Consumption Response to Minimum Wages: Evidence from Chinese Households

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Abstract

The paper evaluates the impact of the Chinese minimum wage policy on consumption of low-wage households for the period 2002-2009. Using a representative panel of urban households, we find that the consumption response to minimum wage income hikes increases in the share of minimum wage income in total household income. In particular, poorer households fully consume their additional income, while meaningful negative employment effects are absent. The large marginal propensity to consume is driven by households with at least one child, while poor, childless households save two-thirds of a minimum wage hike. The expenditure increase is concentrated in health care and education with potentially long-lasting benefits to household welfare.

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1 Introduction

China's minimum wage policy sets more than 2,000 county-level wage floors in the world's largest labor market of close to 800 million workers. Minimum wages affect at least one household member in approximately 18% of all urban households.[1] We seek to understand how exogenous income variation driven by minimum wage changes influences household consumption behavior. Our main focus is on household consumption since it provides a particularly relevant metric of welfare and is often better measured and less volatile than income, Deaton (1997). Moreover, in the development economics literature, consumption is the standard metric used to assess the relative poverty of households, Ravallion et al. (2009).

Yet, the existing literature on the consumption effect of minimum wages in developing countries is scares.[2] To our knowledge, only Del Carpio et al. (2019) examine the consumption effect of minimum wages in Thailand and find a marginal consumption propensity of around 0.5. Our study contributes a household sample from China with exceptionally large minimum wage variation. We find that the consumption propensities of minimum wage changes can be large and close to one in spite of China's high aggregate household saving rate. In addition, we show that the consumption expansion is concentrated in educational and medical spending suggestive of substantial long-run welfare benefits for low-income households.

Just as in Western societies, minimum wage policies are controversial in emerging countries for fears of unemployment effects, threats to industrial competitiveness, and employment substitution into the informal labour market, Rama (2001), Comola and De Mello (2011), Fang and Lin (2015). These concerns also relate to skepticism about the positive consumption effect of minimum wage increases. First, higher minimum wages may simply substitute for other social transfers so that the

[1] Source: International Labour Organization, ILOSTAT database, using World Bank population estimates. The labor data were retrieved in March 2017 at https://data.worldbank.org/indicator/SL.TLF.TOTL.IN?locations=CN. This means that an estimated 82.5 million households are concerned by minimum wage legislation or approximately 265 million household members; see for instance the National Bureau of Statistics NBS (2013), China Statistical Yearbook 2013, Beijing: China Statistics Press, available at: http://www.stats.gov.cn/tjsj/ndsj/2013/indexeh.htm.

[2] Previous work has often focused on the impact of minimum wages on income distribution. Using labor survey data from Indonesia, Rama (2001) finds that wages above the minimum wage increased between 5-15%. Bosch and Manacorda (2010) find that inequality of earnings in Mexico is associated with the decline of the minimum wage. Engbom and Moser (2022) conclude that minimum wages help reduce earnings inequality in formal sectors of the Brazilian economy.

effective disposable income increase is considerably attenuated, as shown, for example, in U.S. data by Dube (2017). Second, the disposable income effect of higher minimum wages may be perceived as transitory—particularly in emerging countries with higher price inflation. Consumption smoothing may then result only in a modest consumption increase with limited welfare benefits. Third, higher minimum wages can increase household unemployment risk, trigger precautionary savings, and attenuate the consumption effect. Finally, a higher frequency of unemployment can potentially make some households much worse off than in the absence of a minimum wage. Our analysis seeks to address each of these concerns for the Chinese labour market.

China provides a particularly rich and unique institutional setting for research on the consumption effect of minimum wages. The Chinese minimum wage is set at the county-level and is frequently adjusted to keep pace with price inflation and rising standards of living in a high growth environment. For the period 2002-2009, we identify more than 13,874 changes of minimum wages across China's 2,183 counties and match them to the Chinese Urban Household Survey (UHS). No other labour market in the world can rival China's in the frequency, heterogeneity, and magnitude of minimum wage variation. The UHS gives a detailed breakdown of household income and consumption along several household characteristics and it reports all household transfers stemming from income relief and other social policies. This allows us to control for and disentangle the confounding effect of social transfer policies from the impact of the minimum wages. Importantly, the UHS provides additional data on the employment status of each household member and the monthly average hours worked, which enables us to study unemployment effects.[3]

We perform two-stage least square estimations (2SLS) using the minimum wage hike as an instrument for household income shocks.[4] Importantly for the robustness of our estimates with potential unemployment effects, the consumption responses to income changes are performed without conditioning on employment status; i.e., we retain all workers in the sample independently of whether they

[3]A shortcoming of the UHS is that household consumption is not broken down by household member, which implies that we cannot infer an individual's marginal propensity to consume, but instead rely on aggregate household estimates.

[4]Previous work on consumption responses to income shocks in developing countries has relied on weather-induced shocks to income. Wolpin (1982) uses weather shocks in India to estimate an income elasticity of consumption in the range 0.91-1.02 depending on the definition of consumption. Related work by Paxson (1992) studies weather shocks in Thailand to estimate the saving propensity to weather-related income shocks greater than zero, but small. Kan et al. (2017) exploit variation in the 2009 Taiwan Shopping Voucher Program to find a marginal propensity to consume of one quarter.

keep or lose their job after a minimum wage hike.

We summarize the four key findings as follows:

1. Minimum wage increases in China are a very effective policy tool for increasing income and consumption levels of households dependent on the minimum wage. Our estimates show a marginal propensity to consume out of a minimum wage income shock of one. In other words, low-wage households spend the entire additional income stemming from a higher minimum wage. Only for the 6.5% of households without a child do we find an economically large saving effect equivalent to two-thirds of marginal income.

2. Households earning more than half of their disposable income from minimum wages spend more than 32% of the minimum wage income hike as health and educational expenditure. This is likely to improve the long-run income of minimum wage reliant families since these categories of expenditures are akin to investments, as shown by Attanasio et al. (2007) and Blundell et al. (2008). Minimum-wage-dependent households spend approximately 45% of the minimum wage increase on non-durable food consumption.

3. Previous studies suggested that liquidity constraints may contribute to a strong consumption response, Zeldes (1989), Jappelli and Pistaferri (2010a). We test for this hypothesis using three different proxies variables for liquidity constraints, but find only small differences in the marginal propensity of food consumption between more or less constrained households, whereas the consumption response of the durable good component is quantitatively similar. A caveat of this analysis is the imperfect measurement of what represents a financially constrained household and that almost all minimum wage households could be liquidity constrained with respect to larger expenditure items, like quality health care and schooling.

4. We find no robust evidence for economically significant unemployment effects. While the weekly hours worked decrease by approximately 18.5 minutes for a 10% increase in the minimum wage, we cannot find general evidence for a loss in employment even for the most exposed categories of migrant workers, with the exception of poor households in some particular provinces.

Some aspects of China's economic situation deserve to be highlighted and can help the reader to better interpret our findings. Our results show a very strong consumption response to minimum wage not unlike what is found in U.S. data. However, the Chinese components of consumption most responsive to the minimum wage, namely health and educational expenditure, are very different from what is found in U.S. data. Aaronson et al. (2012) estimate a large marginal propensity of consumption of 3.4 for U.S. households that earn a share of income from minimum wage jobs above 0.2. Yet, almost all of this U.S. consumption effect can be traced to debt-financed vehicle purchases.

In the 1990s, the real minimum wage in China was still close to the international poverty line of one U.S. dollar per day and remains comparatively low during our sample period 2002-2009. Urgent consumption needs imply a large consumption response and marginal propensities of consumption are in general larger at the lower end of the income distribution. This is further accentuated by a high propensity to consume on health and education expenditures—a likely consequence of a relatively underdeveloped health system and costly education in China, as described by Chamon and Prasad (2010).[5]

How can our consumption evidence inform Chinese public policy on minimum wages? Two aspects can be highlighted. First, a comprehensive labor market analysis is particularly complicated for emerging economies because of limited policy enforcement and/or interaction effects with an informal labor market outside the scope of empirical measurement. The analysis of household consumption data presents a way to bypass some of these complexities and delivers meaningful evidence on welfare relevant effects. The main policy implication of our findings is that the minimum wage is fully consumed despite the high saving rate of Chinese households. In the Chinese context, it is an effective policy tool in the fight against poverty and inequality.

Second, the analysis of specific household expenditure items can provide additional insights beyond labor market issues that are highly pertinent for any policy analysis. Our evidence connects to a broader literature on Chinese families arguing that inter-generational bequests and education motives in China tend to be salient, especially for Chinese low-income households with at least one child Yin

[5]Health insurance coverage in China was only 29.7% in 2003, Meng et al. (2012). At the same time in the U.S., an estimated 84.8% of the population had health insurance coverage, according to the U.S. Current Population Survey, Mills and Bhandari (2003).

(2010), Huang et al. (2021), Choukhmane et al. (2023). To our knowledge, the literature on minimum wages in developing countries has not paid much attention to this welfare-potent nexus between higher minimum wages and more efficient contracting between two Chinese generations.

Evidence on the employment effects of minimum wage in developing countries is generally mixed, as highlighted in a recent survey by Neumark and Corella (2021). We can point to three features of the emerging market setting that make unemployment effects less likely; namely (i) a very low level for the minimum wage relative to the median wage; (ii) lax law enforcement; and (iii) limited social and unemployment transfers that force labor market participation. In the case of China, the minimum wage is on average only 20% of the median wage, which is indeed very low by developed country standards. These aspects can explain why we do not find any economically and statistically significant unemployment effect of minimum wages even for less protected individuals, such as Chinese urban migrants.[6]

The absence of unemployment effects for low wage workers appears to contradict *firm-level* evidence in Hau et al. (2020), where Chinese minimum wage hikes reduced employment *growth* in the manufacturing sector, or the county-level evidence in Fang and Lin (2015), where regional unemployment effects are found. We note that reduced growth in one firm, sector or location can be compensated by more employment growth in other firms, sectors, or locations. The UHS panel used in this paper comprises urban household members employed across firms, sectors, and county-level borders. Unlike household or worker panels, firm-level panels that do not track individual workers cannot reliably estimate the effect of minimum wages on total worker level unemployment.

This paper is organized as follows. Section 2 presents China's minimum wage regulation and the urban household survey. Section 3 discusses the research design. Section 4 presents the main

[6]Our paper adds to the burgeoning literature on the minimum wage in developing countries, which has been recently surveyed by Lemos (2008), Freeman (2010), and Neumark and Corella (2021). A list of recent studies includes Bhorat et al. (2013), Bhorat et al. (2019) on South Africa; Del Carpio et al. (2019) on Thailand; Magruder (2013), Del Carpio et al. (2015), Hohberg and Lay (2015), Yamada (2016) on Indonesia; Gindling and Terrell (2007) on Costa Rica; Bosch and Manacorda (2010) on Mexico; Soundararajan (2019) on India; Harasztosi and Lindner (2019) on Hungary; Neumark et al. (2006), Engbom and Moser (2022) on Brazil. Overall, the literature provides a mixed picture of the impact of the minimum wages on employment and wage across developing countries. For the effects of minimum wages on employment in the U.S. see Card and Krueger (2000) and more recently Dube et al. (2010), Allegretto et al. (2011), Neumark et al. (2014a), Neumark et al. (2014b), Allegretto et al. (2016). For the relation between the minimum wage bite and unemployment effects see also Aretz et al. (2013) and Bruttel (2019). Significant negative employment effects are found in sectors with very high minimum wages relative to median wages, but not in others.

results on the impact of the minimum wage level on household consumption. Here we also highlight the role of minimum wages in affecting households' health and education expenditure, and present estimates for non-durable and durable consumption propensities. The role of household heterogeneity for consumption behavior is discussed in Section 5 with a focus on financial constraints and household structure. Section 6 investigates the unemployment effects of minimum wage increases. Section 7 concludes.

2 Consumption and Minimum Wage Data in China

2.1 China's Urban Household Survey

The UHS is a nationally representative household dataset for China conducted by the National Bureau of Statistics of China over the period 1986-2012. The UHS is based on a multi-stage stratified random sample, similar to that used by the Current Population Surveys (CPS) in the U.S. The UHS provides detailed information about income, consumption expenditure, and the demographic characteristics of household members at the household and individual level. Therefore, it can be viewed as the Chinese counterpart of a combination of the CPS and Consumer Expenditure Survey (CEX) in the United States. After 2012, the UHS was discontinued and replaced by the National Household Survey, which integrates the Rural Household Survey as described in Ravallion and Chen (2015) and Bai et al. (2020). Ding and He (2018) provide a detailed documentation of the survey construction. One-third of the UHS sample is replaced each year in the household panel, see Han and Shi (2019). Unfortunately, individual household identifiers required to track households over time are only available since 2002, which reduces the structured panel time span to the period 2002-2012.

The UHS features a rich set of household characteristics such as household composition, age, gender, and education. It has data on household income and reports individual employment, monthly wages, bonuses, allowances, housing and medical subsidies, overtime, and other income sources, Feng et al. (2017). This allows us to control for any confounding income effects related to social transfers. Lastly, the UHS provides very detailed information on various consumption categories,

such as food, clothing and footwear, household appliances, goods and services, medical care and health, transportation, recreational activities, and education expenditures, which makes it possible to explore minimum wage effects by consumption type.

In the Internet Appendix B we report details on how we construct our sample. After processing and cleaning the UHS data, our final household sample comprises 73,164 household-years. The average saving rate of 24% and the consumption share of 72% (Appendix Table B-II) is consistent with previous figures inferred from household data, see for instance Curtis et al. (2015) and Chen and Zha (2023). As shown in Appendix Table B-IV, most households (i.e. 75.88%) are observed for two or three years. However, some households are followed for up to six years. In Section 2.4 we introduce the minimum wage data and the overlap generated with the UHS data after we merge the two data sources.

The Chinese National Bureau of Statistics conducts the UHS based on a multi-stage probabilistic sample with a stratified design. Generally, a third of all households in the sample are replaced by randomly selected households. However, as pointed out by Feng et al. (2017) and Ding and He (2018), the triennial rotation design has not always been strictly maintained, which results in a lower rotation ratio than was originally planned. Households know that they are supposed to participate for three consecutive years. Yet they sometimes fail to comply with the reporting requirements. Such early attrition from the sample can bias the estimation. In Appendix Section B.3 we run a test for the attrition in the sample to check for this possibility.

Finally, we highlight three issues with the representativeness of the UHS sample. First, the UHS sampling ignores urban dwellers registered in rural areas, townships, and suburban districts. As the survey method is based on urban residence, the UHS excludes migrant households without an urban residence permit, which are typically situated on the periphery of cities, in employer-provided dormitories, or at their workplaces, for example a construction site. Second, the UHS data could over-represents workers from state and collective enterprises whose survey response rates are systematically higher than those of workers employed in private sector firms, see Ge and Yang (2014). Third, the UHS under-samples extremely wealthy households, and almost certainly under-reports household income obtained by illegal means related to crime and corruption; Ding and He (2018), Bai et al.

(2020), Feng and Guo (2021). Minor data shortcomings of the UHS concern particular reporting items. For example, working hours are reported only for the period 2002-2006, Meng (2012), Ge and Yang (2014). Moreover, the UHS does not provide information on the consumption of self-produced goods and lacks information on household ethnicity, Han et al. (2016).

2.2 Household Minimum Wage Dependency

To analyze the impact of minimum wages on household consumption we distinguish households in terms of their reliance on minimum wage income. Following Aaronson et al. (2012), we define by S the share of disposable income earned from labor income near the minimum wage threshold by the two best-paid household members. Labor income of any household member is considered to be near the county minimum wage and counted towards the nominator of S if it falls within the range of 50%-150% of the county minimum wage.[7]

To address endogeneity concerns related to self-selection, we calculate the share S for the first year a household enters the survey and keep the initial S constant for all consecutive years a household features in the survey. In other words, we track a constant sample of households without conditioning on their potentially endogenous wage evolution. Table B-V in the Internet Appendix shows the number of households entering the UHS for the first time by year. Table B-VI illustrates that the proportion of households within different categories of S does not change significantly if S is measured using alternative definitions for treated worker. In addition, we can exclude the first year a household is sampled and S is determined to eliminate any simultaneity between minimum wage changes and measurement of S. Finally, it is worth emphasising that our estimates of consumption do not condition on employment status, i.e., we keep in the sample both employed and unemployed workers or workers who lose their jobs.

[7]The upper bound of 150% is consistent with the findings of spillover/ripple effects for minimum wages on the wage distribution, whereby workers earning just above the minimum wage tend to have an upgrade whenever the minimum wage is increased. The lower bound of 50% is applied to include workers in firms that do not comply fully with the minimum wage policy. Our results are robust to other thresholds for minimum wage ripple effect, where we experiment with 50%-120% and 50%-130%. For their uncertain treatment and control group status, we ignore (as described in the Internet Appendix B) self-employed individuals, retired household members, retired and then re-employed household members, incapacitated persons, homeworkers, soldiers, social volunteers, students, and other household members undergoing training.

Formally, let $E_{m,h,c}$ denote the annual labor income and $w_{m,h,c}$ the wage of the two best paid household members $m = 1,2$ in household h in county c. For a dummy variable $D[.] = 1$ indicating a wage in the range 50%-150% of county minimum wage MW_c, we define minimum wage income share as

$$S_{h,c} = \frac{1}{Total\ Income_{h,c}} \sum_{m=1,2} E_{m,h,c} \times D\left[0.5MW_c \leq w_{m,h,c} \leq 1.5MW_c\right], \tag{1}$$

where $Total\ Income_{h,c}$ in the denominator represents the sum of the total disposable income of the two top earners in the household.[8] By definition, the minimum wage income share $S_{h,c}$ is between 0 and 1. A higher share implies that the household tends to be poorer and household income more subject to any variation in the minimum wage policy. In the case where both the household head and spouse work at the minimum wage, the share S approaches one.[9]

Figure I plots the distribution of the miniumum wage income share S across the sample. The majority of households earn more than the minimum wage. However, conditional on earning minimum wage income, the distribution is bimodal with the highest peak being households with $S > 0.9$. Throughout the analysis, we consider households without any minimum wage income ($S = 0$) as the placebo group, which is justified in the absence of significant price externalities or other general equilibrium effects that change the consumption situation for these households.[10] The complementary set of households with at least some income related to the minimum wage ($S > 0$) represents a first benchmark group. But the main focus of interest are households with at least half of their income from wages near the minimum wage ($S > 0.5$), and households very dependent on the minimum wage for their subsistence ($S > 0.75$).

It is instructive to compare household characteristics across the four different household groups

[8] Disposable income is composed by the sum of labor income, property income, operating income, and income from social transfers. We observe all of these sub-categories of income in the household survey.

[9] If all members of the household are unemployed in the first year the household enters the panel, the sum of the best two earners results in a zero labor income and consequently $S = 0$. We eliminate these households from the data set (i.e., only 166 observations or 0.2% of the overall sample) to avoid any confounding effects with households earning labor income above the minimum wage.

[10] Alonso (2022) employs aggregate county-level U.S. sales data to find that a 10% increase in minimum wages increases *non-durable* consumption by 1% in the aggregate, and finds that this aggregate effect is larger in poorer counties. Using U.S. scanner data, Leung (2021) finds that a 10% increase in the minimum wage raises grocery store prices by 0.6%-0.8%, and price rigidity within retail chains reduces the pass-through elasticity for retail prices by about 60%. Such modest wage pass-through seems weak enough to not overturn any real consumption effect for poor households and also should not matter much for high income households.

($S = 0$, $S > 0$, $S > 0.5$ and $S > 0.75$) with increasing dependence on minimum wage income. In the Internet Appendix B, Table B-II, we report differences in the structure of household income and spending, and in Table B-III we illustrates the differences in demographic structure. Households with $S > 0.5$ ($S > 0.75$) account for 6% (5%) of all observations, but earn only 2.6% (2.4%) of all labor income, whereas households without any minimum wage income ($S = 0$) represent 72% of the sample and earn 81.9% of all labor income. Moreover, minimum-wage-dependent households tend to consume 82% of their disposable income compared to only 70% for households with $S = 0$. In terms of demographic characteristics, minimum wage households are only slightly larger with 3.3 members compared to 3.1 for the household in the $S = 0$ group. This suggests that the one child policy was implemented consistently across income groups. Unsurprisingly, minimum wage households show lower house ownership rates and their migration to the urban area is typically more recent. We also highlight that minimum-wage-dependent households are much less likely to work for state-owned enterprises (SOE). The latter tend to pay higher wages than the private sector. Finally, the educational level and work experience of the head of household tends to be lower for minimum-wage-dependent families. In our econometric analysis we control for these household characteristics.

A distinct advantage of China's UHS data is that they record all transfer income and its sub-components, which we exploit to control for confounding effects arising from social transfers such as social assistance income, unemployment benefit, dismissal compensation, indemnity insurance income, subsistence allowance, etc. Table B-II shows that poorer households (with $S > 0.5$ or $S > 0.75$) have a lower share of disposable income earned from labor income. More than 20% of their disposable income comes from other sources, such as social transfers. This suggests that controlling for social transfer income is important in pinning down the direct effects of minimum wages on consumption.[11]

[11] In Table B-II of the Internet Appendix and throughout the analysis, consumption is defined as expenditure on food, clothes, household services, medical care, education, transportation, and living. This is consumption *net of* purchasing property, social contributions, and personal social expenditure.

2.3 Institutional Background on Minimum Wages

Chinese minimum wage legislation was first promulgated in 1994 following a wave of economic liberalization policies and the transition from predominantly state-owned production to a mixed economy with a growing private sector. However, the first implementation was ineffective since it lacked provisions and rules for the adjustment to price inflation and county economic conditions. It also suffered from lax enforcement and extensive non-compliance, Rawski (2003), Du and Wang (2008), Sun and Shu (2011), Ye et al. (2015).

China's access to the World Trade Organization and the related boom of the manufacturing sector generated political pressure for a more efficient minimum wage regulation. In December 2003, the central government opted for a reform of minimum wage regulation, and in March 2004, the Ministry of Labor and Social Security introduced the new Minimum Wage Regulations (MWR) into Chinese Labor Law. The most significant provisions required indexation of the minimum wage to the cost of living and a minimum wage level sufficient to support basic daily needs of employees. County and provincial authorities were required to review the minimum wage at least every two years in light of changed economic conditions and propose a revised minimum wage to the provincial authorities. Moreover, implementation of the new MWR was strengthened by increased control at the county administrative level and firm level in pursuit of better compliance. Penalties for non-compliance increased from 20-100% of the statutory minimum wage to 100-500%.

