (Unclustered SEs)	(4) Minimum Wages # NC <sub>0</sub> (Clustered SEs)
Minimum Wage	0.00412*** (0.0000201)	0.00412* (0.00150)	1.377*** (0.00298)	1.377*** (0.198)
lnPopState	0.00311*** (0.000376)	0.00311 (0.0145)	2.072*** (0.0556)	2.072 (2.468)
lnGDPState	-0.305*** (0.00184)	-0.305** (0.0818)	-70.09*** (0.273)	-70.09** (18.92)
age	0.000117* (0.0000531)	0.000117 (0.0000698)	0.0259*** (0.00786)	0.0259* (0.0109)
c.age#c.age	-0.00000150* (0.000000643)	-0.00000150 (0.000000788)	-0.000320*** (0.0000952)	-0.000320* (0.000123)
Casual worker	0.00296*** (0.000325)	0.00296* (0.00131)	0.0649 (0.0481)	0.0649 (0.140)
SC	-0.000967** (0.000351)	-0.000967 (0.00143)	0.186*** (0.0520)	0.186 (0.165)
OBC	0.000344 (0.000348)	0.000344 (0.00162)	0.311*** (0.0515)	0.311 (0.198)
Muslim	-0.000866 (0.000476)	-0.000866 (0.00159)	0.309*** (0.0704)	0.309 (0.151)
Hindu	0.00124** (0.000408)	0.00124 (0.00200)	0.504*** (0.0603)	0.504* (0.192)
Christian	-0.000985 (0.00122)	-0.000985 (0.00252)	1.175*** (0.181)	1.175* (0.430)
Other	-0.00178 (0.00148)	-0.00178 (0.00318)	0.890*** (0.219)	0.890* (0.389)
Female	0.00190*** (0.000238)	0.00190* (0.000793)	-0.275*** (0.0352)	-0.275 (0.163)
Married	-0.000256 (0.000361)	-0.000256 (0.000517)	-0.176*** (0.0534)	-0.176* (0.0747)
Widowed	-0.00173**	-0.00173*	-0.201*	-0.201*

	(0.000599)	(0.000777)	(0.0886)	(0.0956)
Divorced	-0.00222* (0.00112)	-0.00222* (0.000919)	-0.313 (0.166)	-0.313* (0.144)
Urban	0.000252 (0.000297)	0.000252 (0.000612)	-0.151*** (0.0439)	-0.151 (0.115)
Skilled	-0.000718* (0.000335)	-0.000718 (0.000932)	-0.433*** (0.0496)	-0.433** (0.152)
State Crime Rate	-0.0000640*** (0.00000665)	-0.0000640 (0.000626)	0.267*** (0.000984)	0.267** (0.0836)
State Crime Rate#Minimum Wage	0.00000267*** (4.02e-08)	0.00000267 (0.00000281)	-0.000973*** (0.00000595)	-0.000973 (0.000507)
Enforcement	0.00215*** (0.0000230)	0.00215 (0.00136)	0.120*** (0.00340)	0.120 (0.143)
Enforcement#Minimum Wage	-0.0000243*** (0.000000236)	-0.0000243 (0.0000135)	-0.00187*** (0.0000348)	-0.00187 (0.00190)
_cons	3.386*** (0.0177)	3.386*** (0.737)	585.4*** (2.624)	585.4** (166.6)
<i>N</i>	161298	161298	161298	161298

**Table 13a:**  
**Results by Skill category: Wages**

	(1) dailywage	(2) dailywage	(3) Dailywage	(4) dailywage	(5) dailywage	(6) dailywage
Minimum Wage	0.769*** (0.150)	1.683*** (0.154)	0.696*** (0.145)	0.696*** (0.145)	0.670*** (0.140)	1.164*** (0.144)
NC <sub>0</sub>	-29.34** (11.21)	144.7*** (15.99)				
Minimum Wage # NC <sub>0</sub>		-1.968*** (0.141)				
NC <sub>1</sub>			-27.72 (26.03)	-27.72 (26.03)		
Minimum Wage # NC <sub>1</sub>					-26.28 (35.42)	516.8*** (58.02)
NC <sub>2</sub>						-6.324*** (0.532)
Minimum Wage # NC <sub>2</sub>	-128.3 (186.2)	266.3 (162.7)	-183.8 (190.8)	-183.8 (190.8)	-194.3 (191.5)	186.7 (169.2)
<i>N</i>	179363	179363	179363	179363	179363	179363

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$



**Table 13b:**  
**Results by Skill category: Consumption**

	(1)	(2)	(3)	(4)	(5)	(6)
	Cons_PC	Cons_PC	Cons_PC	Cons_PC	Cons_PC	Cons_PC
Minimum Wage	4.392*** (0.600)	8.373*** (0.725)	4.390*** (0.596)	7.054*** (0.649)	4.417*** (0.595)	6.161*** (0.630)
NC <sub>0</sub>	-1.340 (56.68)	757.0*** (100.5)				
Minimum Wage # NC <sub>0</sub>		-8.576*** (0.799)				
NC <sub>1</sub>			-2.100 (118.0)	1299.8*** (260.7)		
Minimum Wage # NC <sub>1</sub>				-15.72*** (1.906)		
NC <sub>2</sub>					-34.73 (149.7)	1883.5*** (388.3)
Minimum Wage # NC <sub>2</sub>						-22.34*** (2.999)
_cons	-3720.0** (1136.9)	-2000.9 (1123.2)	-3722.4** (1145.6)	-2012.2 (1152.2)	-3732.8** (1146.5)	-2387.0* (1159.0)
N	179362	179362	179362	179362	179362	179362

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Table 13c:**  
**Results by Skill category: Work**

	(1)	(2)	(3)	(4)	(5)	(6)
	week_int	week_int	week_int	week_int	week_int	week_int
Minimum Wage	0.000220 (0.000587)	-0.000128 (0.000681)	-0.000375 (0.000637)	-0.0000774 (0.000645)	-0.000711 (0.000678)	-0.000308 (0.000674)
NC <sub>0</sub>	-0.265*** (0.0760)	-0.332** (0.111)				
Minimum Wage # NC <sub>0</sub>		0.000750 (0.000917)				
NC <sub>1</sub>			-0.288 (0.148)	-0.142 (0.220)		
Minimum Wage # NC <sub>1</sub>				-0.00176 (0.00202)		
NC <sub>2</sub>					-0.192 (0.226)	0.251 (0.372)
Minimum Wage # NC <sub>2</sub>						-0.00515 (0.00333)
_cons	1.252 (2.150)	1.102 (2.145)	0.753 (2.180)	0.944 (2.102)	0.668 (2.080)	0.978 (1.965)
N	179363	179363	179363	179363	179363	179363

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$