China's administrative and political process of setting minimum wages is not subject to open public debate. The law only stipulates a regular review of the minimum wage level, not a mandatory change of wage level. When the decision of a higher nominal minimum wage is taken upon proposal by the county government and approval by the provincial authorities, implementation follows swiftly with a delay of only two months after a county government announcement. Following the public announcement, the information is spread via local government websites, radio, and TV channels. This decision and implementation process implies that little public information is generated that would allow households to anticipate well in advance minimum wage changes and modify their consumption behavior accordingly, Du and Jia (2016).

Figure II illustrates the proportion of counties that increased their nominal annual minimum wage between 1996 and 2012. In line with the reformation of the MWR, trade liberalization, and the large productivity growth of the booming manufacturing sector, real minimum wage growth in China was higher after the reform. Real minimum wage grew at 5.08% in the period 1996-2003 and accelerated to 8.57% in the period 2004-2012. In monetary terms, the average annual real minimum wage was only RMB 1,259 ($441 under PPP) in 1996, but increased to RMB 4,610 ($1,309 under PPP) in 2012.[12] In other terms, China's average real minimum wage started slightly above the international poverty line set at $1 per day in 1996, and increased to $3.55 per day over the next 16 years.

Minimum wage regulation is only effective under general compliance, which we document based on two different measures. First, we determine the share of workers with a wage below the minimum wage in their county. Second, we calculate an average deviation of non-compliant wages from the county minimum wage for all workers paid below the minimum wage.[13] Figure A-I in the Internet Appendix shows both measures for each sample year. An average 5% of workers are paid a wage below the minimum wage throughout the sample period. This proportion is comparable with the European average, as documented in Goraus-Tańska and Lewandowski (2016). In addition, it is considerably lower than the 15% violation headcount in Chile, the 50% non-compliance in Argentina and other Latin American countries, or a 70% non-compliance rate in higher skilled occupations in urban areas in Kenya, see Lemos (2009) and Bhorat et al. (2019). The annual average percentage deviation of non-compliant wage from the statutory minimum wage is around 19%, which is lower than the corresponding number for Central and East European countries at 32.3%, see Goraus-Tańska and Lewandowski (2016), and also lower than the 23.2% reported for Chile, see Bhorat et al. (2019).

[12]Effective annual *nominal* minimum wage increased from RMB 2,628 ($921 under PPP) in 1996 to RMB 13,224 ($3,756 under PPP) in 2012. In the same period, the annual real growth rate of Chinese labor productivity was 8.9%, while real GDP oscillated around 9.7%. Purchasing power parity conversion factors are from the World Bank's International Comparison Program Database; data on growth are from the World Bank World Development Indicators; productivity data are from the OECD Productivity Archives, see http://stats.oecd.org/Index.aspx?DataSetCode=PDB_LV.

[13]The second measure corresponds to the violation index from the minimum wage literature, see Foster et al. (1984) and Bhorat et al. (2013). Note also that wages can be below the minimum wage because of measurement error, see David et al. (2016). As a result, our measure of non-compliant wages is a mix of non-compliance and measurement error with the proposed measures.

2.4 Chinese Minimum Wage Data

The minimum wage data used in this study were collected by the Chinese Ministry of Human Resources (CMHR) and report the hourly county minimum wage in 2,183 *counties* representing 285 *cities* for the period 1994-2012.[14] However, in our merged sample with the UHS, the overlap is partial in terms of geographical coverage. The merged sample we construct in this study has 710 distinct counties, and spreads across 194 cities and 18 provinces. This overlap, despite being incomplete, concentrates on urban counties, where we presume that the majority of minimum wage workers reside, and still allows for a significant and extensive geographical variation. Figure A-II illustrates visually the map of mainland China and the provinces covered with the CMHR data used in the subsequent analysis.

The empirical analysis focuses on the years 2002-2009 for which the UHS data are available as a stratified panel and can be matched with county-level minimum wage data. During this period, 79.5% of all county-year events in our sample increased their minimum wage in a given year, which translates into a total of 13,874 minimum wage increases. Figure II presents a diagram with the annual *share* of counties that change the *nominal* minimum wage in the range of 0-10%, 10-20% or more than 20%. During the period studied, almost one quarter of Chinese matched counties raised the nominal minimum wage by more than 20%. While none of the counties featured a decrease in the nominal wage, inflation combined with a constant minimum wage reduce the *real* wage if the nominal wage stays constant. From 2002 to 2009, in our sample, an average of 20.5% (3590) county-year events show a constant nominal minimum wage—implying a worsening of purchasing power for a worker employed at the minimum wage. Yet, most county authorities appear attentive to the erosion of the minimum wage by inflation and tend to adjust the minimum wage by more than the rise in consumer prices: of the 13,874 county-year events with a minimum wage increase, only 1,235 had minimum wage increases below the inflation rate in the county. In real terms, approximately half of county-year observation feature a *real* minimum wage change in the range 0-10%, one-third in the range 10-20%, and only a tenth above 20%.

[14]The province is the highest administrative division in China, followed by cities and counties. As of November 2022, there are 33 province-level administrative divisions in China, 333 prefecture-level cities, and a total of 2,862 county-level divisions in China.

We aggregate the observed hourly minimum wages of the minimum wages dataset to a yearly minimum wage in order to match it to the annual reporting of the household survey data. The UHS reports income stemming from bonuses or overtime working hours separately. This means that a worker's basic labor income is not confounded by extra working hours, which are observed separately as income arising from bonuses. In line with Chinese labor law, we assume a 40-hour working week for each full-time worker. Note that this aggregation rule is consistent with Article 36 of the labor code, establishing that "The State shall practice a working hour system wherein labourers shall work for no more than eight hours a day and no more than 44 hours a week on average".[15]

To check whether the assumption of a 40-hour working week (or 160 hours per month) is innocuous for our inference, we compare in Table I the reported monthly hours worked by full-time workers (available for a subset of workers in the period 2002-2006) to the benchmark number of 160 monthly hours for counties both with and without a minimum wage hike. The reported average monthly working hours tend to be slightly above 160 working hours for the sample of full-time workers as shown in Panels A for all households and in Panel B for minimum wage household with $S > 0$. Generally, there is no statistically significant difference in hours worked across treated and non-treated counties. Only the year 2002 records a weak difference in the labor supply among minimum wage households between counties with and without a minimum wage increase.

Table I, Panel C, reports the evolution of the minimum wage bite (i.e., the ratio of the Chinese minimum wage relative to the county median income) in our sample. Chinese minimum wages are generally set at a very low level relative to the median wage. The average ratio of the minimum wage relative to the median wage fluctuates around 20% in the period 2002-2006 and then declines to 17.6% in 2009. The minimum wage bite never approaches the much higher levels observed in most developed countries, where the minimum wage bite ranges from around 30% in the U.S. to 60% in France and Sweden, Dickens (2015). Therefore, the labor income conditions of minimum wage workers in China are much worse in relative terms compared to minimum wage workers in high income economies. In absolute terms, the Chinese *real* minimum wage income is close to the international poverty line (see Section 2.3). It follows that any policy measure that increases the

[15]Details on Chinese Labor Law can be consulted at: Labour Law of the People's Republic of China

consumption level of these extremely poor households represents a reduction in extreme poverty. At the same time, the low bite of the minimum wage suggests that adverse labor demand effects might not be a very salient concern. Section 6 explores the impact of the minimum wage on employment in more detail.

The Internet Appendix A explores whether minimum wage changes in year t correlate with any country-level variables measure in years $t-1$, t, or $t+1$ (Table A-I). In Table A-II we also construct new country-level variables based on the UHS data either for all households , and in Table A-III for minimum-wage-dependent households with $S > 0.5$. After controlling for country fixed effects, county time trends, and interacted province and year fixed effects, none of the numerous covariates is statistically significant and useful for predicting minimum wage hikes.

3 Research Design

In China, workers and households are subject to heterogeneous minimum wage changes across counties. For this study, minimum wage households residing in counties with a minimum wage hike constitute the treatment group and minimum wage households residing in counties with no change in minimum wages the control group. We design a difference-in-difference specification that compares household consumption across counties subject to differential minimum wage hikes (treatment group) and not (control group). Following Aaronson et al. (2012), the household sample is segmented into groups according to their share S of total income received from minimum wage labor as defined in Equation 1. Households without any minimum wage related income ($S = 0$) represent a natural placebo or control group relative to those households with $S > 0$, and which earn some of their total income from minimum wages. An absence of consumption effects for the control group confirms that consumption and minimum wages do not share any spurious relationship.

A more structural regression approach relates household consumption to household income by using the minimum wage change as an instrument to explain variation in household income. The advantage of the 2SLS approach, besides its greater robustness to measurement error and omitted variable bias, is that it accounts explicitly for the channel through which minimum wages affect

consumption. This may address the concern that consumption effects (in reduced form specifications) could relate to good economic performance rather than the higher household income triggered by the minimum wage policy in a county.

At the same time, we highlight that the 2SLS specification produces biased coefficient estimates if the minimum wage affects consumption through mechanisms other than labor income; for example, through prices, social transfers, or credit. For this reason, we also report reduced form specifications, and check for any direct statistical linkages between the minimum wage and such confounding channels.

Formally, we explains household labor income in a first-stage regression:

$$Income_{h,c,t} = \alpha + \beta^{FS} MW_{c,t} + X_{m,h,t}\Lambda + X_{h,t}\Theta + X_{city,t}\Xi + \phi_c \cdot t + \eta_h + \delta_{p,t} + \varepsilon_{h,c,t}, \qquad (2)$$

where $Income_{h,c,t}$ is household labor income for household h in county c in year t. The second stage relates the predicted income $\widehat{Income}_{h,c,t}$ induced by minimum wage variation to household consumption, therefore

$$C_{h,c,t} = \alpha + \beta^{2SLS} \widehat{Income}_{h,c,t} + X_{m,h,t}\Lambda + X_{h,t}\Theta + X_{city,t}\Xi + \phi_c \cdot t + \eta_h + \delta_{p,t} + \varepsilon_{h,c,t}. \qquad (3)$$

The household survey data provide a rich set of demographic and socio-economic characteristics ($X_{m,h,t}$) for the two main labor income earners ($m = 1,2$) in the households. For the purpose of the analysis, we use as controls the individual household member age, age squared, gender, years of work experience, work experience squared, years since migration to the city, and its squared value. We include additional categorical covariates at individual household *member* level to keep fixed personal or occupational characteristics that could affect consumption patterns. Namely, we control for the following characteristics: marital status, level of education, occupation, and industry of occupation.

The observed variables at the household level ($X_{h,t}$) include household size measured by the number of household members, and a house ownership dummy. In addition, one of the advantages of China's UHS is that we observe directly a set of alternative income sources of households. We exploit

this richness by controlling in additive form respectively for social transfer income to households, net operating income from business, household income from lending and borrowing activities, and income from property.

At the city level, we dispose of a variety of macroeconomic variables that we use as controls ($X_{city,t}$): population size, city real GDP, city real average wage, and city unemployment rate. These variables are not available at the more granular county level. To overcome this restriction, and following Allegretto et al. (2016), we allow for different growth trends at the county-level by including the interaction of a county dummy and a time trend $\phi_c \cdot t$ in the regression. The inclusion of county-level time trends is also important to control for diverging county-level consumption trends in a difference-in-difference setting, Wolfers (2006). Our specification also includes household fixed effects η_h and province-year fixed effects $\delta_{p,t}$ to control for macroeconomic time-variant factors. All monetary variables, including the minimum wage, are defined in real terms using the province-level consumer price index as the deflator.

Before proceeding with our exposition of main results of this paper, we compare first-stage income regressions with and without county-level time trends and province-year fixed effects. The results are shown in the Internet Appendix C. In the standard two-way specification with only time fixed effects, but without county-time trends and interacted province-year fixed effects, the regression coefficient in Equation 2 of the real minimum wage is highly significant even for the placebo household group not earning any minimum wage income ($S = 0$); see Table C-I, Column (1). By contrast, after including county trends and province-year fixed effects in Columns (5)-(8), which capture unobserved heterogeneity across counties and provinces, any spurious consumption response of the placebo group within the high-income households is eliminated. Hence, we include both linear county trends and province-time fixed effects in all of our consecutive specifications.

In Table C-II, we separately include interacted province-year fixed effects in Columns (1)-(4), and county-level time trends in Columns (5)-(8). In order to purge income effects in the non-treated group of high wage ($S = 0$), the inclusion of province-year fixed effects turns out to be more important. This is expected since they control for unobserved variation at a higher level of administrative aggregation. Instead, county-level time trends are standard in the difference-in-difference microeconometric liter-

ature with several treated groups (i.e., counties in our study) and are included to control for potential diverging trends among the observed groups, see Wolfers (2006), and Allegretto et al. (2016) for an application to the U.S. minimum wage literature. County trends are particularly important in a fats-growing economy like China with double-digit wage growth rates. Thus, their omission can bias the coefficients for the $S = 0$ group capturing the overall growing wage trend in China.

A further concern is the endogeneity of the minimum wage hike and its potential predictability. Internet Appendix A shows that minimum wage changes are not predicted by standard county-level macroeconomic determinants. Tables A-I, A-II and A-IV confirm for a wide range of regression specifications that minimum wage hikes are not predicted by standard county-level socio-economic or political determinants. This also suggests that households cannot easily predict the minimum wage change in their county.

4 Main Results

4.1 First-Stage and Reduced Form Regressions

Table II presents first-stage and reduced form estimates for different definitions of household income. Households are grouped into those that do not earn any minimum wage income ($S = 0$), receive at least 25% ($S > 0.25$), at least 50% ($S > 0.5$), or at least 75% ($S > 0.75$) of their total income from minimum wages. All specifications include county trends and province-year fixed effects to account for unobserved heterogeneity. Standard errors are clustered at the county level, i.e., the level of the policy change.[16]

Columns (1)-(4) documents the first stage regressions and shows the positive effect of minimum wages on labor income for households with significant minimum wage dependency, i.e., $S > 0.5$ and $S > 0.75$. For the placebo group ($S = 0$) any relationship with labor income vanishes. The absence of any statistically significant consumption effect for the placebo group suggests that changes to minimum wage levels do not trigger any general equilibrium effects with measurable consequences

[16] All our estimates are robust to two-way clustered standard errors at county and city-year level and two-way clustered standard errors at county and province-year level, see Appendix H.

for household consumption.[17]

For the household sample with a minimum wage income share above 25%, we find a small positive coefficient of 0.364, which is statistically insignificant, see Table II, Column (2). For this diverse group of households, the income effect of the minimum wage policy is on average not very pronounced. The coefficient of 1.529 in Column (4) implies a much larger labor income response (i.e., even larger than 1) for households that earn more than 75% of their disposable income from minimum wages. Here, we highlight the frequent presence of multiple minimum wage earners in the same household and note that the average household counts 3.1 members (Table B-III). A standard error of 0.692 implies statistical significance at the conventional 5% level and suggests that the minimum wage instrument used for the income shock has increasing strength in the share S.[18]

The reduced form regression for household consumption adopts a specification common in the minimum wage literature, which controls for *all* non-labor income sources, including transfer payments, as in Aaronson et al. (2012), Allegretto et al. (2011) and Neumark et al. (2014a). It takes the following form:

$$C_{h,c,t} = \alpha + \beta^{RF} MW_{c,t} + X_{m,h,t}\Lambda + X_{h,t}\Theta + X_{city,t}\Xi + \phi_c \cdot t + \eta_h + \delta_{p,t} + \varepsilon_{h,c,t}, \tag{4}$$

where the controls $X_{m,h,t}$, $X_{h,t}$, and $X_{city,t}$ represent the household member, household, and city-level characteristics discussed in Section 3, respectively. We also includes county-specific time trends $\phi_c \cdot t$, household fixed effects η_h, and interacted province-time fixed effects $\delta_{p,t}$.

The regression results in Table II, Columns (5)-(8), show increasing real minimum wage effects on household consumption in the minimum wage share S of household income. For the households most dependent on minimum wage income ($S > 0.75$), the coefficient of the minimum wage policy variable of interest becomes 1.91 (with a standard error of 0.91).

[17] The influence of income changes on the employment status and the labor supply are discussed in Section 6.

[18] As the UHS collects wage information at the worker level, we also run the labor income regression at the individual worker level (conditional on employment status) rather than at the household level as in Table II. The results of the worker level regression are reported in Table F-I of the Internet Appendix F and are quantitatively very similar. For the $S > 0.75$ group, Table F-I, Column (8), reports an estimate of 0.645 for individual household members. When compared to the point estimate of 1.529 in Table II, Column (4), we note that for the $S > 0.75$ household we have an average of 3.35 family members, not all of them necessarily earning labor income (see Table B-III), and 84.4% of them are minimum wage workers.

Forming sub-samples conditional on the initial minimum wage dependence of households implies that fixed effect and controls are fitted relative to each sub-sample. Alternatively, and as a robustness check, we can preserve the sample size by interacting the minimum wage with dummy variables for each specific household group. Table G-I in the Internet Appendix G reports estimates based on group-specific interaction terms. The specification controls for all other sources of household income similar to Table II, Columns (1)-(4). The point estimates on the interaction terms are qualitatively similar to the estimates in Table II, albeit slightly lower. We note that the point estimate of the reference group with $S = 0$ tends to be negative in a range of -0.66 to -0.91, but is statistically insignificant with large standard errors.[19]

Anticipation of minimum wage changes or a delayed household response can compromise the quality of our inference. However, in China, the secretive nature of the policy process that determines minimum wage changes leaves limited scope for the anticipation of such measures. Notwithstanding this favorable institutional setting, we propose in Internet Appendix M a statistical test of policy anticipation.

4.2 Two-Stage Least Square Estimates

The 2SLS estimator uses the variation in household labor income induced by the minimum wage to infer the marginal propensity to consume. As in the previous sections, we operate with different definitions of household minimum wage dependency. For interpretation of 2SLS estimates note that these specifications, contrary to reduced form and first stage regressions, measure *both* labor income and consumption at the household level. Table III presents the 2SLS estimates of real household consumption as a function of real labor income in Columns (1)-(4). Standard errors are clustered at the county level.[20]

[19] We do not report the pooled specification with interaction terms throughout the paper for three main reasons. First, using sub-samples of households is rather intuitive and simpler to present than a table with many interaction terms. Second, the control variables and fixed effects in sub-sample regressions are estimated specifically for that sub-sample rather than the entire household sample, which is useful under heterogeneity of the respective effects discussed later. Third, and more importantly, the point estimate for the minimum wage effect in group $S = 0$ is imprecise. The interaction terms would estimate marginal economic effect relative to this (imprecisely estimated) reference value, which could adversely influence the marginal effects for household groups with $S > 0$.

[20] Appendix H reports additional results for two-way clustered at county and city-year level and two-way clustered at county and province-year level.

We note that the marginal propensity to consume is more precisely estimated as the minimum wage share S increases. This is a consequence of the improved quality of the instrument for the sample of households with higher minimum wage dependency. For households earning more than 75% of their disposable income from minimum wages, a RMB 1000 rise in income increases consumption by RMB 1301 as shown in Column (4). For household groups strongly dependent on minimum wage income ($S > 0.5$ and $S > 0.75$), we reject the null hypothesis of weak instruments based on the Kleibergen and Paap (2006) test and the Anderson and Rubin (1949) test.

It is also instructive to compare the 2SLS estimates of the marginal propensity of consumption under minimum wage changes with the corresponding OLS estimates of the marginal propensity of consumption from labor income. The OLS estimates reported in Appendix Table D-I show considerably smaller correlations between labor income and consumption and fall within a range between 0.33 and 0.44. What can explain this large difference between the 2SLS and OLS estimates? First, labor income changes that do not originate from minimum wage variation could be more transitory and therefore subject to more consumption smoothing. Second, reporting and measurement errors with respect to household income itself can attenuate the OLS estimate. At the same time, such measurement errors are likely to be orthogonal to the minimum wage variation, making the 2SLS estimate asymptotically consistent.

Overall, we conclude from the 2SLS estimates that minimum-wage-dependent households in China fully spend the labor income changes related to a minimum wage increase. We also note that minimum wage increases appear unanticipated and persistent (see Table A-II and Appendix A), so that the observed behavior is fully consistent with the permanent income hypothesis, Jappelli and Pistaferri (2010a). But as aggregate saving rates depend mostly on the saving behavior of middle- and high-income families, we need to be careful not to extrapolate the findings for low-wage families to the Chinese aggregate macroeconomic consumption and saving behavior as a whole.

4.3 Alternative Mechanisms: Prices, Transfers, Credit

Evidence in Aaronson (2001) and more recently by Renkin et al. (2022) suggests that minimum wage hikes trigger aggregate price effects. To explore this relationship further, we report in Appendix Table K-I evidence on the linkage between province-level consumer prices and the average province-level minimum wage. Across the different specifications, no statistically significant relationship is found and the correlations are weak. This holds also for one-year lagged effects and is in line with the evidence surveyed in Brown et al. (1999) and Lemos (2008), and found in Alonso (2022) and Renkin et al. (2022).

However, price effects might be larger in regions with higher minimum wages relative to the median wage. To check this hypothesis, we replicate in Appendix K, Tables K-I, K-II and K-III our baseline regression augmented with an interaction term of the minimum wage with a dummy capturing minimum wage bite. This dummy MW Bite$(p > 0.75)_{city,t}$ marks cities where the minimum wage level relative to the median wage is in the largest quartile (i.e., above the 75% percentile). The 2SLS regressions in Table K-III show a positive and statistically insignificant coefficient for the interaction term. Hence, we find no evidence that potential inflationary effects from minimum wage hikes in cities with a stronger minimum wage bite diminish the strong real consumption response of minimum-wage-dependent households.

Social transfer income is often contingent on household income thresholds whereby minimum wage increases are off-set by reduced social transfers. This makes social transfer income a potentially endogenous and undesirable control variable. We confirm the exogenous nature of Chinese transfer income with respect to the minimum wage by regressing household government transfer income on the minimum wage, which yields generally a point estimate not statistically different from zero (Appendix Table K-IV). Similarly, if the minimum wage affects consumption through other mechanisms, such as household credit, the 2SLS coefficients are biased and do not capture the marginal propensity of consumption from income alone. In light of this concern, we report in Appendix Table K-V regressions for a measure of total household credit in the UHS on the minimum wage. But none of the specifications points to any systematic and statistically significant relationship.

In Appendix L we report the first stage, reduced form, and 2SLS estimates under exclusion of different sets of control variables to see if the results are robust. We start by excluding transfer income as a control in Table L-I (first stage and reduced form specifications) and L-II (2SLS). The consumption propensities under exclusion of transfer controls are somewhat larger in both the reduced form and the 2SLS specification. But transfers clearly affect disposable income and not controlling for transfer income could imply an omitted variable bias. Similar issues arise when we exclude household members' controls in Tables L-III and L-IV, and household-level controls in Tables L-V and L-VI. On the other hand, the exclusion of city-level controls seems to deflate the baseline coefficients, as shown in Tables L-VII and L-VIII. We note also that for the $S = 0$ group all first stage estimates are statistically insignificant. This suggests that these households represent a good placebo group because their labor income and consumption appear unaffected by minimum wage hikes.

4.4 Health and Education, Non-Durable and Durable Expenditures

An extensive economic literature has documented a positive relationship between health and education on the one hand and productivity and long-run income on the other, Mincer (1958), Bloom and Canning (2000). The household survey data allow us to examine these consumption items separately and document their relationship to the minimum wage level. From a public policy perspective, higher consumption of both health and educational expenditure of low-wage households in China is particularly desirable given the relative weakness of China's public health system and often costly access to quality education, as documented, for instance, by Chamon and Prasad (2010).

As Attanasio et al. (2007) and Blundell et al. (2008) show, education and health expenditures are characterized by a more durable nature and their positive feedback effect on future income assimilates them to investment activities. Decomposing health and education expenditures into durable and non-durable items is not a straightforward exercise. In principle, both types of expenditure have the vocation of improving long-run utility, but may also fall short of achieving this goal. For simplicity, we retain health and education as a separate expenditure item and examine its relationship with minimum wage changes in Table IV, Columns (1)-(3), along with non-durables in Columns (4)-(6), and

(other) durables in Columns (7)-(9). Appendix E provides a more granular analysis at the level of each reporting item.

For households with the highest minimum wage dependence ($S > 0.75$), we find that an additional RMB 1,000 of annual minimum wage income is associated with a higher health and education expenditure of RMB 496, suggesting that close to 50% of a minimum wage increase is spent on average on either health or education. The standard error is 0.301 and the point estimate is statistically significant at the 10% level. The high standard error is not surprising given that both health and educational expenditures are contingent on particular circumstances. Interestingly, the 50% expenditure share for a *marginal* minimum wage income hike is three times larger than the 15% *average* expenditure share of health and educational spending combined, see Table B-II in Appendix B. Moreover, as shown in a more detailed breakdown in Appendix E, the majority of the expenditures in these two categories stems from drugs, medicines, educational courses, computer and software expenditures, books and textbooks.

In Table IV, Columns (4)-(6), we report the consumption propensity estimates for the aggregate non-durables category. minimum-wage-dependent households with $S > 0.5$ ($S > 0.75$) spend 0.56% (0.48%) of their marginal minimum wage income on non-durables. The positive point estimates are similar in the two samples with standard errors of 0.314 and 0.3, respectively. Appendix Table E-III documents a more detailed breakdown for non-durables. For example, the consumption propensity for food is the substantial driver of the overall impact on non-durables. For the $S > 0.5$ group of households, a 1000 RMB increase in minimum wages comes with an average 449 RMB expenditure on food. Since the relationship with food consumption is not close to one, this makes the food consumption propensity a relatively poor proxy for the overall marginal propensity to consume.

The marginal propensities to consume durable goods are reported in Table IV, Columns (7)-(9). The minimum wage effect on durable expenditure is never statistically significant and shows a lower propensity than health, education, and non-durable consumption. Interestingly, approximately 13% of the minimum wage increase is spent on television sets, as revealed in Appendix Table E-IV. Yet, standard errors are wide given the granular nature of this consumption item. The evidence on durable expenditure in China contrasts findings for the U.S., where Aaronson et al. (2012) estimate that low-

wage households spend almost their entire marginal minimum wage increase on durables and incur debt to finance specifically vehicle purchases.

In terms of economic theory, our evidence on the relatively high consumption propensities of Chinese households for health and education expenditure is consistent with a strong inter-generational bequest and/or exchange motive. In this regard, the literature on Chinese households has stressed inter-generational motives within the household, Yin (2010), Huang et al. (2021), Choukhmane et al. (2023). Educational spending is thus regarded as an investment in a higher future household income for the next generation. In the context of the one-child-policy, parental aspirations typically focus on a single child and educational investment in this child also serves as a retirement insurance for parents, Cai et al. (2006). We highlighted that higher minimum wages enable low-income families to better participate in such beneficial inter-generational contracting and intertemporal resource exchange.

5 Household Heterogeneity

5.1 Liquidity Constraints

The large consumption effects of minimum wage income shocks documented in Section 4 could be the result of borrowing constraints, Zeldes (1989), Jappelli and Pistaferri (2010a). In a high income growth environment like China, households may expect a lifetime income, which justifies a desired consumption level larger than current disposable income. A higher minimum wage alleviates these expenditure constraints, and this could explain the high consumption propensity. Minimum wage households could be liquidity constrained due to their low proceeds from labor and a lack of collateral to pledge against a loan. It is therefore possible that the findings in the previous section are driven by the inability to smooth consumption over time.

If financial constraints contribute to higher consumption propensities, we expect financially unconstrained households to feature lower consumption propensities of minimum wage income. We identify three variables as proxies for financially unconstrained households. First, we define a dummy indicating that the household has property income. Property serves as collateral in credit relationships

and may be used to guarantee a loan. In the sample, roughly 14% of households with $S > 0.5$ dispose of property income and may therefore be less likely to face borrowing constraints. Among households with some income from property, the mean income from property is RMB 2,957 per year, and the median is RMB 630. We define a property dummy as equal to one if household income from property is above the median of RMB 630 per year and zero otherwise. Second, we identify households with capital (interest, dividend, or insurance) income. The respective dummy variable takes on the value one for above median, i.e. 7.24% of all households with $S > 0.5$. Third, we define outright home ownership households as those who own a house and do not have to make mortgage payments. Contrary to non-owners or owners with mortgage debt, outright home owners can pledge their property as collateral to obtain loans and smooth consumption over the lifecycle. Yet, ownership rates are extremely high at 76% even among relatively poor minimum wage households ($S > 0.5$). Moreover, house values may often be very low so that even outright ownership does not necessarily imply unconstrained access to credit.

Table V reports how the three proxies for credit access interact with the consumption propensity in the 2SLS setting. When interacted with the property income dummy in Columns (1)-(3), the consumption response to minimum wage changes is in line with the baseline 2SLS coefficient of Table III. With regards to liquidity constraints, minimum wage households ($S > 0.5$ or $S > 0.75$) with property income above the median tend to consume roughly 30% less of any minimum wage related income variation compared to households without property income, which is economically large. However, these interacted point estimates in Columns (2)-(3) are not statistically significant at the 10% level. Similarly, households with above median capital income in Columns (5)-(7) show a much lower average marginal propensity to consume; but a large standard error again does not allow us to assert statistical significance. Our third proxy for financial conditions, a dummy for outright house ownership, also shows an economically significant, but statistically insignificant difference in the consumption propensity of (presumably) constrained and unconstrained households.

Overall, we do not find strong statistical support for the hypothesis that liquidity constraints account for the high consumption propensities of minimum wage income hikes. One explanation is that our liquidity proxies capture households' real borrow constraints only very imperfectly and measure-

ment error compromises the quality of the inference. We therefore remain agnostic about the precise role of liquidity constraints in the Chinese setting.

5.2 Household Structure

The large household propensity to spend a higher minimum wage income on education suggests that household structure matters for consumption behavior. The one-child policy implies a dominance of single child households: the majority of households in the UHS sample have one child (77%), households with two children represent 14.5%, childless households are 6.5%, and only 2% of households have more than two children.[21]

China's one-child policy is often blamed for an unbalanced gender ratio between girls and boys because abortions are practiced more frequently if the fetus is female. Some authors claim that this gender imbalance has consequences for the marriage market in which competition for brides requires young unmarried men to demonstrate wealth and real estate ownership. The marriage motive predicts higher savings rates among households with a male child and in particular with a male child of adult age, Wei and Zhang (2011), Rosenzweig and Zhang (2014). Alternatively, male children could also motivate larger educational expenditure with a negative effect on household savings.

Table VI, Columns (1)-(3), reports marginal propensities to consume when the fitted labor income is interacted with a dummy for households with at least one child; in Columns (4)-(6) with a dummy for a male child; and in Columns (7)-(9) with a dummy identifying households with an adult male child of at least 24 years of age. Childless families with a high minimum wage dependency ($S > 0.75$) show a low point estimate of only 52% for the marginal propensity to consume in Column (3), Row (1). Only the interaction term (*Household labor income* $\times$ *child(ren) dummy*) in Row (2) captures a large 85% incremental propensity of consumption for households with children. This means that the high consumption propensity of Chinese households for minimum wage increases is contingent on the presence of at least one child in the household. In a separate set of regressions, we replace the

[21] Besides simple non-compliance, a series of exceptions to the one-child policy can be highlighted and are documented for China. For instance, a time distance of four to six years between two births may provide a justification for two children, rural families can have two children if the first baby is a girl, and further exemptions exist based on ethnic and economic considerations, Gu et al. (2007).

generic dummy for children in the household with a more specific one-child dummy, and find similar results. Moreover, we compare the one-child households to households of multiple children; yet we do not find significantly different consumption responses across these two household groups.

Furthermore, the male gender of the child explains a 10% larger average marginal effect on household consumption. The same finding applies to male children above the age of 24 when a boy's education is usually terminated and a specific male bequest motive should be more detectable in the data. But the positive interaction terms are not statistically significant and do not support a pronounced gender-specific bequest motive related to male children among relatively poor minimum wage households.[22]

Table VI shows that the large consumption effect of minimum wage hikes is predominantly driven by households with children, which might in turn be correlated with liquidity constraints. Moreover, in Section 4.4 we show a relatively high consumption propensities of Chinese households for health and education expenditure. Following a reviewer's comment, we combine both aspects in order to revisit the importance of liquidity constraints in Appendix I. Table I-I reports consumption propensities analogous to Table VI, but conditional on an additional interaction term between household income and the children dummy. While the point estimates for the interaction terms between household labor income and liquidity proxies become even more negative, they still do not reach the conventional 5 percent level of statistical significance. Again, we cannot confirm statistically that liquidity differences between minimum wage households matter for the consumption pattern even after conditioning on children in the household.

However, ruling out liquidity constraints as drivers of high consumption propensities is problematic in view of observed spending pattern on non-durables, health, and education for children. The latter expenditure items generally bring long-term benefits, and thus parents should make these investments even in the absence of a minimum wage hike unless they are liquidity constrained. To explore this aspect further, we look at whether liquidity constraints are associated with those expenditure

[22]We also experimented with other dimensions of household heterogeneity, which also do not yield economically or statistically significant differences as, for example, interaction terms for urban immigrant households, households with one or two members working for a state-owned enterprise (SOE), households with above median debt, female headed households, or measures for the educational level of the head of the household.

components. These results are reported in Appendix Tables I-II to I-IV.

Table I-II, Columns (1)-(6), reports the link between liquidity constraints and households' combined health and education expenditures, and Columns (7)-(12) the corresponding results for non-durable (food) expenditure. The liquidity constraints we capture make a bigger difference to the marginal propensity of consumption with the non-durable category in Columns (7)-(8) compared to health and education expenditures in Columns (1)-(2) —suggesting that minimum wage households invest in health and education more independently of their financial means and rather forsake non-durable consumption. We can interpret this as a pecking order of consumption items for financially constrained households. To dig further, Table I-III looks only at educational expenditure and disentangles it from health expenditures, but the relatively lower differential sensitivity of educational expenditure to the minimum wage across financially constrained and unconstrained households is again confirmed. By contrast, food consumption in Table I-IV provides evidence that our liquidity proxies appear to matter more for non-durables.[23]

Our evidence here confirms some previous research. Cooper et al. (2020) find that an increase in the U.S. minimum wage raises consumption of food at home and food consumed away from home. Related research on transfers income by Johnson et al. (2006) shows that the U.S. government tax rebate of 2001 increased household expenditures on food by 11 percent relative to the previous three months. However, Parker et al. (2013) do not find similar evidence for a significant increase of food consumption following the Economic Stimulus Payments of 2008.

[23]Food items include food consumed away from home, food consumed at home, and purchases of tobacco, alcohol, and beverages, including coffee and tea. We also experimented with other items within the non-durable basket, like services, clothing, and sundry goods. However, we find that only food expenditure features a positive and statistically significant differential consumption effects for financially constrained households. The food consumption estimates in Table I-IV imply that this item accounts for around 15% of the total impact of minimum wage hikes on consumption, and between 28% (i.e. 0.135/0.465 to 40% (i.e. 0.15/0.375) of the impact on food consumption can be explained by liquidity constraints. Table I-V sheds more light by splitting food consumption between home and away. The results indicate that liquidity constraints act mostly on home food consumption: around 10% of the marginal propensity to consume can be associated with food for home consumption of liquidity constrained households.

6 Minimum Wages and Employment

The UHS collects consumption information only at the household level. However, hours worked by household members, their employment status, occupation, and industry of employment are reported at the individual level. We exploit this more granular data structure to estimate the impact of minimum wages on the intensive margin of employment in Appendix J.1 and on workers' employment status in Appendix J.2, followed by robustness tests in Appendix J.3.

The findings can be summarized as follows: The UHS data provide no evidence for an economically significant effect of the minimum wage on the employment status of affected household members. This finding extends even to the more fragile category of (registered) recent urban migrants. At the same time we observe an economically small reduction in hours worked by workers in minimum wage households. Overall, adverse employment effects do not appear to be a salient concern for the Chinese minimum wage hikes.

One interpretation of these findings is that the level of minimum wages in China, set at around 20% of the median wage, is low by international standards and has little bite. The low bite of the minimum wage, coupled with the evidence on the absence of unemployment effects, suggests that the minimum wage level in China does not exceed the marginal productivity even of the least qualified workers. The absence of unemployment effects may also reinforce the propensity to consume since precautionary savings motives due to unemployment risk are less salient.

7 Conclusions

This study provides evidence on the income effect and consumption response of Chinese households to the large cross-sectional and intertemporal variation of China's minimum wage. For the period 2002-2009, we identify more than 13,874 minimum wage changes across Chinese counties, and match them to the urban household survey (UHS), for a sample that covers 73,164 urban household-year observations. Our analysis shows that higher household incomes due to a minimum wage hike are fully spent by minimum-wage-dependent households. The magnitude of the estimates is consistent

with the estimates in the literature on income shocks in developing countries, see Wolpin (1982) and Paxson (1992).

We highlight a number of new insights. The propensity to consume is largest in households with two minimum wage earners and the effect is driven by households with children, whereas households without children feature higher saving rates. Our study also finds that, for households relying mostly on minimum wages, more than 40% of additional minimum wage income is invested in health care and educational spending with potential long-term benefits for household welfare.

We test whwther the high consumption propensity associated with minimum wage hikes is driven by borrowing constraints. A large sensitivity of consumption to incremental disposable income could be the result of an inability to smooth consumption over the life cycle. While the point estimates for the marginal propensity of consumption tend to be lower if we consider households less likely to be liquidity constrained, the difference is not statistically significant —possibly due to measurement error with respect to the liquidity proxies.

The large consumption propensity documented in this paper is indicative of substantial welfare effects for poor households. Moreover, unemployment effects are economically small at best, and statistically insignificant in spite of the considerable statistical power available. We reconcile this finding with the very low level of the minimum wage (relative to the median wage) reflecting overall modest labor costs arising from minimum wages in China.

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Figure I: Distribution of the Share S of Minimum Wage Income of Household

The graph plots the distribution of the share S of household income coming from minimum wages as defined in Section 2.1 for N=73164 households-years. The LHS plot features data for all the households, including those without minimum wage income $S = 0$ for which we have N=53054. The RHS plots the distribution of S conditional on $S > 0$, that is N=20110

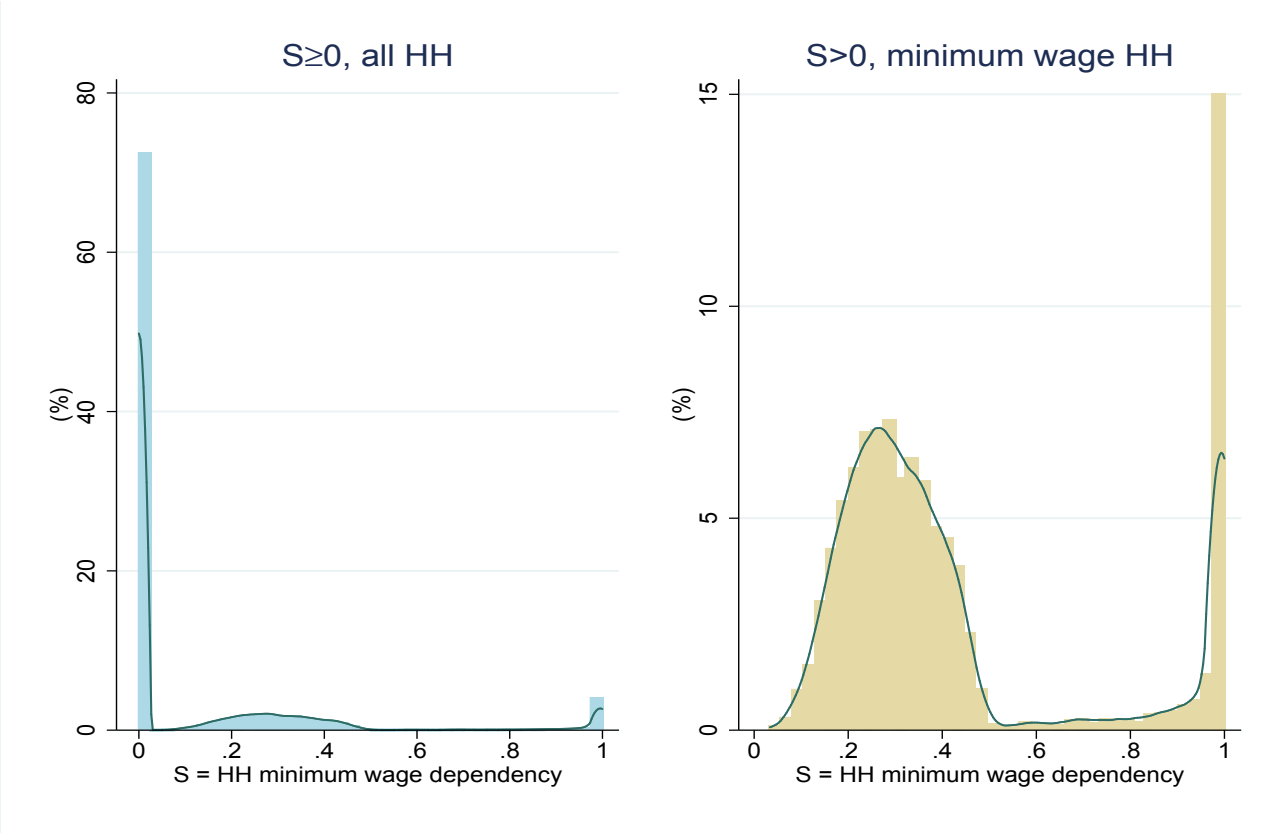


Figure II: Minimum Wage Variation

Proportion of counties increasing their nominal minimum wage in China, 1996-2012. We plot by year the percentage of matched Chinese counties with a strictly positive minimum wage change between 0 and 10%, between 10% and 20%, and above 20%, respectively. The column height represents the combined share of counties experiencing an increase in their nominal minimum wage in a given year.

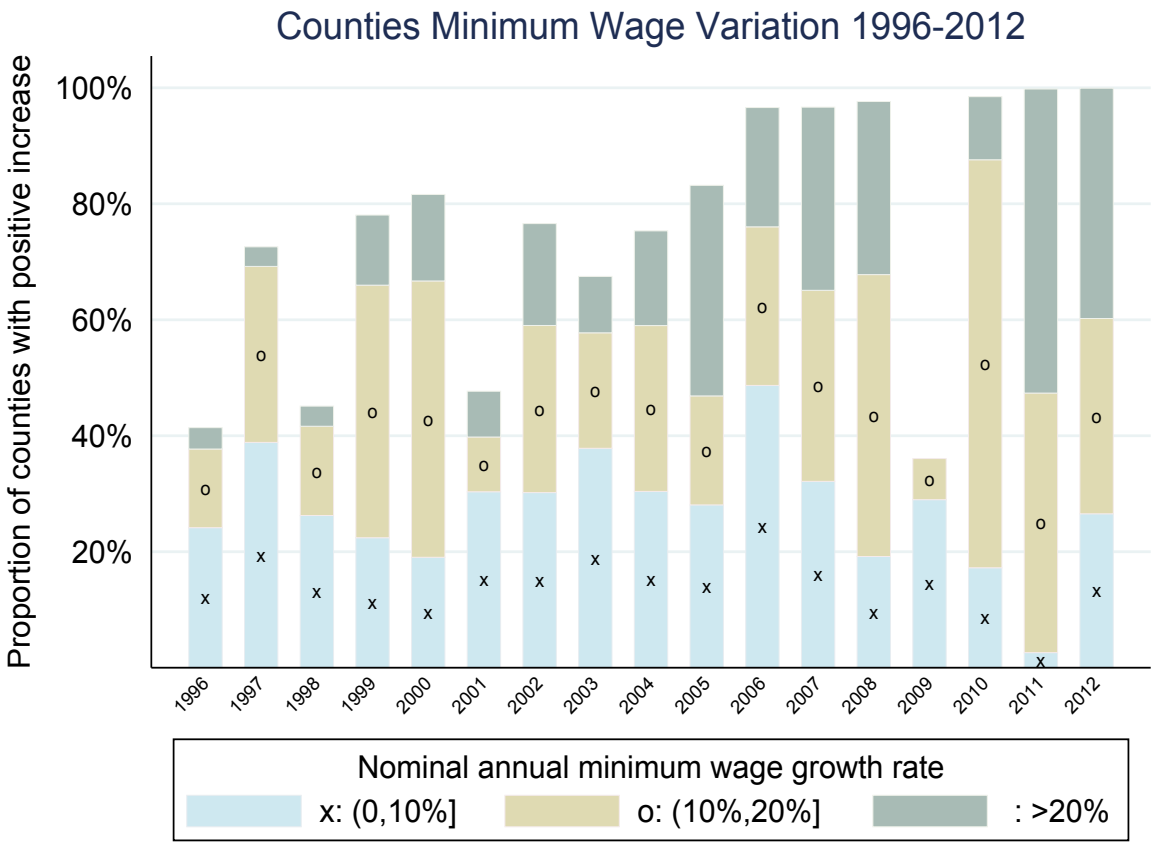


Table I: Labor Supply and Minimum Wage Bite

We report in Panel A the monthly working hours for the entire sample of urban full-time workers and in Panel B corresponding numbers for the subset of workers in minimum wage households. For both samples, the monthly hours worked are reported for counties that have an increase in the nominal minimum wage ($\Delta MW > 0$) compared to counties without a minimum wage increase ($\Delta MW = 0$). We also report t-statistics for the difference of means between these two groups accounting for clustered standard errors at the county-level. The data on monthly hours worked are not available for the years 2007-2009. Panel C documents average minimum wage bite by year and the annual growth rate of the real minimum wage. The minimum wage bite is computed as the ratio of the minimum wage (MW) to the median wage in each county and then averaged across counties. Standard errors are provided in parentheses. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Year	2002	2003	2004	2005	2006	2007	2008	2009
Panel A: Workers in All Households ($S \geq 0$)								
Monthly hours worked if $\Delta MW > 0$	167.2	166.0	164.3	167.7	168.2	–	–	–
	(54.48)	(58.62)	(58.19)	(57.14)	(56.38)			
Monthly hours worked if $\Delta MW = 0$	164.3	163.7	167.8	165.1	177.8	–	–	–
	(58.16)	(56.78)	(56.21)	(60.34)	(69.02)			
T-test for difference in mean	2.99	2.33	−3.48	2.61	−9.59	–	–	–
	(2.35)	(2.04)	(1.99)	(2.40)	(6.12)			
Observations	31657	41654	43808	44027	38910	–	–	–
Panel B: Workers in Minimum Wage Households (S>0)								
Monthly hours worked if $\Delta MW > 0$	162.1	160.7	160.0	163.8	164.1	–	–	–
	(63.11)	(68.41)	(66.04)	(65.41)	(64.94)			
Monthly hours worked if $\Delta MW = 0$	156.5	160.3	162.4	159.2	174.5	–	–	–
	(68.33)	(62.72)	(64.27)	(73.56)	(76.96)			
T-test for difference in mean	5.60	0.46	−2.45	4.61	−10.37	–	–	–
	(2.57)*	(2.49)	(2.51)	(4.31)	(7.51)			
Observations	8065	10406	10705	10828	9240	–	–	–
Panel C: Minimum Wage Bite and Real Minimum Wage Growth								
Minimum wage relative to median wage	0.202	0.201	0.197	0.198	0.201	0.185	0.189	0.176
	(0.042)	(0.043)	(0.046)	(0.045)	(0.045)	(0.045)	(0.053)	(0.045)
Real minimum wage growth (p.p.)	10.42	4.65	5.55	10.29	7.51	8.65	8.80	2.93
	(8.55)	(6.71)	(8.96)	(8.08)	(6.86)	(8.11)	(6.20)	(4.09)

Table II: Minimum Wage Effects on Household Labor Income and Consumption

We regress the levels of household real annual labor income in RMB Columns (1)-(4), and household real consumption in RMB Columns (5)-(8), on the county real minimum wage level. The samples consist of all households for which the labor income share S from minimum wages is zero ($S = 0$), more than 25% ($S > 0.25$), more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. As specified in Equation 2, all regressions include individual members, household and city-level controls, household and interacted province-year fixed effects, and county trends. Standard errors are clustered at county-level, and *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively. In our case of a single instrument (minimum wage) and a single endogenous regressor (labor income) the t-value for the rejection of the weak instrument should be bigger than $\sqrt{10} \approx 3.2$. In Columns (1)-(4) we report the t-value for the first stage regression.

Dep. variables:	Household Labor Income (First Stage)				Household Consumption (Reduced Form)			
	$S = 0$	$S > 0.25$	$S > 0.5$	$S > 0.75$	$S = 0$	$S > 0.25$	$S > 0.5$	$S > 0.75$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Minimum wage	−0.022	0.364	1.378	1.529	−1.076	1.207	1.677	1.990
	(0.574)	(0.561)	(0.632)**	(0.692)**	(0.637)*	(0.553)**	(0.718)**	(0.823)**
HH-members controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	44288	12066	3699	3374	44288	12066	3699	3374
N clusters	625	491	346	335	625	491	346	335
N. households	20450	5684	1785	1627	20450	5684	1785	1627
Adjusted R^2	0.256	0.515	0.700	0.705	0.230	0.433	0.563	0.594

Table III: Household Consumption and Predicted Labor Income Shocks

We report 2SLS level regressions in which real annual household consumption is regressed on the household's annual predicted real labor income level. The samples consist of all households for which the labor income share S from minimum wages is zero ($S = 0$), more than 25% ($S > 0.25$), more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. As specified in Equation 3, all regressions include individual members, household and city-level controls, household and interacted province-year fixed effects, and county trends. Two tests for the relevance and strength of the instrument are reported: the Kleibergen and Paap (2006) test under the null hypothesis of irrelevant instruments, and the Anderson and Rubin (1949) weak instrument test. Standard errors are clustered at the county-level, and *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Household Consumption			
	$S = 0$	$S > 0.25$	$S > 0.5$	$S > 0.75$
	(1)	(2)	(3)	(4)
Household labor income	61.461	3.314	1.217	1.301
	(1986.224)	(4.232)	(0.574)**	(0.648)**
HH member controls	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
Prov $\times$ year FE	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes
Observations	41709	11309	3442	3137
Singleton groups	2579	757	257	237
N clusters	597	469	323	314
N households	17871	4927	1528	1390
Irrelevant instr. (p-value)	0.975	0.529	0.031	0.026
Weak instr. (p-value)	0.102	0.059	0.049	0.031

Table IV: Household Consumption by Expenditure Type

The table shows 2SLS estimates using sub-components of household consumption as dependent variables: expenditure on health and education is used in Columns (1)-(3), non-durable goods in Columns (4)-(6), and expenditure on durable goods in Columns (7)-(9). The samples consist of all households for which the labor income share S from minimum wages is zero ($S = 0$), more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. As specified in Equation 3, all regressions include individual members, household and city-level controls, household and interacted province-year fixed effects, and county trends. Standard errors are clustered at county-level, and *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variables:	Health and Educ. Exp.			Non-Durables Exp.			Durables Exp.		
	$S = 0$	$S > 0.5$	$S > 0.75$	$S = 0$	$S > 0.5$	$S > 0.75$	$S = 0$	$S > 0.5$	$S > 0.75$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Household labor income	3.181	0.323	0.496	13.546	0.561	0.481	0.151	0.169	0.239
	(9.381)	(0.249)	(0.301)*	(434.526)	(0.314)*	(0.300)	(2.041)	(0.308)	(0.384)
HH member controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prov × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	36624	3055	2779	41709	3442	3137	36624	3055	2779
N clusters	290	228	224	597	323	314	290	228	224
N households	15821	1361	1236	17871	1528	1390	15821	1361	1236

Table V: Liquidity Effects on Household Consumption

We report 2SLS level regressions where real annual household consumption is regressed on the household's annual real labor income and on additional interaction terms identifying non-liquidity constrained households. The interaction terms are property income dummy in Columns (1)-(3), a capital income dummy for interest, dividends, and insurance income in Columns (4)-(6), and a dummy for (debt-free) house ownership in Columns (7)-(9). The samples consist of all households for which the labor income share S from minimum wages is zero ($S = 0$), more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. As specified in Equation 3, all regressions include individual members, household and city-level controls, household and interacted province-year fixed effects, and county trends. Standard errors are clustered at county-level, and *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Household Consumption								
	$S=0$ (1)	$S>0.5$ (2)	$S>0.75$ (3)	$S=0$ (4)	$S>0.5$ (5)	$S>0.75$ (6)	$S=0$ (7)	$S>0.5$ (8)	$S>0.75$ (9)
Household labor income	8.749	1.219	1.299	12.157	1.237	1.330	56.022	1.282	1.441
	(34.353)	(0.536)**	(0.602)**	(67.427)	(0.556)**	(0.650)**	(1723.496)	(0.714)*	(0.792)*
Household labor income × property dummy	−0.919	−0.268	−0.269						
	(3.964)	(0.258)	(0.298)						
Household labor income × capital income dummy				−0.900	−0.219	−0.257			
				(5.650)	(0.184)	(0.219)			
Household labor income × house ownership dummy							3.954	−0.090	−0.186
							(119.955)	(0.250)	(0.268)
HH member controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prov × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	41709	3442	3137	41709	3442	3137	41709	3442	3137
Non-liquidity constrained obs. (%)	10.6	6.3	5.41	10.02	7.24	7.14	78.7	76.13	75.94
N clusters	597	323	314	597	323	314	597	323	314
N households	17871	1528	1390	17871	1528	1390	17871	1528	1390

Table VI: Household Consumption and Household Structure

We report 2SLS level regressions where real annual household consumption is regressed on the household's annual real labor income and on additional interaction terms identifying household structure. The interaction terms are a dummy for one or more children in the household in Columns (1)-(3), an additional dummy for one or more male children in the household in Columns (4)-(6), or an additional dummy for one or more male children older than 24 years in Columns (7)-(9). The samples consist of all households for which the labor income share S from minimum wages is zero ($S = 0$), more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. As specified in Equation 3, all regressions include individual members, household and city-level controls, household and interacted province-year fixed effects, and county trends. Standard errors are clustered at the county-level, and *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Household Consumption								
	$S=0$ (1)	$S>0.5$ (2)	$S>0.75$ (3)	$S=0$ (4)	$S>0.5$ (5)	$S>0.75$ (6)	$S=0$ (7)	$S>0.5$ (8)	$S>0.75$ (9)
Household labor income	62.358	0.621	0.516	38.785	0.563	0.449	−19.963	0.567	0.447
	(1610.347)	(0.773)	(0.784)	(617.643)	(0.685)	(0.695)	(166.631)	(0.715)	(0.710)
Household labor income	−12.917	0.729	0.848	−8.527	0.674	0.781	5.721	0.681	0.816
× child(ren) dummy	(341.169)	(0.355)**	(0.303)***	(140.766)	(0.373)*	(0.321)**	(45.547)	(0.354)*	(0.287)***
Household labor income				1.020	0.087	0.100			
× male child dummy				(16.675)	(0.157)	(0.171)			
Household labor income							−6.479	0.121	0.098
× adult child dummy							(54.680)	(0.157)	(0.166)
HH member controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prov × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	41709	3442	3137	41709	3442	3137	41709	3442	3137
N clusters	597	323	314	597	323	314	597	323	314
N households	17871	1528	1390	17871	1528	1390	17871	1528	1390

Internet Appendix

Consumption Response to Minimum Wages:

Evidence from Chinese Households

Appendix: Table of Content

A Predicting Minimum Wage Change

In this section we show that the timing of minimum wage changes is unpredictable conditional on rich information sets of socio-economic and political data typically beyond the reach of individual households. First, we use county-level socio-economic data to explore the predictability of minimum wage changes. Second, we aggregate the Urban Household Survey (UHS) data and examine whether these alternative county-level aggregates show any predictability for the minimum wage change. Third, we use biographical data on the two most important political decision makers in Chinese counties, namely the mayor and party secretary, to predict minimum wage changes. Throughout this exercise, we code any nominal minimum wage change in a county as a binary (0/1) decision. Nevertheless, all the results are robust if the (level) change of the minimum wage becomes the dependent variable or if we use the natural logarithm of the new to the old minimum wage.

A.1 Predictability Based on County-Level Data

Table A-I presents OLS regression based on county-level socio-economic data to examine the predictability of minimum wage changes codes as binary outcomes (0/1). The socio-economic data are sourced from the Prefecture Statistical Annual Yearbooks, the Fiscal Statistics for Prefectures, Municipalities and Counties and the National Demographic Yearbook. We note that these county-level data have an imperfect overlap with the sample of counties in our main data and so we do not use them in the analysis on household consumption. Yet they are still a useful data source for a test of predictability of the minimum wage change.

Columns (1)-(3) include the listed covariates as contemporaneous changes and Columns (4)-(6) as lagged changes, then with a one-year forward time shift to capture anticipation effects, Columns (7)-(9) assess anticipation effects by policymakers. All variables are expressed in real terms using a province-level consumer price deflator. We find that none of the county variables robustly predicts (either as contemporaneous or lagged changes) minimum wage across specifications. In Column (3) only the average salary in the county shows weak negative relation with the decision to change the minimum wage. But this marginal significance disappears when we use two-way clustering at the

county and province-year levels (not shown). The only robust, marginally significant and weak effect of the county-level government budget balance over GDP in Column (9). Overall, we conclude that the results indicate no systematic relationship between county-level socio-economic variables and minimum wage changes.

Table A-I: Predictability with Country Level Data, 1997-2010

The minimum wage change as the dependent variable is coded as a binary decision outcome (1/0) with one representing a change and regressed on various county-level socio-economic variables. Columns (1)-(3) use covariates in first differences contemporaneous with the minimum wage change; Columns (4)-(6) use covariates in first differences lagged by one year relative to the minimum wage change, Columns (7)-(9) use forward one-year covariates in first differences relative to the minimum wage change.. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Minimum Wage Change Dummy (1/0)								
	Covariates in Δ_t			Covariates in Δ_{t-1}			Covariates in Δ_{t+1}		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Ln(County real GDP)	−0.042	−0.191	−0.005	−0.076	−0.097	−0.012	0.204***	0.132**	0.004
	(0.035)	(0.045)***	(0.010)	(0.028)***	(0.049)**	(0.009)	(0.044)	(0.054)	(0.020)
Ln(County population)	−0.077	−0.240	0.005	0.165	0.176	0.012	0.157	0.121	−0.043
	(0.103)	(0.128)*	(0.009)	(0.101)	(0.153)	(0.010)	(0.121)	(0.124)	(0.061)
Ln(County total employment)	−0.014	−0.011	−0.001	0.004	0.007	0.000	0.031*	0.038*	−0.004
	(0.014)	(0.016)	(0.001)	(0.016)	(0.023)	(0.001)	(0.018)	(0.020)	(0.003)
County government balance/GDP	−0.001	−0.001	0.000	0.000	0.000	0.000	−0.001*	−0.001	−0.001*
	(0.001)**	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)
Ln(County salary per capita)	0.016	0.002	−0.020	0.021	0.006	0.002	0.016	−0.010	−0.001
	(0.013)	(0.013)	(0.011)*	(0.007)***	(0.007)	(0.001)	(0.010)	(0.012)	(0.005)
Ln(County employment in agriculture)	−0.021	−0.016	0.000	0.026	0.030	0.001	−0.010	−0.002	−0.001
	(0.009)**	(0.010)	(0.001)	(0.009)***	(0.012)**	(0.001)	(0.008)	(0.006)	(0.002)
Ln(Real county savings)	−0.002	−0.007	−0.002	0.014	0.005	0.001	0.013	0.009	0.001
	(0.015)	(0.016)	(0.002)	(0.013)	(0.019)	(0.001)	(0.013)	(0.014)	(0.004)
County FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	No	No	Yes	No	No	Yes	No	No
County trends	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Province × year FE	No	No	Yes	No	No	Yes	No	No	Yes
Observations	8716	8716	8714	7139	7139	7137	8716	8716	8714
N clusters	1651	1651	1651	1647	1647	1647	1651	1651	1651
Adjusted R^2	0.591	0.697	0.990	0.625	0.686	0.992	0.534	0.715	0.972

A.2 Predictability Based on Aggregates of Household Survey Data

Table A-II explores the predictability of minimum wage changes based on county-level aggregates of the Urban Household Survey (UHS) used throughout the paper. The set of counties covered differs from Table A-I and the time span is restricted to the period 2002-2009. The county-level aggregates of the UHS data are complimented by city-level variables drawn from the China City Statistical Yearbooks in the Chinese Statistical Yearbook Database (CNKI). We first run covariates at time t in Columns (1)-(4), and then add Columns (5)-(8) by replicating the previous estimates with the covariates shifted one year forward to assess anticipation effects by policymakers. While household variables are not correlated with the decision to increase the minimum wage at time t, the logarithm of population shows a negative and robust correlation one-year ahead. This suggests that county-level population trends might affect the decision to increase the minimum wage negatively.

In Table A-III we repeat the exercise of Table A-II but focus on low-wage households. We construct county-level aggregates from the UHS data as before but this time for the household group with a minimum wage share $S > 0.5$ and add city-level variables. Columns (1)-(2) and (5)-(6) present estimates with standard errors clustered at the county-level; Columns (3)-(4) and (7)-(8) report standard errors two-ways clustered at the county and province-year level. Across the specifications we cannot find a clear and robust effect of these variables on the decision to change the minimum wage. This non-predictability applied both to contemporaneous variables and those measuring country level aggregates one year ahead. In these set of regressions the significant negative relation between the one-year ahead logarithm of county-level population and the minimum wage decision also disappears.

Table A-II: Predictability with UHS-Based County Level Data, 2002-2009

The minimum wage change as the dependent variable is coded as a binary decision outcome (1/0). We construct county-level aggregates from the UHS data and add city-level variables. Columns (1)-(2), (5)-(6) present estimates with standard errors clustered at the county-level; Columns (3)-(4), (7)-(8) report standard errors clustered two ways at the county and province-year level. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Minimum Wage Change Dummy (0/1)							
	Covariates in Δ_t				Covariates in Δ_{t+1}			
Standard error clustering:	County		Two-way		County		Two-way	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
County-level controls:								
Ln(HH Consumption)	−0.008	0.047	−0.008	0.047	−0.037	−0.065	−0.037	−0.065
	(0.108)	(0.057)	(0.111)	(0.079)	(0.087)	(0.066)	(0.081)	(0.071)
Ln(HH Total Expenditure)	0.001	−0.028	0.001	−0.028	0.129	0.066	0.129	0.066
	(0.092)	(1.441)	(0.105)	(0.593)	(0.089)	(0.048)	(0.095)	(0.050)
Ln(HH Savings)	−0.002	−0.006	−0.002	−0.006	0.003	−0.005	0.003	−0.005
	(0.019)	(4.331)	(0.018)	(1.040)	(0.016)	(0.011)	(0.017)	(0.010)
Share of County SOE workers	−0.183	0.089	−0.183	0.089	−0.090	0.079	−0.090	0.079
	(0.148)	(2.079)	(0.178)	(1.651)	(0.121)	(0.082)	(0.149)	(0.096)
City-level controls:								
Ln(GDP)	0.484**	0.070	0.484	0.070	0.866***	−0.023	0.866**	−0.023
	(0.211)	(2.061)	(0.451)	(1.358)	(0.223)	(0.119)	(0.382)	(0.125)
Ln(Population)	−0.130	0.090	−0.130	0.090	−0.392***	−0.380***	−0.392**	−0.380*
	(0.084)	(1.524)	(0.144)	(1.025)	(0.111)	(0.136)	(0.163)	(0.196)
Unemployment rate	0.208	−0.065	0.208	−0.065	−0.184	−0.127	−0.184	−0.127
	(0.273)	(2.788)	(0.336)	(1.528)	(0.143)	(0.136)	(0.237)	(0.165)
Ln(Employment)	0.167	−0.130	0.167	−0.130	−0.688***	0.156	−0.688	0.156
	(0.199)	(2.245)	(0.331)	(1.268)	(0.244)	(0.208)	(0.526)	(0.239)
Employment/Population	−0.624	0.357	−0.624	0.357	−0.115	−2.013	−0.115	−2.013
	(1.121)	(2.713)	(1.580)	(1.614)	(1.557)	(2.335)	(1.922)	(2.841)
County FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	No	Yes	No	Yes	No	Yes	No
County trends	No	Yes	No	Yes	No	Yes	No	Yes
Province × year FE	No	Yes	No	Yes	No	Yes	No	Yes
Observations	1602	1295	1296	1295	1586	1280	1281	1280
N clusters	591	285	98	97	587	282	98	97
Adjusted R^2	0.353	0.958	0.487	0.958	0.243	0.943	0.443	0.943

Table A-III: Predictability with UHS-Based County Level Data for the $S > 0.5$ households, 2002-2009

The minimum wage change as the dependent variable is coded as a binary decision outcome (1/0) with 1 representing a change. We construct county-level aggregates from the UHS data for the household group with a minimum wage share $S > 0.5$ and add city-level variables. Columns (1)-(2) and (5)-(6) present estimates with standard errors clustered at the county-level; Columns (3)-(4) and (7)-(8) report standard errors clustered two ways at the county and province-year level. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Minimum Wage Change Dummy (0/1)							
	Covariates in Δ_t				Covariates in Δ_{t+1}			
Standard error clustering:	County		Two-way		County		Two-way	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
County-level controls:								
Ln(HH Consumption)	0.345**	0.027	0.345**	0.027	−0.215	−0.131	−0.215	−0.131
	(0.154)	(0.088)	(0.140)	(0.084)	(0.175)	(0.102)	(0.173)	(0.118)
Ln(HH Total Expenditure)	−0.277*	−0.035	−0.277*	−0.035	0.294*	0.115	0.294*	0.115
	(0.144)	(0.094)	(0.144)	(0.088)	(0.163)	(0.100)	(0.173)	(0.104)
Ln(HH Savings)	−0.001	−0.009	−0.001	−0.009	0.008	0.011	0.008	0.011
	(0.017)	(0.012)	(0.018)	(0.011)	(0.019)	(0.017)	(0.020)	(0.013)
Share of County SOE workers	0.175	0.346	0.175	0.346	0.051	0.466	0.051	0.466
	(0.309)	(0.390)	(0.267)	(0.359)	(0.353)	(0.456)	(0.343)	(0.440)
City-level controls:								
Ln(GDP)	0.423	0.020	0.423	0.020	0.159	−0.196	0.159	−0.196
	(0.455)	(0.281)	(0.575)	(0.245)	(0.485)	(0.340)	(0.640)	(0.274)
Ln(Population)	−3.377	−1.539	−3.377	−1.539	−0.736	0.095	−0.736	0.095
	(3.191)	(2.029)	(3.633)	(2.232)	(2.055)	(1.523)	(2.817)	(1.610)
Unemployment rate	1.024	0.910	1.024	0.910	−0.963	−0.157	−0.963	−0.157
	(0.692)	(0.806)	(0.668)	(0.631)	(0.731)	(0.703)	(0.767)	(0.433)
Ln(Employment)	−1.878***	−0.599	−1.878**	−0.599	−0.023	1.284	−0.023	1.284
	(0.672)	(0.591)	(0.866)	(0.600)	(0.851)	(0.924)	(1.064)	(1.135)
Employment/Population	19.843***	1.852	19.843**	1.852	−13.234	−11.548	−13.234	−11.548
	(7.553)	(5.167)	(8.650)	(4.766)	(8.491)	(7.807)	(9.331)	(9.859)
County FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	No	Yes	No	Yes	No	Yes	No
County trends	No	Yes	No	Yes	No	Yes	No	Yes
Province × year FE	No	Yes	No	Yes	No	Yes	No	Yes
Observations	598	479	489	479	593	474	485	474
N clusters	255	145	75	66	252	142	75	66
Adjusted R^2	0.331	0.966	0.547	0.966	0.251	0.955	0.468	0.955

A.3 Predictability Based on Biographical Data of Local Political Leaders

In democratic societies, important political decisions like minimum wage changes are subject to open political debate and depend on the parliamentary strength of competing political parties. Chinese politics represents an entirely different political setting, important policy issues can be contingent on the preferences of the key local decision makers, Yao and Zhang (2015). Minimum wage changes in China originate in an administrative and political process that is not subject to an open debate that involves the public at large. This implies that little public information is generated that would allow households to anticipate minimum wage changes. Moreover, the law only stipulates the requirement of regular review, not a mandatory change. While individual policy preferences are hard to observe, such preferences and policy outcomes could nevertheless be related to personal political career paths and curricula or to demographic characteristics of local leaders.

The two main political actors in Chinese local politics are the mayor, appointed by the city communist party assembly, and the city party secretary, appointed by personal office of the central party administration. Their biographical data are available in the Chinese Bureaucracies and Leaders Database, which is constructed and maintained by the National Chengchi University.[24] We use biographical information about their respective tenure, their first year in office, the their year of promotion and retirement, as well as their age and experience. Table A-IV presents the regression results with seven biographical variables for the city party secretary and an equal number for the city mayor. Yet none of these biographical variables has any predictive value for minimum wage change. Similar results are obtained if we define the dependent variable as first difference in minimum wage levels.

Overall, we conclude from Tables A-I, A-II and A-IV that minimum wage changes in China are not predictable based on county-level socio-economic data or even biographical data on the two most powerful city politicians.

[24] See http://ics.nccu.edu.tw/chinaleaders/. The data are documented in Shih et al. (2010) and Yao and Zhang (2015).

Table A-IV: Political Characteristics and Minimum Wage Changes, 1997-2010

The minimum wage change as the dependent variable is a binary outcome (1/0) with 1 representing a change. It is regressed on the characteristics of the city party secretary and the mayor. Columns (1)-(2) present estimates with standard errors clustered at the county-level; Columns (3)-(4) report standard errors clustered at the county and province-year level. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Minimum Wage Change Dummy (1/0)			
Standard error clustering:	County		Two–way	
	(1)	(2)	(3)	(4)
Party secretary characteristics:				
First year in office dummy	0.018	0.004	0.018	0.004
	(0.009)*	(0.004)	(0.009)*	(0.004)
Promotion year dummy	0.049	−0.005	0.049	−0.005
	(0.026)*	(0.007)	(0.026)*	(0.010)
Retirement year dummy	0.079	0.028	0.079	0.028
	(0.034)**	(0.013)**	(0.034)**	(0.017)
Age	0.047	0.018	0.047	0.018
	(0.057)	(0.016)	(0.055)	(0.028)
Age^2	0.000	0.000	0.000	0.000
	(0.001)	(0.000)	(0.001)	(0.000)
Province experience dummy	−0.016	0.005	−0.016	0.005
	(0.030)	(0.009)	(0.030)	(0.009)
City tenure length (years)	0.007	0.004	0.007	0.004
	(0.007)	(0.003)	(0.007)	(0.003)
Mayor characteristics:				
First year in office dummy	0.090	−0.008	0.090	−0.008
	(0.091)	(0.026)	(0.085)	(0.026)
Promotion year dummy	0.030	−0.001	0.030	−0.001
	(0.023)	(0.005)	(0.025)	(0.007)
Retirement year dummy	−0.016	−0.001	−0.016	−0.001
	(0.043)	(0.013)	(0.043)	(0.018)
Age	−0.003	0.006	−0.003	0.006
	(0.052)	(0.017)	(0.063)	(0.018)
Age^2	0.000	0.000	0.000	0.000
	(0.001)	(0.000)	(0.001)	(0.000)
Province experience dummy	0.024	0.003	0.024	0.003
	(0.023)	(0.006)	(0.026)	(0.008)
City tenure length (years)	0.090	−0.007	0.090	−0.007
	(0.091)	(0.025)	(0.084)	(0.025)
County FE	Yes	Yes	Yes	Yes
Year FE	Yes	No	Yes	No
County trends	No	Yes	No	Yes
Province × year FE	No	Yes	No	Yes
Observations	14548	14544	14548	14544
N clusters	258	257	232	228
Adjusted R^2	0.383	0.964	0.383	0.964

A.4 Persistence of the Minimum Wage Hike

Another issue concerns the intertemporal persistence of *real* minimum wage changes. Even if nominal minimum wage change are not likely to be reversed, price inflation can induce the mean reversion of the real minimum wage. If, on the other hand, *real* minimum wages feature a high degree of persistence, then the increase can be perceived as a non transitory income shock by the households. To explore the intertemporal persistence of real minimum wage increases, we run the regression

$$\Delta MW_{c,t} = \alpha_0 + \rho MW_{c,t-1} + a_1 t + \delta_{p,t} + \gamma_c + \varepsilon_{c,t}, \tag{5}$$

where a coefficient $\rho < 0$ captures mean reversion to a time trend t of the real minimum wage MW; δ_{pt} denote a province-year fixed effect and γ_c a county fixed effect.

Table A-V reports the regression results for the period 1992-2012 and for the shorter sample period 2002-2009 corresponding to the time frame of our analysis. We progressively augment the specification with county fixed effects and county trends to mitigate the impact of cross-sectional dependence. The coefficient of interest ρ is negative in most specifications and statistically significant. Yet, the magnitude of the mean reversion is economically weak. For instance, the coefficient in Column (4) implies a half-life of 5.47 years for the real minimum wage.[25]

We also use a unit root test (adapted to panel data) to test for real minimum wage persistence in a narrow statistical sense, Harris and Tzavalis (1999). Under the null hypothesis of a unit root (i.e. the real minimum wage increase is persistent) such tests provide a critical value for ρ below which the unit root cannot be rejected. The H-T test confirms the persistence of the minimum wage when we do not demean the real minimum wage to take into account cross-county dependence. However, when we compute in each time period the mean of the minimum wage across counties and subtract this mean from the series, the test rejects the null.[26]

[25] Half-life is computed adjusting the standard formula to take into account that we are using the first difference of the minimum wage as dependent variable: $ln(0.5)/ln(-0.119+1) = 5.471$. Using the coefficient in Column (8) implies a half-life of 2.31 years.

[26] To corroborate these findings, we also undertake a test that relaxes the assumption about the common autoregressive coefficient and runs the test for each cross-section under the null that *all* panels have unit roots, against the alternative that *some* panels are stationary. This test fails to reject the null hypothesis except when we include a time trend and demean the series to reduce the influence of cross-section dependence.

Table A-V: Persistence of Real Minimum Wage Shock

We regress changes in the real minimum wage (ΔMW_{ct}) on the lagged real minimum wages (MW_{ct-1}) controlling for trend growth. The regressions add county or province-year fixed effects as specified in Equation 5 to limit the influence of cross-county spatial dependence. A significant negative coefficient implies reversion of the minimum wage shocks to trend growth. Standard errors clustered at county-level are shown in parentheses. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Real Minimum Wage Change, $\Delta MW_{c,t}$							
	Period 1992-2012				Period 2002-2009			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$MW_{c,t-1}$	−0.005	0.022	−0.118	−0.119	−0.031	0.023	−0.259	−0.260
	(0.003)	(0.003)***	(0.008)***	(0.009)***	(0.005)***	(0.003)***	(0.011)***	(0.012)***
Time trend	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province× year FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes
County FE	No	No	Yes	No	No	No	Yes	No
County trends	No	No	No	Yes	No	No	No	Yes
Observations	37320	37320	37320	37320	17464	17464	17464	17464
N clusters	2183	2183	2183	2183	2183	2183	2183	2183
R^2	0.310	0.862	0.871	0.876	0.011	0.810	0.842	0.852

Figure A-I: Non-Compliance with the Minimum Wage Regulation in China 2002-2009

We report two measures of non-compliance with minimum wage regulation by year. The left-hand scale measures the share of workers with a wage below the minimum wage in their county. The right-hand scale documents the average deviation of non-compliant wages from the county minimum wage for all worker paid below the minimum wage. We exclude from the sample part-time workers and some other worker groups as described in Appendix B.

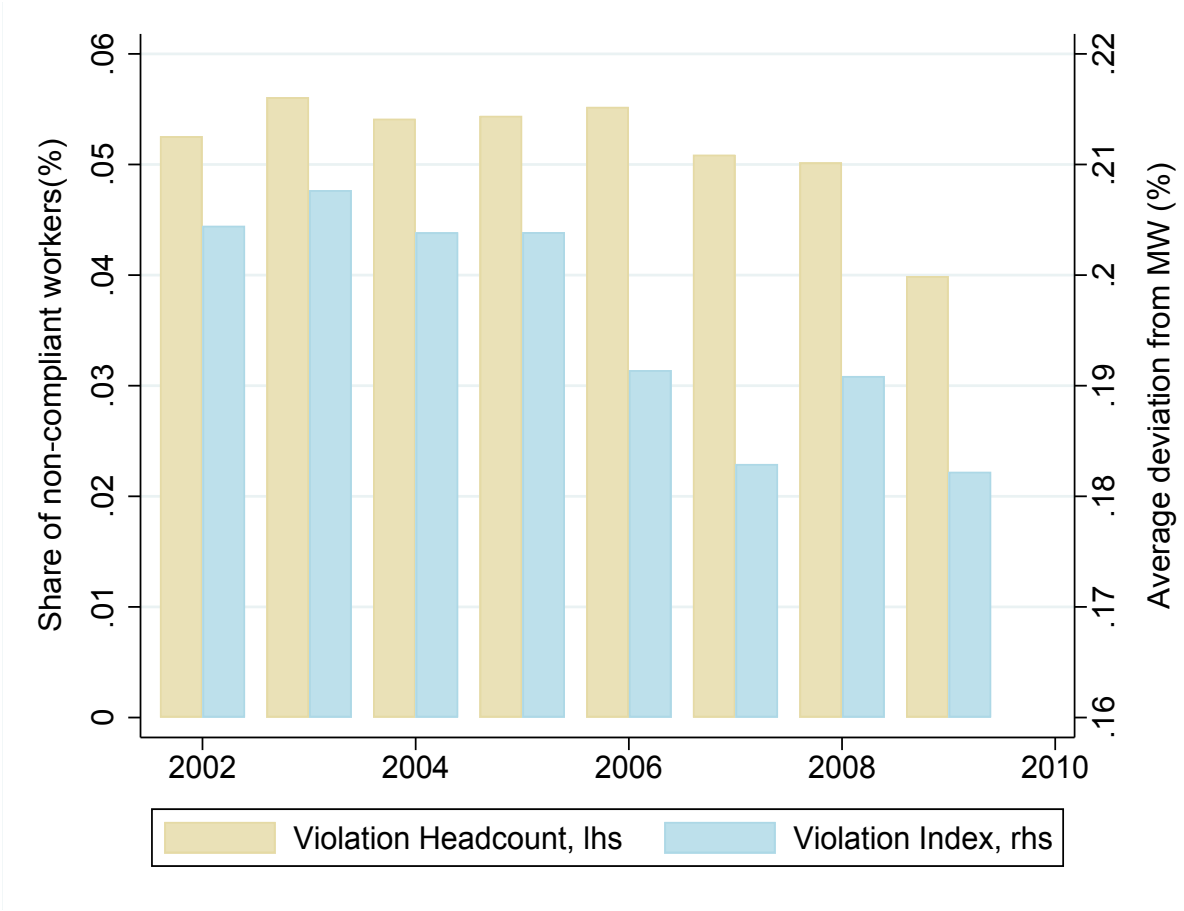
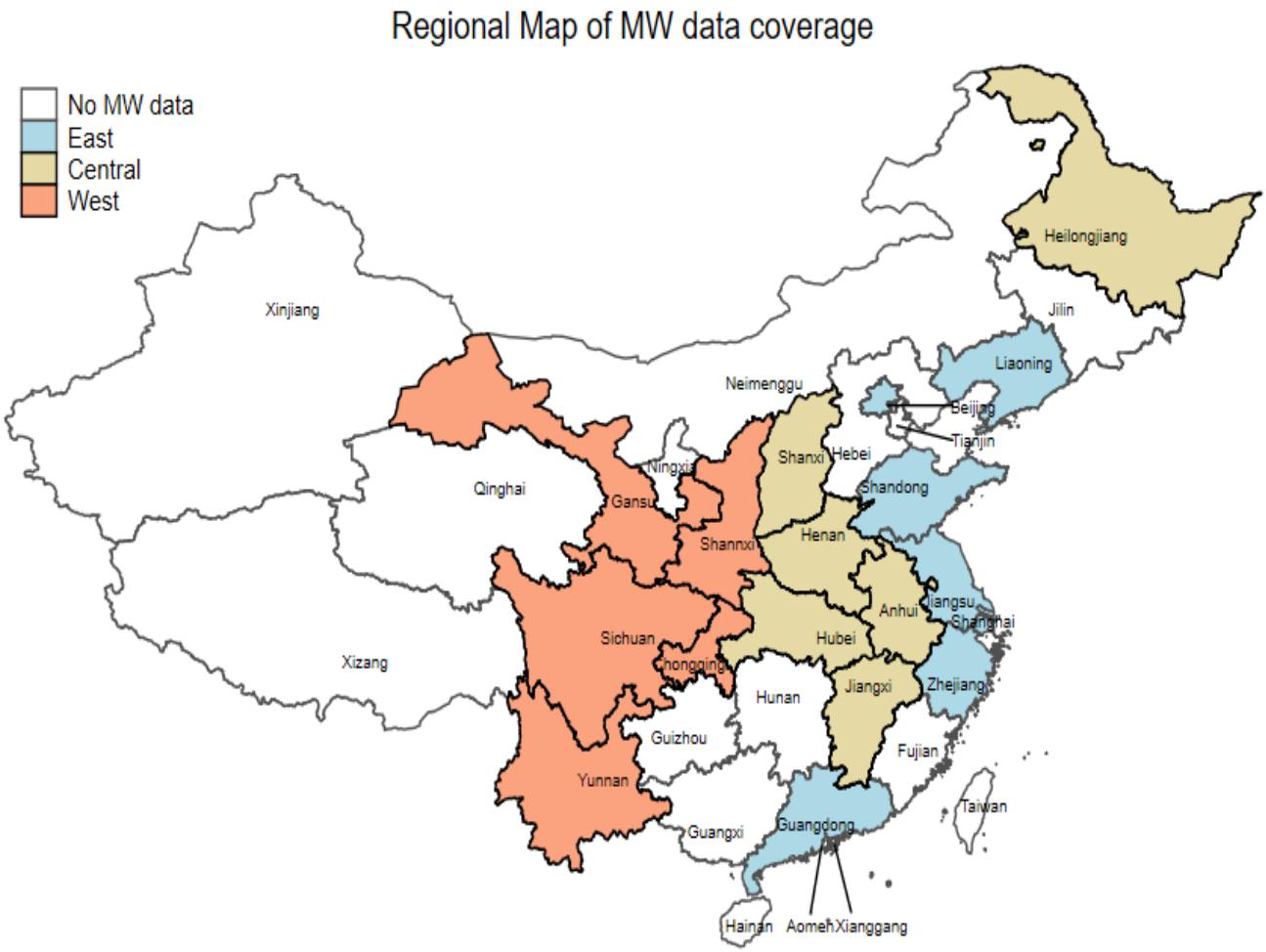


Figure A-II: Map of Minimum Wage Data Coverage

The figure maps the 18 provinces covered by minimum wage data. The upper chart shows provinces with coverage (green). The bottom chart splits them across three geographical regions. **East**: Beijing, Guangdong, Jiangsu, Liaoning, Shandong, Shanghai, and Zhejiang; **Central**: Anhui, Heilongjiang, Henan, Hubei, Jiangxi and Shanxi; **West**: Chongqing, Gansu, Shaanxi, Sichuan, and Yunnan.



B Sample Construction

China's Urban Household Survey (UHS) has two layers: household and individual household member. At the household level, we dispose of data on various consumption items and household income. At the level of individual household members, additional data captures member's income, income type, employment status, years of education, years of work experience, etc. The raw UHS data constitutes a sample of 201,795 household-year observations and 773,330 household-member-year cells for the period 2002-2009. In this section we present the cleaning and construction of our dataset, including the filters applied for the computation of the share S.[27]

B.1 Household Dataset

The following data filters are applied to the household data:

1. To construct a panel structure we only retain households that are observed at least twice in the UHS data, i.e. we drop household that are observed only once, this results in a drop of 68,779 household-year observations. Table B-IV shows that the average length of stay in the UHS for our households is three years.

2. We retain only households reporting at least two wage earning members in their first year of sampling in order to compute the share S consistently prior to treatment and avoid self-selection into treatment bias since some household members can decide to move into employed status after a minimum wage increase (i.e. we drop 8,487 household-year observations, i.e. 4.2% of observations).

[27]For a comparison of the Chinese UHS with US data, see Ge and Yang (2014); Feng et al. (2017); Curtis et al. (2015); Coeurdacier et al. (2015); İmrohoroğlu and Zhao (2018), Dai et al. (2021), and Choukhmane et al. (2023). UHS data has been used for research on a variety of topics, including crime (Edlund et al. (2013); Booth et al. (2022)), education (Li et al. (2012); Yuan and Zhang (2015)), fertility (Huang et al. (2021)), the gender gap (Zhang et al. (2008); Ong et al. (2020)), globalization issues (Han et al. (2012); Han et al. (2016); Dai et al. (2021)), household savings (Chamon and Prasad (2010); Coeurdacier et al. (2015); Curtis et al. (2015); İmrohoroğlu and Zhao (2018); Choukhmane et al. (2023)), consumption and income inequality (Cai et al. (2010); Li and Wan (2015); Li et al. (2016); Ding and He (2018); Bai et al. (2020); Painter et al. (2022)), housing wealth (Glaeser et al. (2017); Piketty et al. (2019); Zhao et al. (2022)), marriage markets (Zhang (2021)), and wage structure (Ye et al. (2015); Zhang (2021)) Within the household consumption literature, Jappelli and Pistaferri (2010b) use UHS data to examine the role of liquidity constraints for the marginal propensity to consume (MPC); Chen and Zha (2023) examine the effect of mortgage debt on the MPC; and Painter et al. (2022) estimate the MPC of housing wealth.

3. We eliminate households that provide contradictory information about the household head and for which we cannot compute the share S (228 household-year observations).

The final data set comprises 73,164 household-year observations. Descriptive statistics of the main variables and household demographics are shown in Tables B-II and B-III respectively. As shown in Table B-IV, 41.14% of household-year observations are composed by households with a 2 year stay in the UHS, 34.74% of household-year observations are composed by households with a three year stay in the UHS.

B.2 Individual Household Member Dataset

For minimum wages changes to matter for household income, a household needs to earn a positive share of its total household income from labor income near or at the minimum wage. Within each household, we identify the two highest wage earners conditioning on the first year the individual is observed in the panel. The selection of wage earners within each household follows these principles:

1. We ignore self-employed individuals (30,971 member-year observations); retired household members (124,901); retired and then re-employed household members (11,396), incapacitated persons (8,396), homeworkers (61,343), soldiers, social volunteers or part-time employed workers (17,879), students (56,737) and other household members undergoing training (251).

2. We ignore household members outside the labor force: below 16 years of age (75,317) and above 59 for males (2,566) and above 54 for females (2,363).

3. We ignore household members with inconsistent records where they are reported as unemployed and nevertheless receive a positive labor income (6363).

4. We ignore members with incomplete reporting on labor income (6,694) and workers with an annual real wage lower than 50% of the annual real minimum wage (12,293).

5. We ignore workers with abnormally high increases in their real wage (above 1000%) between the first and last year of observation in the panel (187).

6. We ignore household members with inconsistent age records that increase by more than one from one year to another or decrease (6,553) and household members who are not relatives (210).

The two highest wage earners within the household are in most cases (80.5%) the head of the household and the spouse. We retain for the household-level regressions their wage income, age, gender, level of education and years of work experience, years since migration to the city, marital status, industry and occupation.

B.3 Sampling Issues

The Chinese national Bureau of Statistics conducts the UHS based on a multi-stage probabilistic sample with a stratified design. Generally, a third of all household in the sample are replace by randomly selected households. As pointed out by Feng et al. (2017) and Ding and He (2018), the triennial rotation design has not always been strictly maintained resulting in a lower rotation ratio than was originally planned. For instance, some provinces have delayed replacing the first-stage sample at the end of the three-year period for funding reasons. Household know that they are supposed to participate for three consecutive years, but may fail to comply with the reporting requirements. Such early attrition from the sample can bias the estimation if non-participation is related to the policy shocks. For example, workers might more often cease to participate in the survey if they are better off after a minimum wage increase.

To examine such concerns, we define a dummy variable for attrition, i.e. early sample exit, if a worker is sampled for only one or two years. As our panel starts in 2002 and terminates in 2009, we cannot establish three-year participation for household that exit in 2002 or 2003, and therefore drop those households. The same applies for new vintages of household entering the UHS in the 2008 and 2009. The resulting sub-sample then allows us to mark all households characterized by early sample exit. Table B-I relates the attrition dummy (as dependent variable) to the natural logarithm of the minimum wage using the previous control variables. We find not evidence that the attrition characteristics correlates with the minimum wage level. This finding is confirmed for all groups of

minimum wage dependency, and holds in both the sample of household composed only by the best two earners in Columns (1)-(4) and the full sample of household members in Columns (5)-(8).

Table B-I: Panel Attrition

We define a dummy variable for households which exit the UHS panel early before the three reporting years and relate such attrition to the minimum wage. The attrition dummy is coded by one if the worker stays in the panel only one or two years and zero otherwise, see Section 2.1 for details. Standard errors clustered at county-level are shown in parentheses. All regressions include province-year fixed effects, and a linear county time trend. We include time varying worker characteristics for family size, outright house ownership, age, age squared, a gender dummy, years of education, years of education squared, years of work experience, work experience squared, years since migrating to urban area, years since migrating to urban are squared, categorical dummies for industry, occupation and marital status. City-level controls are city population, city real GDP, city real average wage and city unemployment rate. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Attrition Dummy (1/0)							
	Best Two Earners				All Household Members			
	$S=0$	$S>0.25$	$S>0.5$	$S>0.75$	$S=0$	$S>0.25$	$S>0.5$	$S>0.75$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ln(Minimum wage)	−0.056	0.069	−0.024	−0.102	−0.052	0.040	−0.038	−0.106
	(0.091)	(0.108)	(0.158)	(0.169)	(0.094)	(0.108)	(0.153)	(0.160)
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	89657	17861	6184	5562	93393	19057	6659	6016
N clusters	312	289	240	237	312	290	241	238
Adjusted R^2	0.300	0.311	0.357	0.361	0.296	0.307	0.350	0.354

B.4 Minimum Wage Dependency of a Household

Finally, we define the share S of household income coming from the wage income (of the two highest wage earners) at or near the minimum wage. To construct the share S, and to limit endogenous behaviour of self-selection into the minimum wage, we take the first year of each household entry in the UHS as the baseline year to compute the share S of minimum wage dependency in disposable income. Table B-V summarises the number of household per year that we include in this baseline year. We consider a wage earner to earn a minimum wage if her salary ranges between 50% and 150% of the real minimum wage of their county of residence in the first year the individual is observed in the panel. Conditioning on the first year of household observation assures that the treated household group remains unchanged over time.

Among the two highest wage earners of all retained households, we identify 32,580 (18.72%) treated (minimum wage) and 141,442 (81.3%) non-treated worker-year observations. We also undertake extensive robustness checks with respect to a narrower salary range from 50% to 120% of the county minimum wage, which results in 18,721 (10.76%) and 155,301 (89.24%) non-treated worker-year observations, respectively.

Table B-II reports summary statistics on the households income and expenditure components for household groups sorted by their minimum wage income share S. Column (1) includes all households, Column (2) with $S = 0$ all households without wage income at or near the minimum wage, whereas Columns (3)-(5) show household groups of increasing minimum wage dependency.

We merge the household survey data with the minimum wage data at county and city-level from the Chinese Ministry of Human Resources and add additional macroeconomic variables at the county and city-level. All monetary variables are converted in real terms using the province-level urban CPI index with the base year 2002.

Table B-II: Incomes and Expenditures Share of Disposable Income

The table summarize the household income and expenditure components as a share of disposable income by different household types sorted by their share S of minimum wage income in total household disposable income. Data are from the Urban Household Survey (UHS) and cover the period from 2002 to 2009. Reported are average values for the entire period and standard errors are in parentheses below.

	All Households	$S = 0$	$S > 0$	$S > 0.5$	$S > 0.75$
	(1)	(2)	(3)	(4)	(5)
Labor income	0.902	0.917	0.862	0.779	0.792
	(0.158)	(0.140)	(0.192)	(0.243)	(0.242)
Consumption	0.724	0.705	0.773	0.820	0.817
	(0.311)	(0.310)	(0.308)	(0.359)	(0.364)
Education expenditure	0.107	0.107	0.107	0.100	0.098
	(0.122)	(0.116)	(0.137)	(0.152)	(0.153)
Health expenditure	0.043	0.041	0.048	0.054	0.053
	(0.084)	(0.075)	(0.105)	(0.116)	(0.117)
Non-durables expenditure	0.383	0.367	0.427	0.465	0.464
	(0.144)	(0.138)	(0.150)	(0.164)	(0.161)
Durables expenditure	0.105	0.109	0.095	0.087	0.087
	(0.144)	(0.151)	(0.123)	(0.179)	(0.186)
Housing expenditure	0.055	0.060	0.040	0.035	0.031
	(0.491)	(0.502)	(0.458)	(0.441)	(0.420)
Savings	0.240	0.264	0.179	0.143	0.146
	(0.309)	(0.324)	(0.254)	(0.228)	(0.232)
Observations	73164	53054	20110	4365	3990
Share of observations in sample		0.72	0.27	0.06	0.05
Share of total labor income		0.819	0.181	0.026	0.024

Table B-III: Household Demographics

The table summarize the household demographics by household type sorted on the share S of minimum wage earnings in total household disposable income. Data are from the Urban Household Survey (UHS) and cover the period 2002-2009. Reported are average values for the entire period and standard errors are in parentheses below. Household head refers to the household member with the highest labor income; SOE stands for State Owned Enterprise; education is a categorical variable with a total of nine categories: no schooling, basic literacy classes, primary school, junior high school, senior middle school, secondary, college enrolment, bachelor completed, graduated.

	All Households	$S=0$	$S>0$	$S>0.5$	$S>0.75$
	(1)	(2)	(3)	(4)	(5)
HH N years in UHS	2.949	2.949	2.949	2.864	2.868
	(1.014)	(1.013)	(1.019)	(0.975)	(0.972)
Household size	3.145	3.118	3.215	3.345	3.355
	(0.724)	(0.703)	(0.773)	(0.862)	(0.869)
House ownership	0.870	0.890	0.818	0.778	0.776
	(0.336)	(0.313)	(0.386)	(0.415)	(0.417)
Years since migrating	8.047	8.429	7.040	6.047	6.149
	(11.10)	(11.15)	(10.91)	(10.63)	(10.69)
SOE employee share	0.735	0.778	0.620	0.436	0.441
	(0.441)	(0.415)	(0.485)	(0.496)	(0.497)
Female Head	0.270	0.292	0.211	0.318	0.316
	(0.444)	(0.455)	(0.408)	(0.466)	(0.465)
Age of the household head	41.38	41.29	41.62	40.58	40.47
	(7.842)	(7.742)	(8.095)	(8.686)	(8.754)
Household head education	5.914	6.127	5.351	4.929	4.941
	(1.441)	(1.419)	(1.345)	(1.172)	(1.174)
Head work experience (years)	20.87	20.84	20.95	19.35	19.23
	(8.703)	(8.590)	(8.995)	(9.804)	(9.859)
Observations	73164	53054	20110	4365	3990

Table B-IV: Household-Year Observations by Sampling Duration in UHS Panel

The table summarize the number of household-year observations as a function of the number of years the household is sampled (sampling duration).

Number of Years	Household-Year Observations	Percent	Cumulative
	(1)	(2)	(3)
2	30098	41.14	41.14
3	25418	34.74	75.88
4	9688	13.24	89.12
5	7190	9.83	98.95
6	770	1.05	100.00
Total	73164	100.00	

Table B-V: Number of Households First Time Observed in UHS by Year

The table summarize the number of households that are observed for the first time in the UHS by year. As explained in Section 2.1, it is in this first year of entry of a household in the UHS that we construct our baseline share S for each household.

HH First Year in UHS	Observations	Percent	Year
0	0	0.00	2002
1	10331	14.12	
Total	10331	14.12	
0	9316	12.73	2003
1	4829	6.60	
Total	14145	19.33	
0	11950	16.33	2004
1	2593	3.54	
Total	14543	19.88	
0	6584	9.00	2005
1	7766	10.61	
Total	14350	19.61	
0	12365	16.90	2006
1	147	0.20	
Total	12512	17.10	
0	1698	2.32	2007
1	20	0.03	
Total	1718	2.35	
0	41	0.06	2008
1	2739	3.74	
Total	2780	3.80	
0	2785	3.81	2009
1	0	0.00	
Total	2785	3.81	
0	44739	61.15	2002-2009
1	28425	38.85	
Total	73164	100.00	

Table B-VI: Different Definitions of Treated Worker

The table summarize the share of minimum wage workers by the share S, and change of the composition of this share in the sample when the workers are defined as minimum wage treated across different definitions. The first row defines treated households in the first year of observation and keeps them fixed over the panel. The second row defines treatment status each year the household is observed independently of her treatment status in the first year. The third row shows household are assigned to treatment only if they are treated in all the years they are observed in the panel, i.e. if at least for one year the earn both more than the minimum wage then the household is not treated in this case. Standard errors are reported in parenthesis.

	$S=0$	$S>0$	$S>0.25$	$S>0.5$	$S>0.75$
	(1)	(2)	(3)	(4)	(5)
MW treated HH in the first year	0.718	0.282	0.239	0.064	0.058
	(0.450)	(0.450)	(0.426)	(0.245)	(0.234)
MW treated HH by year	0.730	0.270	0.229	0.071	0.066
	(0.444)	(0.444)	(0.420)	(0.257)	(0.249)
MW treated HH in each year	0.836	0.164	0.138	0.037	0.031
	(0.370)	(0.370)	(0.345)	(0.188)	(0.172)

Table B-VII: Unemployment at the Worker Level

The table summarize the level of unemployment at worker level for the best two earners within the households. The share of unemployed members for different groups of minimum wage income in total disposable income are reported. Standard errors are reported in parenthesis.

	All Households	S=0	$S>0$	$S>0.25$	$S>0.5$	$S>0.75$
	(1)	(2)	(3)	(4)	(5)	(6)
Unemployment	0.042	0.036	0.060	0.078	0.189	0.191
	(0.120)	(0.186)	(0.238)	(0.269)	(0.392)	(0.393)
Observations	208607	160635	47972	34869	12764	11861

C Specification Issues: County Trends and Province-Year Fixed Effects

Table C-I: First-Stage Regressions without Province × Year FE and County Trends

Household annual real labor income is regressed on the annual real minimum wage for households sorted by the share S of household minimum wage income in total disposable income under two alternative specifications: Columns (1)-(4) do not include province-year fixed effects and linear county time trends in the specification, while Columns (5)-(8) control for linear county time trends and province-year fixed effects. As specified in Equation 2, all regressions include controls for the two highest labor income earners in the household, namely age and age squared, a gender dummy, years of work experience and work experience squared, years since migration to the city and squared, household size as measured by the number of household members and a house ownership dummy. Additional categorical control variables characterize the level of education, marital status, industry and occupation. City-level variation is accounted for by city population, city real GDP, city real average wage and city unemployment rate. Standard errors clustered at county-level are shown in parentheses. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Household Real Labor Income							
	Only Year FE				County Trends and Province × Year FE			
	$S=0$	$S>0$	$S>0.5$	$S>0.75$	$S=0$	$S>0$	$S>0.5$	$S>0.75$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Minimum wage	0.972	1.653	1.464	1.296	−0.022	0.364	1.378	1.529
	(0.300)***	(0.443)***	(0.534)***	(0.562)**	(0.574)	(0.561)	(0.632)**	(0.692)**
HH-member controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	No	No	No	No
Province × year FE	No	No	No	No	Yes	Yes	Yes	Yes
County trends	No	No	No	No	Yes	Yes	Yes	Yes
Observations	44288	12066	3699	3374	44288	12066	3699	3374
N clusters	625	491	346	335	625	491	346	335
N households	20450	5684	1785	1627	20450	5684	1785	1627
Adjusted R^2	0.202	0.395	0.512	0.522	0.256	0.515	0.700	0.705

Table C-II: First-Stage Regressions Adding Province × Year FE and County Trends

Household annual real labor income is regressed on the annual real minimum wage for households sorted by the share S of household minimum wage income in total disposable income under two alternative specifications: Columns (1)-(4) include province-year fixed effects, while Columns (5)-(8) add for linear county time trends. As specified in Equation 2, all regressions include controls for the two highest labor income earners in the household, namely age and age squared, a gender dummy, years of work experience and work experience squared, years since migration to the city and squared, household size as measured by the number of household members and a house ownership dummy. Additional categorical control variables characterize the level of education, marital status, industry and occupation. City-level variation is accounted for by city population, city real GDP, city real average wage and city unemployment rate. Standard errors clustered at county-level are shown in parentheses. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Household Real Labor Income							
	Province × Year FE				County Trends			
	$S=0$	$S>0$	$S>0.5$	$S>0.75$	$S=0$	$S>0$	$S>0.5$	$S>0.75$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Minimum wage	0.548	1.194	1.637	1.691	0.496	0.953	0.680	0.853
	(0.540)	(0.665)*	(0.845)*	(0.900)*	(0.249)**	(0.388)**	(0.557)	(0.606)
HH-member controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	No	No	No	No	No	No
Province × year FE	Yes	Yes	Yes	Yes	No	No	No	No
County trends	No	No	No	No	Yes	Yes	Yes	Yes
Observations	44288	12066	3699	3374	44288	12066	3699	3374
N clusters	625	491	346	335	625	491	346	335
N households	20450	5684	1785	1627	20450	5684	1785	1627
Adjusted R^2	0.221	0.443	0.594	0.600	0.249	0.498	0.676	0.682

D Household Consumption and Observed Labor Income

Table D-I: Relationship between Consumption and Observed Labor Income

We report OLS regressions of household real consumption on household real labor income. As in Equation 2, these regressions include controls for the two highest labor income earners in the household, namely age and age squared, a gender dummy, years of work experience and work experience squared, years since migration to the city and squared, household size as measured by the number of household members and a house ownership dummy. Additional categorical control variables characterize the level of education, marital status, industry and occupation. City-level variation is accounted for by city population, city real GDP, city real average wage and city unemployment rate. Standard errors clustered at county-level are shown in parentheses. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Household Consumption			
	$S = 0$	$S > 0.25$	$S > 0.5$	$S > 0.75$
	(1)	(2)	(3)	(4)
Household labor income	0.325	0.432	0.377	0.349
	(0.030)***	(0.018)***	(0.098)***	(0.093)***
City-level controls	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes
Province $\times$ year FE	Yes	Yes	Yes	Yes
Observations	44288	12066	3699	3374
N clusters	625	491	346	335
N households	20450	5684	1785	1627
Adjusted R^2	0.259	0.508	0.607	0.631

E Consumption Propensities by Expenditure Type

Table E-I: Health Expenditure Components

We report 2SLS regressions for sub-components of expenditures in health's goods and services. Estimates for expenditure on drugs is shown in Columns (1)-(2), for health related medical treatments are reported in Columns (3)-(4), for appliances (medical equipment) expenditure in Columns (5)-(6) and other health expenditure in Columns (7)-(8). The samples consist of all households for which the labor income share S stemming from minimum wage is more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. As specified in Equation 3, all regressions include individual members, household and city-level controls, household and interacted province-year fixed effects, and county trends. Standard errors clustered at county-level are shown in parentheses. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

	Drugs and Medicines		Medical Treatment		Appliances		Other	
	$S > 0.5$ (1)	$S > 0.75$ (2)	$S > 0.5$ (3)	$S > 0.75$ (4)	$S > 0.5$ (5)	$S > 0.75$ (6)	$S > 0.5$ (7)	$S > 0.75$ (8)
Household labor income	0.184	0.202	0.031	0.031	0.004	0.002	−0.011	−0.004
	(0.128)	(0.137)	(0.083)	(0.092)	(0.006)	(0.007)	(0.022)	(0.023)
HH member controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3442	3137	3442	3137	3442	3137	3442	3137
N clusters	323	314	323	314	323	314	323	314
N households	1528	1390	1528	1390	1528	1390	1528	1390

Table E-II: Education Expenditure Components

We report estimates for sub-components of education expenditures. Estimates for expenditure on CPU and software is shown in Columns (1)-(2), for educational goods (textbooks, books, stationery, magazines, dictionaries) are reported in Columns (3)-(4), for educational courses (tuition fees, tutorials, school accommodation) expenditure in Columns (5)-(6) and educational services (cultural and recreational services) in Columns (7)-(8). The samples consist of all households for which the labor income share S stemming from minimum wage is more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. As specified in Equation 3, all regressions include individual members, household and city-level controls, household and interacted province-year fixed effects, and county trends. Standard errors clustered at county-level are shown in parentheses. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

	CPU and Software		Educ. Goods		Courses		Educ. Services	
	$S > 0.5$ (1)	$S > 0.75$ (2)	$S > 0.5$ (3)	$S > 0.75$ (4)	$S > 0.5$ (5)	$S > 0.75$ (6)	$S > 0.5$ (7)	$S > 0.75$ (8)
Household labor income	0.057	0.062	0.042	0.041	0.100	0.145	0.003	0.009
	(0.055)	(0.051)	(0.023)*	(0.022)*	(0.118)	(0.120)	(0.048)	(0.049)
HH member controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3442	3137	3442	3137	3442	3137	3442	3137
N clusters	323	314	323	314	323	314	323	314
N households	1528	1390	1528	1390	1528	1390	1528	1390

Table E-III: Non-Durables Expenditure Components

We report estimates for sub-components of non-durables. Estimates for food expenditure is shown in Columns (1)-(2), for household services (vehicle fuel and maintenance, transportation, hairdresser etc.) are reported in Columns (3)-(4), for clothing expenditure in Columns (5)-(6) and for sundry goods (jewels, watch, cosmetics, beauty appliances etc.) in Columns (7)-(8). The samples consist of all households for which the labor income share S stemming from minimum wage is more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. As specified in Equation 3, all regressions include individual members, household and city-level controls, household and interacted province-year fixed effects, and county trends. Standard errors clustered at county-level are shown in parentheses. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

	Food		Services		Clothing		Sundry Goods	
	$S > 0.5$ (1)	$S > 0.75$ (2)	$S > 0.5$ (3)	$S > 0.75$ (4)	$S > 0.5$ (5)	$S > 0.75$ (6)	$S > 0.5$ (7)	$S > 0.75$ (8)
Household labor income	0.449	0.377	0.112	0.116	0.045	0.037	−0.002	−0.008
	(0.245)*	(0.236)	(0.074)	(0.075)	(0.084)	(0.065)	(0.028)	(0.027)
HH member controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3442	3137	3442	3137	3442	3137	3442	3137
N clusters	323	314	323	314	323	314	323	314
N households	1528	1390	1528	1390	1528	1390	1528	1390

Table E-IV: Durables Expenditure Components

We report estimates for sub-components of expenditures in durable goods. Estimates for TV expenditure is shown in Columns (1)-(2), for other electronics (cameras and video cameras, DVD players, smartphones, stereo, voice recorder etc.) are reported in Columns (3)-(4), for durable transportation expenditure (cars, motorcycles, electric bicycles, bicycles and other) in Columns (5)-(6), for household equipment (furniture and home appliances, washing machine, refrigerator etc.) in Columns (7)-(8) and for housing expenditure (purchasing or building a house) in Columns (9)-(10). The samples consist of all households for which the labor income share S stemming from minimum wage is more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. As specified in Equation 3, all regressions include individual members, household and city-level controls, household and interacted province-year fixed effects, and county trends. Standard errors clustered at county-level are shown in parentheses. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

	Television		Other Electronics		Transportation		HH Equipment		Housing	
	$S > 0.5$ (1)	$S > 0.75$ (2)	$S > 0.5$ (3)	$S > 0.75$ (4)	$S > 0.5$ (5)	$S > 0.75$ (6)	$S > 0.5$ (7)	$S > 0.75$ (8)	$S > 0.5$ (9)	$S > 0.75$ (10)
Household labor income	0.135	0.135	0.020	0.017	-0.160	-0.098	0.021	0.024	−0.090	−0.116
	(0.089)	(0.091)	(0.031)	(0.034)	(0.227)	(0.246)	(0.096)	(0.095)	(0.618)	(0.599)
HH member controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3442	3137	3055	2779	3442	3137	3442	3137	3442	3137
N clusters	323	314	228	224	323	314	323	314	323	314
N households	1528	1390	1361	1236	1528	1390	1528	1390	1528	1390

F Wage Regressions

Table F-I: Worker Wages and the Minimum Wage

The wage regressions in Columns (1)-(4) include the sample of the best two earners in the household and those in Columns (5)-(8) run the regression on all household members reporting wages. All regressions include individual fixed effects, province-year fixed effects, and a linear county time trend. We include time varying worker characteristics for employment status, family size, outright house ownership, age, age squared, a gender dummy, years of education, years of education squared, years of work experience, work experience squared, years since migrating to urban area, years since migrating to urban are squared, categorical dummies for industry, occupation and marital status. City-level controls are city population, city real GDP, city real average wage and city unemployment rate. Standard errors clustered at county-level are shown in parentheses. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Worker Wage (in RMB)							
	Best Two Earners				All Household Members			
	$S=0$	$S>0.25$	$S>0.5$	$S>0.75$	$S=0$	$S>0.25$	$S>0.5$	$S>0.75$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Minimum wage	−0.070	0.340	0.541	0.580	-0.057	0.387	0.608	0.645
	(0.235)	(0.243)	(0.300)*	(0.327)*	(0.229)	(0.232)*	(0.295)**	(0.318)**
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Worker FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	137227	27550	8810	8021	141647	28985	9392	8581
N clusters	671	551	405	398	671	551	405	398
N individuals	64543	13238	4340	3962	65946	13682	4516	4130
Adjusted R^2	0.172	0.377	0.560	0.565	0.172	0.375	0.557	0.564

G Combining Household Categories

Table G-I: Regressions with Interacted Household Categories

We present reduced form specifications where we regress the annual real household consumption in RMB on the minimum wage and interaction terms of the minimum wage (MW) and a Dummy($x_1 < S < x_2$) for minimum wage dependence. All the regressions use as the reference group the placebo group of households for which the labor income share S from minimum wages is zero ($S = 0$). As specified in Equation 2, all regressions include individual members, household and city-level controls, household and interacted province-year fixed effects, and county trends. Standard errors clustered at county-level are shown in parentheses.

Dep. variable:	Household Consumption					
	(1)	(2)	(3)	(4)	(5)	(6)
Minimum Wage	−0.661	−0.661	−0.651	−0.749	−0.904	−0.910
	(0.475)	(0.476)	(0.476)	(0.544)	(0.602)	(0.605)
MW × Dummy($0 < S < 0.25$)	0.796					
	(0.613)					
MW × Dummy($0.25 < S < 0.75$)	0.765					
	(0.475)					
MW × Dummy($S > 0.75$)	1.732					
	(0.801)**					
MW × Dummy($0 < S < 0.5$)		0.824				
		(0.349)**				
MW × Dummy($S > 0.5$)		1.451				
		(0.724)**				
MW × Dummy($S > 0$)			0.945			
			(0.378)**			
MW × Dummy($S > 0.25$)				1.032		
				(0.526)*		
MW × Dummy($S > 0.5$)					1.489	
					(0.744)**	
MW × Dummy($S > 0.75$)						1.758
						(0.818)**
Observations	61257	61527	61257	56354	47987	47662
N clusters	648	648	648	642	635	633
N households	28422	28422	28422	26134	22235	22077
Adjusted R^2	0.233	0.233	0.233	0.236	0.232	0.233

H Robustness to Two-Way Clustering

Table H-I: Robustness of First Stage and Reduced Form Estimates

We replicate the first stage and reduced form specifications as in Table II in which we regress respectively the levels of household real annual labor income in RMB Columns (1)-(4), and household real consumption in RMB Columns (5)-(8) on the county real minimum wage level. The samples consist of all households for which the labor income share S from minimum wages is zero ($S = 0$), more than 25% ($S > 0.25$), more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. As specified in Equation 2, all regressions include individual members, household and city-level controls, household and interacted province-year fixed effects, and county trends. Standard errors are clustered at county-level, and *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variables:	Household Labor Income (First Stage)				Household Consumption (Reduced Form)			
	(1) $S=0$	(2) $S>0.25$	(3) $S>0.5$	(4) $S>0.75$	(5) $S=0$	(6) $S>0.25$	(7) $S>0.5$	(8) $S>0.75$
Minimum wage	−0.022	0.364	1.378	1.529	−1.039	1.224	1.605	1.914
	[0.572]	[0.579]	[0.645]**	[0.691]**	[0.749]	[0.587]**	[0.805]**	[0.877]**
	{0.553}	{0.573}	{0.644}**	{0.701}**	{0.636}	{0.578}**	{0.797}**	{0.915}**
HH-members controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	44288	12066	3699	3374	44375	12072	3700	3375
N clusters	625	491	346	335	626	491	346	335
N. households	20450	5684	1785	1627	20530	5686	1785	1627
Adjusted R^2	0.256	0.515	0.700	0.705	0.229	0.429	0.553	0.583

Table H-II: Robustness of 2SLS

We replicate the 2SLS regressions in in Table III in which real annual household consumption is regressed on the household's fitted annual real labor income level. To allow for arbitrary correlation of residuals due to city, county and province-wide shocks we cluster the standard errors over two levels. First, we report the two-way clustering for the county and the interaction of province-year level [in squared brackets], and alternatively at the county and the interaction of city-year levels {in curly brackets}. The samples consist of all households for which the labor income share S from wages is zero ($S = 0$), more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household labor income. All regressions include individual members, household and city-level controls, household and interacted province-year fixed effects, and county trends. Control variables are as specified in Equation 3. Standard errors clustered at county-level in parentheses. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Household Consumption			
	$S = 0$	$S > 0.25$	$S > 0.5$	$S > 0.75$
	(1)	(2)	(3)	(4)
Household labor income	61.461	3.314	1.217	1.301
	[1938.376]	[4.368]	[0.518]**	[0.585]**
	{1900.739}	{4.242}	{0.568}**	{0.643}**
HH member controls	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes
Observations	41709	11309	3442	3137
N clusters	597	469	323	314
N households	17871	4927	1528	1390

I Liquidity Constraints Conditional on Family Structure

Table I-I: Liquidity Effects Conditional on Family Structure

We report 2SLS level regressions where real annual household consumption is regressed on the household's annual real labor income and on additional interaction terms identifying non-liquidity constrained households as in Table V and households with children as in Table VI. As specified in Equation 3, all regressions include individual members, household and city-level controls, household and interacted province-year fixed effects, and county trends. Standard errors are clustered at county-level, and *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Household Consumption								
	$S=0$	$S>0.5$	$S>0.75$	$S=0$	$S>0.5$	$S>0.75$	$S=0$	$S>0.5$	$S>0.75$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Household labor income	11.493	0.705	0.674	16.655	0.685	0.652	−204.430	0.815	0.756
	(49.983)	(0.656)	(0.704)	(104.533)	(0.637)	(0.687)	(17809.263)	(0.772)	(0.775)
Household labor income	−2.350	0.618	0.744	−3.587	0.666	0.814	48.920	0.767	0.998
× Children	(11.553)	(0.431)	(0.386)*	(24.445)	(0.425)	(0.374)**	(4238.878)	(0.529)	(0.513)*
Household labor income	−0.965	−0.268	−0.271						
× property income dum.	(4.456)	(0.262)	(0.306)						
Household labor income				−0.960	−0.231	−0.280			
× capital income dum.				(6.610)	(0.188)	(0.227)			
Household labor income							−9.368	−0.286	−0.431
× house ownership dum.							(822.001)	(0.309)	(0.340)
HH member controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	41709	3442	3137	41709	3442	3137	41709	3442	3137
N clusters	597	323	314	597	323	314	597	323	314
N households	17871	1528	1390	17871	1528	1390	17871	1528	1390

Table I-II: Liquidity Effects by Expenditure Type

The table shows 2SLS estimates using interaction terms identifying non-liquidity constrained households as in Table V on sub-components of household consumption as dependent variable. Expenditure on health and education is used in Columns (1)-(6), non-durable goods in Columns (7)-(12). The samples consist of all households for which the labor income share S from minimum wages is more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. As specified in Equation 3, all regressions include individual members, household and city-level controls, household and interacted province-year fixed effects, and county trends. Standard errors are clustered at county-level, and *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variables:	Health and Educational Expenditure						Non-Durables Expenditure					
	$S > 0.5$ (1)	$S > 0.75$ (2)	$S > 0.5$ (3)	$S > 0.75$ (4)	$S > 0.5$ (5)	$S > 0.75$ (6)	$S = 0.5$ (7)	$S > 0.75$ (8)	$S > 0.5$ (9)	$S > 0.75$ (10)	$S > 0.5$ (11)	$S > 0.75$ (12)
Household labor income	0.305	0.450	0.315	0.481	0.335	0.522	0.565	0.479	0.583	0.506	0.584	0.499
	(0.228)	(0.252)*	(0.233)	(0.274)*	(0.295)	(0.314)*	(0.281)**	(0.272)*	(0.302)*	(0.302)*	(0.402)	(0.369)
Household labor income	−0.051	−0.084					−0.216	−0.193				
× property income dum.	(0.073)	(0.097)					(0.093)**	(0.108)*				
Household labor income			−0.027	−0.074					−0.165	−0.147		
× capital income dum.			(0.081)	(0.107)					(0.074)**	(0.089)		
Household labor income					−0.026	−0.099					−0.009	−0.006
× house ownership dum.					(0.130)	(0.137)					(0.122)	(0.113)
HH member controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3055	2779	3055	2779	3055	2779	3442	3137	3442	3137	3442	3137
N clusters	228	224	228	224	228	224	323	314	323	314	323	314
N households	1361	1236	1361	1236	1361	1236	1528	1390	1528	1390	1528	1390

Table I-III: Liquidity Effects on Educational Expenditures

We report liquidity constrained interaction estimates for the education expenditure sub-component of consumption. Interaction terms identifying liquidity non-constrained households are as in Table V. The samples consist of all households for which the labor income share S stemming from minimum wage is more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. As specified in Equation 3, all regressions include individual members, household and city-level controls, household and interacted province-year fixed effects, and county trends. Standard errors clustered at county-level are shown in parentheses. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Educational Expenditure					
	$S > 0.5$ (1)	$S > 0.75$ (2)	$S > 0.5$ (3)	$S > 0.75$ (4)	$S > 0.5$ (5)	$S > 0.75$ (6)
Household labor income	0.068	0.183	0.072	0.196	0.014	0.177
	(0.201)	(0.194)	(0.207)	(0.207)	(0.271)	(0.253)
Household labor income	0.016	−0.005				
× property income dummy	(0.067)	(0.076)				
Household labor income			0.028	0.008		
× capital income dummy			(0.068)	(0.082)		
Household labor income					0.110	0.043
× house ownership dummy					(0.103)	(0.100)
HH member controls	Yes	Yes	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3055	2779	3055	2779	3055	2779
N clusters	228	224	228	224	228	224
N households	1361	1236	1361	1236	1361	1236

Table I-IV: Liquidity Effects on Food Consumption

We report liquidity constrained interaction estimates for the food sub-component of non-durables expenditure items. Interaction terms identifying liquidity non-constrained households are as in Table V. The samples consist of all households for which the labor income share S stemming from minimum wage is more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. As specified in Equation 3, all regressions include individual members, household and city-level controls, household and interacted province-year fixed effects, and county trends. Standard errors clustered at county-level are shown in parentheses. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variables:	Food Expenditure					
	$S > 0.5$ (1)	$S > 0.75$ (2)	$S > 0.5$ (3)	$S > 0.75$ (4)	$S > 0.5$ (5)	$S > 0.75$ (6)
Household labor income	0.453	0.375	0.465	0.397	0.498	0.401
	(0.223)**	(0.215)*	(0.234)**	(0.234)*	(0.315)	(0.292)
Household labor income	−0.160	−0.150				
× property income dummy	(0.075)**	(0.085)*				
Household labor income			−0.135	−0.135		
× capital income dummy			(0.059)**	(0.068)**		
Household labor income					−0.054	−0.023
× house ownership dummy					(0.097)	(0.090)
HH member controls	Yes	Yes	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3442	3137	3442	3137	3442	3137
N clusters	323	314	323	314	323	314
N households	1528	1390	1528	1390	1528	1390

Table I-V: Liquidity Effects on Food Consumption at Home and Away

We report liquidity constrained interaction estimates for the food from home and food away from home. Interaction terms identifying liquidity non-constrained households are as in Table V except the home ownership which does not lead to significant results. The samples consist of all households for which the labor income share S stemming from minimum wage is more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. As specified in Equation 3, all regressions include individual members, household and city-level controls, household and interacted province-year fixed effects, and county trends. Standard errors clustered at county-level are shown in parentheses. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variables:	Food Consumed at Home				Food Consumed Away			
	$S > 0.5$ (1)	$S > 0.75$ (2)	$S > 0.5$ (3)	$S > 0.75$ (4)	$S > 0.5$ (5)	$S > 0.75$ (6)	$S > 0.5$ (7)	$S > 0.75$ (8)
Household labor income	0.271	0.245	0.278	0.260	0.182	0.130	0.187	0.136
	(0.164)*	(0.165)	(0.173)	(0.179)	(0.120)	(0.113)	(0.123)	(0.122)
Household labor income	−0.109	−0.109			−0.052	−0.041		
× property income dummy	(0.056)*	(0.067)			(0.042)	(0.046)		
Household labor income			−0.083	−0.094			−0.052	−0.042
× capital income dummy			(0.041)**	(0.052)*			(0.033)	(0.037)
HH member controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3442	3137	3442	3137	3442	3137	3442	3137
N clusters	323	314	323	314	323	314	323	314
N households	1528	1390	1528	1390	1528	1390	1528	1390

J Minimum Wages and Employment

Here we investigate unemployment effect of the minimum wage. First, we look in Appendix J.1 at the intensive margin of hours worked. Second, we relate in Appendix J-II the minimum wage to the employment status of workers. Third, Appendix J.3 explores a number of robustness issues.

J.1 Hours Worked by Household Members

Higher minimum wages can affect the intensive margin of labor demand and supply at the worker level in multiple ways: employers may demand more or less hours from their employees or workers may wish to switch from full-time to part-time employment or vice versa. In order to estimate the impact of the minimum wage on labor supply we regress the *monthly* hours worked on the natural logarithm of the minimum wage using a linear model similar to Equation 4. As before, we retain in the sample both employed and unemployed individuals since labor supply may be affected by minimum wage induced employment loss. Switching in and out of employment is a case of (extreme) variation in hours worked. Table J-I reports the estimates for the full sample of employed and unemployed individuals. Columns (1)-(4) consider only the two best earners in each household, while Columns (5)-(8) provide estimates for the labor supply of all household members.

We find no evidence for any statistically significant adjustment in labor supply around minimum wage hikes. At the same time we observe an economically small decrease in hours worked by workers in minimum wage households. For example, a 10% increase in the minimum wage reduces weekly work by approximately 0.294 ($= -12.349 \times 0.095/4$) hours (or 17.65 minutes) for workers in households with $S > 0.5$ considered in Column (3).[28] This is similar to the findings of Jäger et al. (2018) for Austria, where the labor supply is rather insensitive to the minimum wage setting. By contrast, households without minimum wage income slightly increase their labor supply albeit the effect is not significant. Income effects related to minimum wage changes or a reduced labor supply may account for the observed pattern between minimum wage and non-minimum wage households. In Appendix

[28] Calculated as $-12.349 \times ln(110/100) = -12.349 \times 0.095 = -1.18$ hours per month. To put this estimate into perspective we recall that the average annual increase of real minimum wages is approximately 7.35% as shown in Table I.

J.3 we test further the unemployment effects by looking at the robustness to the exclusion of city-level controls. Results are reported in Tables J-III and are in line with Table J-I.

Table J-I: Minimum Wages and Hours Worked

We regress a worker's monthly hours worked on the natural logarithm of the minimum wage. We retain in the sample both employed and unemployed individuals since hours worked may be reduced due to loss of employment. Regressions in Columns (1)-(4) include the best two earners in the household and those in Columns (5)-(8) include all workers. Standard errors clustered at county-level are shown in parentheses. All regressions include individual fixed effects, province-year fixed effects, and a linear county time trend. We include time varying worker characteristics for family size, outright house ownership, age, age squared, a gender dummy, years of education, years of education squared, years of work experience, work experience squared, years since migrating to urban area, years since migrating to urban are squared, categorical dummies for worker industry, occupation and marital status. City-level controls are city population, city real GDP, city real average wage and city unemployment rate. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Hours Worked Per Month							
	Best Two Earners				All Household Members			
	$S=0$	$S>0.25$	$S>0.5$	$S>0.75$	$S=0$	$S>0.25$	$S>0.5$	$S>0.75$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ln(Minimum wage)	3.308	−2.890	−12.349	−4.622	2.804	−0.476	−12.500	−5.854
	(3.851)	(4.495)	(8.605)	(7.967)	(3.837)	(3.899)	(7.414)*	(6.643)
Worker-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Worker FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	112979	23840	7653	6936	116979	25177	8198	7459
N clusters	293	284	248	247	293	284	248	247
N individuals	54028	11598	3820	3477	55389	12040	3999	3648
Adjusted R^2	0.459	0.446	0.568	0.570	0.498	0.508	0.610	0.616

J.2 Employment Status

Loss of employment has plausibly more dramatic welfare consequences for households than any (modest) labor supply adjustment at the intensive margin. While the average income and consumption of minimum-wage-dependent households clearly increases under the Chinese minimum wage policy as shown in the previous sections, concerns about households suffering an unemployment spell are nevertheless pertinent.[29]

Table J-II reports regressions for which the dependent variable is an employment dummy equal to one for employed household members, whereas a zero dummy value identifies workers within the labor force declaring to be unemployed at the time of the survey. A zero dummy value marks all adult household members who do not earn any income, but excludes those in training (for example university students) and homeworkers. The independent variable is the logarithm of a county's real minimum wage. Column (1) considers members from households not depending on minimum wage income (placebo group), while Columns (2)-(4) focus on members living in households with various degrees of minimum wage dependency. Columns (5)-(8) focus on the population of migrant households. The latter groups can be described as more vulnerable, and exposed to minimum wage increases, Orrenius and Zavodny (2008). All specifications include worker and province-year fixed effects and we add additional county-level trends and city-level macroeconomic controls.

Column (1) shows a positive relationship between the minimum wage level and employment for households not earning a minimum wage. However, is not significant and the economic magnitude is modest: a 10% increase in minimum wages alters employment by 0.19 percentage points.[30] As expected, Columns (2)-(4) show increasingly negative point estimates for the real minimum wage for more minimum-wage-dependent households. Households with the highest minimum wage dependency in Column (4) feature a coefficient of -0.043: a 10% real minimum wage hike decreases the likelihood of minimum wage household members employment by 0.41 percentage points. The coefficient is economically and statistically insignificant. The standard error on the coefficient is never-

[29] Previous research on China has related higher minimum wages to more instances of lay-off based on firm survey data, Huang et al. (2014). But unlike our household survey data, firm based surveys do not track individual workers and therefore cannot address the questions if workers just switched employers or suffer from a prolonged unemployment spell. Welfare implications are very different in the two cases.

[30] In the linear-log model this is $0.02 \times ln(1.1) \times 100$.

theless precisely estimated at 0.045, which implies that we exclude large adverse effects of minimum wages on the unemployment risk of a worker.

The employment regressions for migrant workers in Columns (5)-(8) yield a more positive point estimate for the minimum wage variable—albeit still statistically insignificant. For minimum-wage-dependent migrant households with $S > 0.5$ in Column (7), a 10% larger minimum wage hike increases the risk of unemployment by 0.28 percentage points. However, we still cannot reject the null hypothesis that the total unemployment effect is zero.[31]

[31] We note that binary dependent variable models have lower goodness of fit because of a large number of fixed effects applied, while the point estimates have similar magnitudes. We also experiment with county-level aggregate regressions using sample based unemployment rates and obtain a point estimate of -0.064 with a standard error of 0.087 for the household group with $S > 0.75$. We also test for statistically significant unemployment effects in a younger population of teenagers, namely teenagers with age greater than fifteen but lower than twenty, or alternatively up to twenty-four years of age. All those regression do not yield negative employment effect significant at conventional confidence levels.

Table J-II: Minimum Wages and Employment

We regress a worker's employment status (0/1) on the minimum wage. Regressions in Columns (1)-(4) include the sample of all household members and those in Columns (5)-(8) its sub-set of migrant workers. The table reports the employment rate for each category of workers, the elasticity can be computed by dividing the coefficient by the relevant employment rate. Standard errors clustered at county-level are shown in parentheses. All regressions include individual fixed effects, province-year fixed effects, and a linear county time trend. We include time varying worker characteristics for family size, outright house ownership, age, age squared, a gender dummy, years of education, years of education squared, years of work experience, work experience squared, years since migrating to urban area, years since migrating to urban are squared, categorical dummies for industry, occupation and marital status. City-level controls are city population, city real GDP, city real average wage and city unemployment rate. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Employment (1/0)							
	All Household Members				Urban Migrant Sub-Sample			
	$S=0$	$S>0.25$	$S>0.5$	$S>0.75$	$S=0$	$S>0.25$	$S>0.5$	$S>0.75$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ln(Minimum wage)	0.020	−0.016	−0.024	−0.043	0.018	−0.032	0.029	−0.002
	(0.017)	(0.027)	(0.044)	(0.045)	(0.025)	(0.041)	(0.100)	(0.114)
Worker-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Worker FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Employment rate	0.953	0.945	0.888	0.895	0.948	0.948	0.896	0.894
Observations	141644	28985	9392	8581	59676	9548	2870	2670
N clusters	671	551	405	398	630	428	277	268
N individuals	65946	13682	4516	4130	28745	4697	1423	1321
Adjusted R^2	0.093	0.117	0.232	0.249	0.087	0.222	0.334	0.369

J.3 Robustness Tests: Minimum Wages and Employment

Tables J-III and J-IV reproduce the regressions of Tables J-I and J-II without city-level controls as those might absorb unemployment effects. However, these regression results are qualitatively very similar. In Table J-V, we define the number of household members with employment as the dependent variable. Again, we find no economically or statistically significant unemployment effects for the minimum wage.[32]

We also consider the possibility that minimum wage hikes have no effect on job loss, but nevertheless affect hiring of new workers. Table J-VI, Columns (1)-(4) and (5)-(8), presents separate employment flow regressions for workers who find employment (i.e. a positive employment flow) and those who lose it (i.e. a negative employment flow), respectively. All point estimates are again economically small and statistically insignificant. In Table J-VII, we condition on unemployment status and create a dummy for hiring of unemployed individual as the dependent variable. Interestingly, we find that workers in non-minimum wage recipient households experience a statistically significant increase in their likelihood of recruitment following a minimum wage hike. This could be explained by a positive labor supply effect triggered by the minimum wage rising above the reservation wage of the household member. We note that this positive employment effect is exclusively observed for households without minimum wage income ($S = 0$) in Table J-VII, Columns (1) and (5).

For the workers living in households with a positive share of minimum wage income the coefficients are negative and significant for the $S > 0.25$ group. The fact that an unemployed worker belonging to a already minimum-wage-dependent household finds it more difficult to find employment after a minimum wage hike, while unemployed individuals in non-minimum wage households seem to show a positive effect, suggests that intra-households persistence effects might also play a role in explaining employment effects of minimum wages.[33]

On negative employment flows, Brochu and Green (2013) have a similar result to our Table J-VII, Column (5), where we find a significant negative relationship between minimum wages and negative

[32] We also experiment with county-level aggregate regressions using sample based unemployment rates. We obtain an economically weak point estimate of -0.064 with a standard error of 0.087 for the household group with $S > 0.75$.

[33] We also test for statistically significant unemployment effects in a younger population of teenagers, namely teenagers with age greater than fifteen but lower than twenty, or alternatively up to twenty-four years of age. All those regression do not yield negative employment effect significant at conventional confidence levels.

employment flows; namely a 10% increase in minimum wages reduces the likelihood of negative employment flows by 12 p.p. This is qualitatively in line with the Brochu and Green (2013) finding for low-skilled workers; namely that a 10% increase in the real minimum wage is associated with approximately a 5% decline in the probability a worker separates from his or her job in the next year.

Finally, we also seek to replicate Fang and Lin (2015), who find negative employment effects for minimum wages in eastern region of China. Accordingly, we split the UHS sample into three main regions as shown in Figure A-II and report our estimates in Table J-VIII.[34] Unlike Fang and Lin (2015), we do not find any statistically significant employment effects in the East region and neither can we confirm negative employment effects in the West region. Only for the Central region do we find a statistically significant negative relationship between the (log) minimum wage level and workers employment status for treated households ($S > 0.5$ and $S > 0.75$). However, the economic significance is modest as a minimum wage increase by 1% flips the employment status of only 1.4 out of 1,000 workers.

A number of factors can account for the different estimates compared to Fang and Lin (2015). First, we undertake our regressions at the worker level (employment status) instead of using the ratio of employment to population at the county level as Fang and Lin (2015) do. Second, the higher granularity of worker level regressions allows us to control for workers' socio-economic characteristics and time-invariant worker fixed effects. Third, we include county trends in our difference-in-difference setting to control for divergent local trends as discussed in Section 3. Fourth, our explanatory variable is the logarithm of the minimum wage, instead of the log ratio of minimum to average wage at the county level as in Fang and Lin (2015). Lastly, we split our worker sample based on the share S of household labor income received from minimum wages.

One interpretation of these findings is that the level of minimum wages in China, set at around 20% of the median wage, is low by international standards and has little bite. The low bite of the minimum wage coupled with the evidence on the absence of unemployment effects suggests that the minimum wage level in China does not exceed the marginal productivity even of the least qualified

[34]Relative to Fang and Lin (2015) we use to two additional provinces for our UHS data, namely Zheijang in the East, and Shaanxi in the West.

workers. The absence of unemployment effects may also reinforce the propensity to consume since precautionary savings motive due to unemployment risk are less salient.[35]

Table J-III: Minimum Wages and Hours Worked without city-level controls

We regress a worker's monthly hours worked on the natural logarithm of the real minimum wage. We retain in the sample both employed and unemployed individuals since hours worked may be reduced due to loss of employment. City-level controls are *excluded* since if absorbed in the regression might induce bias toward finding no employment effect of minimum wage hikes. Regressions in Columns (1)-(4) include the best two earners in the household and those in Columns (5)-(8) include all workers. Standard errors clustered at county-level are shown in parentheses. All regressions include individual fixed effects, province-year fixed effects, and a linear county time trend. We include time varying worker characteristics for family size, outright house ownership, age, age squared, a gender dummy, years of education, years of education squared, years of work experience, work experience squared, years since migrating to urban area, years since migrating to urban are squared, categorical dummies for worker industry, occupation and marital status. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Hours Worked							
	Best 2 Earners				All HH Members			
	$S=0$	$S>0.25$	$S>0.5$	$S>0.75$	$S=0$	$S>0.25$	$S>0.5$	$S>0.75$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ln(Minimum Wage)	2.958	−2.740	−10.723	−2.694	2.458	−0.388	−10.083	−2.875
	(3.659)	(4.171)	(8.249)	(7.595)	(3.664)	(3.659)	(7.202)	(6.517)
Worker-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	No	No	No	No	No	No	No	No
Worker FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	115364	24165	7756	7031	119438	25508	8304	7557
N clusters	301	292	256	254	301	292	256	254
N individuals	55191	11745	3871	3525	56578	12188	4050	3696
Adjusted R^2	0.459	0.444	0.567	0.569	0.498	0.506	0.608	0.614

[35]Similar evidence for Germany has been shown in Bruttel (2019), the author reviews the minimum wage evidence in Germany, and notes that while the majority of studies showed only minimal or no job losses, for some sectors with very high minimum wages relative to median wages identified significant negative employment effects, see also Aretz et al. (2013).

Table J-IV: Minimum Wages and Employment without City-Level Controls

We regress a worker's employment status (0/1) on the natural logarithm of the real minimum wage as in Table J-II. For, robustness city-level controls are excluded since if absorbed in the regression might induce bias toward finding no employment effect of minimum wage hikes. Regressions in Columns (1)-(4) include the sample of all household members and those in Columns (5)-(8) its sub-set of migrant workers. The table reports the employment rate for each category of workers, the elasticity can be computed by dividing the coefficient by the relevant employment rate. Standard errors clustered at county-level are shown in parentheses. All regressions include individual fixed effects, province-year fixed effects, and a linear county time trend. We include time varying worker characteristics for family size, outright house ownership, age, age squared, a gender dummy, years of education, years of education squared, years of work experience, work experience squared, years since migrating to urban area, years since migrating to urban are squared, categorical dummies for industry, occupation and marital status. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Employment (1/0)							
	All Household Members				Urban Migrants Sub-Sample			
	$S=0$	$S>0.25$	$S>0.5$	$S>0.75$	$S=0$	$S>0.25$	$S>0.5$	$S>0.75$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ln(Minimum wage)	0.017	−0.019	−0.043	−0.058	0.013	-0.030	0.045	0.015
	(0.017)	(0.025)	(0.047)	(0.046)	(0.024)	(0.039)	(0.096)	(0.108)
Worker-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	No	No	No	No	No	No	No	No
Worker FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Employment rate	0.953	0.945	0.888	0.895	0.948	0.948	0.896	0.894
Observations	145350	29471	9557	8730	61438	9720	2922	2714
N clusters	680	559	413	405	639	435	283	274
N individuals	67293	13839	4573	4184	29413	4749	1442	1338
Adjusted R^2	0.094	0.117	0.228	0.245	0.086	0.223	0.333	0.366

Table J-V: Intra-Household Employment without City-Level Controls

We present results of a regression at the household level with the proportion of household members with positive employment regressed on the natural logarithm of the real minimum wage. City-level controls are *excluded* since if absorbed in the regression might induce bias toward finding no employment effect of minimum wage hikes. Regressions in Columns (1)-(4) are for the full household sample and those in Columns (5)-(8) its subset of migrant households. Standard errors clustered at county-level are shown in parentheses. All regressions include household fixed effects, province-year fixed effects, and a linear county time trend. We include time varying household characteristics for family size, outright house ownership, average age, average age squared, average gender dummy, average years of education, average years of education squared, average years of work experience, average work experience squared, years since migrating to urban area, years since migrating to urban are squared. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variables:	Share of HH Members Employed				Share of Migrant HHs Members Employed			
	$S=0$	$S>0.25$	$S>0.5$	$S>0.75$	$S=0$	$S>0.25$	$S>0.5$	$S>0.75$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ln(Minimum wage)	0.016	0.018	0.002	-0.024	0.005	-0.020	0.061	0.057
	(0.017)	(0.031)	(0.071)	(0.081)	(0.019)	(0.031)	(0.075)	(0.086)
HH-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	No	No	No	No	No	No	No	No
Household FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prov $\times$ year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	92122	15965	5284	4800	43372	6326	1971	1820
N clusters	680	559	413	405	639	435	283	274
N individuals	40688	7035	2367	2153	20196	2979	932	861
Adjusted R^2	0.166	0.237	0.328	0.324	0.152	0.305	0.501	0.498

Table J-VI: Positive and Negative Employment Flows Unconditional on Employment Status

We present regression results at the worker level for a dummy marking in Columns (1)-(4) workers with a positive employment flows (from unemployed to employed) and in Columns (5)-(8) with a second dummy for negative employment flows (from employment to unemployment). We retain in the sample both employed and unemployed individuals. City-level controls are *excluded* since if absorbed in the regression might induce bias toward finding no employment effect of minimum wage hikes. Standard errors clustered at county-level are shown in parentheses. All regressions include individual fixed effects, province-year fixed effects, and a linear county time trend. We include time varying household characteristics for family size, outright house ownership, average age, average age squared, average gender dummy, average years of education, average years of education squared, average years of work experience, average work experience squared, years since migrating to urban area, years since migrating to urban are squared. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variables:	Positive Employment Flow (1/0)				Negative Employment Flow (1/0)			
	$S=0$	$S>0.25$	$S>0.5$	$S>0.75$	$S=0$	$S>0.25$	$S>0.5$	$S>0.75$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ln(Minimum wage)	0.022	−0.024	−0.157	0.044	−0.001	−0.001	−0.015	−0.021
	(0.021)	(0.078)	(0.127)	(0.118)	(0.009)	(0.020)	(0.024)	(0.028)
Worker-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	No	No	No	No	No	No	No	No
Worker FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	91703	18757	5884	5380	91354	18725	5855	5361
N clusters	677	554	407	399	676	554	407	399
N individuals	64877	13224	4345	3976	64675	13193	4325	3960
Adjusted R^2	0.023	0.116	0.249	0.272	0.035	0.128	0.286	0.308

Table J-VII: Hiring of Workers and Job Separations Conditional on Employment Status

Conditional on previous period employment status, we present regression results at the worker level for a dummy marking in Columns (1)-(4) workers with a positive employment flows (from unemployed to employed) and in Columns (5)-(8) with a second dummy for negative employment flows (from employment to unemployment). City-level controls are *excluded* since if absorbed in the regression might induce bias toward finding no employment effect of minimum wage hikes. Standard errors clustered at county-level are shown in parentheses. All regressions include individual fixed effects, province-year fixed effects, and a linear county time trend. We include time varying household characteristics for family size, outright house ownership, average age, average age squared, average gender dummy, average years of education, average years of education squared, average years of work experience, average work experience squared, years since migrating to urban area, years since migrating to urban are squared. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variables:	Positive Employment Flow (1/0)				Negative Employment Flow (1/0)			
	$S=0$	$S>0.25$	$S>0.5$	$S>0.75$	$S=0$	$S>0.25$	$S>0.5$	$S>0.75$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ln(Minimum wage)	0.344	−0.637	−0.705	−0.440	−0.012	0.018	0.001	0.003
	(0.110)***	(0.300)**	(0.585)	(0.523)	(0.006)*	(0.017)	(0.013)	(0.017)
Worker-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	No	No	No	No	No	No	No	No
Worker FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	3905	991	653	556	87946	17844	5267	4859
N clusters	301	192	162	154	676	554	407	399
N individuals	3071	794	524	452	62093	12526	3873	3571
Adjusted R^2	0.523	0.752	0.772	0.801	0.041	0.148	0.341	0.355

Table J-VIII: Minimum Wages and Employment by Geographic Region

The table reports point estimates as in Table J-II of worker's employment status (0/1) on the natural logarithm of the real minimum wage for three different geographical regions in China as defined in Figure A-II. For robustness city-level controls are excluded since if absorbed in the regression might induce bias toward finding no employment effect of minimum wage hikes. The sample consist of all household members. **East**: Beijing, Guangdong, Jiangsu, Liaoning, Shandong, Shanghai, and Zhejiang; **Central**: Anhui, Heilongjiang, Henan, Hubei, Jiangxi and Shanxi; **West**: Chongqing, Gansu, Shaanxi, Sichuan, and Yunnan. Standard errors clustered at county-level are shown in parentheses. Standard errors clustered at county-level are shown in parentheses. All regressions include individual fixed effects, province-year fixed effects, and a linear county time trend. We include time varying worker characteristics for family size, outright house ownership, age, age squared, a gender dummy, years of education, years of education squared, years of work experience, work experience squared, years since migrating to urban area, years since migrating to urban are squared, categorical dummies for industry, occupation and marital status. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Employment (0/1)								
	East region			Central region			West region		
	$S=0$	$S>0.5$	$S>0.75$	$S=0$	$S>0.5$	$S>0.75$	$S=0$	$S>0.5$	$S>0.75$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Ln(Minimum wage)	0.028	−0.037	−0.047	0.030	−0.131	−0.141	−0.018	0.054	0.013
	(0.026)	(0.055)	(0.053)	(0.013)**	(0.049)***	(0.053)***	(0.020)	(0.069)	(0.060)
Worker-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	No	No	No	No	No	No	No	No	No
Worker FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	71538	5060	4583	42890	2662	2484	20438	1325	1187
N clusters	292	187	185	274	149	147	114	77	73
N individuals	35612	2529	2296	21671	1385	1296	10009	659	592
Adjusted R^2	0.108	0.214	0.226	0.047	0.421	0.379	0.141	0.361	0.452

K Alternative Mechanisms: Prices, Transfers, Credit

Table K-I: Prices and Minimum Wages

We regress province-level prices and inflation (defined as change of the log province level consumer price index) on average province-level minimum wages in Columns (1)-(4) and the logarithm of the average province-level minimum wage change in Columns (5)-(8). In columns The sample period is 2003-2009. Standard errors are shown in parentheses and are clustered at the province-level. We denote by *, **, *** statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Price Level				Inflation			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Minimum wage	0.076	-0.023						
	(0.047)	(0.011)*						
Minimum wage$_{t-1}$			0.079	-0.017				
			(0.050)	(0.011)				
Minimum wage growth					0.005	-0.002		
					(0.008)	(0.008)		
Minimum wage growth$_{t-1}$							0.023	0.018
							(0.011)**	(0.011)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province FE	No	Yes	No	Yes	No	Yes	No	Yes
Obs.	140	140	119	119	119	119	100	100
N. clusters	18	18	18	18	18	18	18	18
Adjusted R^2	0.494	0.988	0.862	0.916	0.460	0.990	0.867	0.918

Table K-II: First Stage and Reduced Form Regressions

In this Table II we regress the levels of household real labor income in RMB Columns (1)-(4), and household real consumption in RMB Columns (5)-(8), on the county real minimum wage and its interaction with a dummy variable which marks cities in the top quartile (i.e. above the 75% percentile) of the minimum wage level relative to the median wage. Each regression includes also the minimum wage bite dummy on its own. The samples consist of all households for which the labor income share S from minimum wages is zero ($S = 0$), more than 25% ($S > 0.25$), more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. As specified in Equation 2, all regressions include individual members, household and city-level controls, household and interacted province-year fixed effects, and county trends. Standard errors are clustered at county-level, and *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variables:	Household Labor Income (First Stage)				Household Consumption (Reduced Form)			
	$S = 0$	$S > 0.25$	$S > 0.5$	$S > 0.75$	$S = 0$	$S > 0.25$	$S > 0.5$	$S > 0.75$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Minimum wage	0.572	0.457	2.465	2.683	−0.450	1.605	2.383	2.855
	(0.734)	(0.704)	(1.573)	(1.673)	(0.766)	(0.840)*	(1.290)*	(1.394)**
Minimum wage × MW Bite(p>.75)$_{city,t}$	−1.249	−0.134	−1.390	−1.480	−1.247	−0.551	−0.992	−1.204
	(0.600)**	(0.691)	(1.588)	(1.723)	(0.649)*	(0.705)	(1.165)	(1.205)
HH-members controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	44288	12066	3699	3374	44375	12072	3700	3375
N clusters	625	491	346	335	626	491	346	335
N. households	20450	5684	1785	1627	20530	5686	1785	1627
Adjusted R^2	0.256	0.515	0.701	0.705	0.229	0.429	0.553	0.583

Table K-III: Second Stage Regressions

We report 2SLS level regressions in which real annual household consumption is regressed on the household's predicted real labor income level and its interaction with a dummy variable which marks cities in the top quartile (i.e. above the 75% percentile) of the minimum wage level relative to the median wage. Each regression includes also the minimum wage bite dummy on its own. The samples consist of all households for which the labor income share S from minimum wages is zero ($S = 0$), more than 25% ($S > 0.25$), more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. As specified in Equation 3, all regressions include individual members, household and city-level controls, household and interacted province-year fixed effects, and county trends. Standard errors are clustered at the county-level, and *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Household Consumption			
	$S = 0$	$S > 0.25$	$S > 0.5$	$S > 0.75$
	(1)	(2)	(3)	(4)
Household labor income	-0.201	3.520	1.098	1.179
	(1.191)	(4.119)	(0.719)	(0.766)
Household labor income				
$\times$ MW Bite(p>.75)$_{city,t}$	3.799	-0.227	0.270	0.286
	(3.086)	(2.533)	(1.194)	(1.239)
HH-members controls	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
Prov $\times$ year FE	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes
Observations	41709	11309	3442	3137
N clusters	597	469	323	314
N households	17871	4927	1528	1390

Table K-IV: Household Transfer Payments and Minimum Wages

The table explores whether household transfer income are systematically related to the minimum wage across the three household groups with a minimum wage share of income given by $S = 0$, $S > 0.25$ and $S > 0.75$ in a reduced form specification. Control variables are as in Equation 2. Standard errors clustered at county-level are shown in parentheses. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Social Transfers			Unemployment Transfers			Total Transfers		
	$S = 0$	$S > 0.25$	$S > 0.75$	$S = 0$	$S > 0.25$	$S > 0.75$	$S = 0$	$S > 0.25$	$S > 0.75$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Minimum wage	-0.008	0.045	0.090	-0.006	-0.110	-0.155	-0.015	-0.059	-0.055
	(0.005)	(0.027)*	(0.046)**	(0.014)	(0.048)**	(0.066)**	(0.017)	(0.048)	(0.058)
HH-member controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prov × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	44288	12066	3374	44288	12066	3374	44288	12066	3374
N clusters	625	491	335	625	491	335	625	491	335
N. households	20450	5684	1627	20450	5684	1627	20450	5684	162
Adjusted R^2	0.026	0.168	0.331	0.029	0.124	0.241	0.030	0.143	0.278

Table K-V: Household Credit and Minimum Wages

The table explores whether household total credit income is related to the minimum wage across the household groups with a minimum wage share of income given by $S = 0$, $S > 0.25$, $S > 0.5$ and $S > 0.75$ in a reduced form specification. Control variables are as in Equation 2. Standard errors clustered at county-level are shown in parentheses. *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Total Credit			
	$S = 0$	$S > 0.25$	$S > 0.5$	$S > 0.75$
	(1)	(2)	(3)	(4)
Minimum wage	-0.812	-0.095	0.133	0.352
	(1.094)	(0.835)	(1.459)	(1.766)
HH-member controls	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
Province $\times$ year FE	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes
Observations	44288	12066	3699	3374
N. clusters	625	491	346	335
N. households	20450	5684	1785	1627
Adjusted R^2	0.037	0.154	0.192	0.218

L Specification Issues Relating to Bad Controls

Table L-I: Excluding Transfers in First Stage and Reduced Form Regressions

We replicate Table II by excluding government transfers as a control variable. The samples consist of all households for which the labor income share S from minimum wages is zero ($S = 0$), more than 25% ($S > 0.25$), more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. Standard errors are clustered at county-level, and *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variables:	Household Labor Income (First Stage)				Household Consumption (Reduced Form)			
	$S = 0$	$S > 0.25$	$S > 0.5$	$S > 0.75$	$S = 0$	$S > 0.25$	$S > 0.5$	$S > 0.75$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Minimum wage	−0.044	0.321	1.217	1.323	−1.090	1.325	1.861	2.317
	(0.573)	(0.565)	(0.622)*	(0.673)*	(0.640)*	(0.575)**	(0.892)**	(1.017)**
Transfer control	No	No	No	No	No	No	No	No
HH-members controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	44288	12066	3699	3374	44375	12072	3700	3375
N clusters	625	491	346	335	626	491	346	335
N. households	20450	5684	1785	1627	20530	5686	1785	1627
Adjusted R^2	0.251	0.509	0.703	0.708	0.223	0.417	0.567	0.604

Table L-II: Excluding Transfers in Second Stage Regressions

We report 2SLS level regressions excluding government transfers as a control variable. The samples consist of all households for which the labor income share S from minimum wages is zero ($S = 0$), more than 25% ($S > 0.25$), more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. Standard errors are clustered at the county-level, and *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Household Consumption			
	$S = 0$	$S > 0.25$	$S > 0.5$	$S > 0.75$
	(1)	(2)	(3)	(4)
Household labor income	29.493	3.995	1.647	1.809
	(435.522)	(5.993)	(0.867)*	(1.002)*
Transfer control	No	No	No	No
HH-members controls	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes
Observations	41709	11309	3442	3137
N clusters	597	469	323	314
N households	17871	4927	1528	1390

Table L-III: Excluding Household Members' Controls

We replicate Table II by excluding household member control variables. The samples consist of all households for which the labor income share S from minimum wages is zero ($S = 0$), more than 25% ($S > 0.25$), more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. Standard errors are clustered at county-level, and *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variables:	Household Labor Income (First Stage)				Household Consumption (Reduced Form)			
	$S = 0$	$S > 0.25$	$S > 0.5$	$S > 0.75$	$S = 0$	$S > 0.25$	$S > 0.5$	$S > 0.75$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Minimum wage	0.200	0.022	0.813	0.877	−0.920	1.003	1.568	1.844
	(0.560)	(0.600)	(0.703)	(0.790)	(0.637)	(0.565)*	(0.781)**	(0.820)**
Transfer control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HH-members controls	No	No	No	No	No	No	No	No
HH-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	44375	12072	3700	3375	44375	12072	3700	3375
N clusters	626	491	346	335	626	491	346	335
N. households	20530	5686	1785	1627	20530	5686	1785	1627
Adjusted R^2	0.167	0.422	0.622	0.621	0.218	0.407	0.500	0.522

Table L-IV: Excluding Household Members' Controls

We report 2SLS level regressions excluding household member control variables. The samples consist of all households for which the labor income share S from minimum wages is zero ($S = 0$), more than 25% ($S > 0.25$), more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. Standard errors are clustered at the county-level, and *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Household Consumption			
	$S = 0$	$S > 0.25$	$S > 0.5$	$S > 0.75$
	(1)	(2)	(3)	(4)
Household labor income	−4.392	44.540	1.929	2.103
	(13.204)	(1142.520)	(1.358)	(1.626)
Transfer control	Yes	Yes	Yes	Yes
HH-members controls	No	No	No	No
HH-level controls	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes
Observations	41722	11316	3444	3139
N clusters	597	469	323	314
N households	17877	4930	1529	1391

Table L-V: Excluding Household-Level Controls

We replicate Table II by excluding household-level control variables. The samples consist of all households for which the labor income share S from minimum wages is zero ($S = 0$), more than 25% ($S > 0.25$), more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. Standard errors are clustered at county-level, and *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variables:	Household Labor Income (First Stage)				Household Consumption (Reduced Form)			
	$S = 0$	$S > 0.25$	$S > 0.5$	$S > 0.75$	$S = 0$	$S > 0.25$	$S > 0.5$	$S > 0.75$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Minimum wage	−0.035	0.329	1.374	1.527	−1.457	1.378	2.723	3.264
	(0.567)	(0.584)	(0.649)**	(0.699)**	(0.666)**	(0.721)*	(1.306)**	(1.398)**
Transfer control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HH-members controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HH-level controls	No	No	No	No	No	No	No	No
City-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	44288	12066	3699	3374	44375	12072	3700	3375
N clusters	625	491	346	335	626	491	346	335
N. households	20450	5684	1785	1627	20530	5686	1785	1627
Adjusted R^2	0.243	0.503	0.697	0.702	0.062	0.200	0.358	0.391

Table L-VI: Excluding Household-Level Controls

We report 2SLS level regressions excluding household-level control variables. The samples consist of all households for which the labor income share S from minimum wages is zero ($S = 0$), more than 25% ($S > 0.25$), more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. Standard errors are clustered at the county-level, and *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Household Consumption			
	$S = 0$	$S > 0.25$	$S > 0.5$	$S > 0.75$
	(1)	(2)	(3)	(4)
Household labor income	49.793	4.101	2.060	2.252
	(926.688)	(5.954)	(0.943)**	(1.056)**
Transfer control	Yes	Yes	Yes	Yes
HH-members controls	Yes	Yes	Yes	Yes
HH-level controls	No	No	No	No
City-level controls	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes
Observations	41709	11309	3442	3137
N clusters	597	469	323	314
N households	17871	4927	1528	1390

Table L-VII: Excluding City-level Controls

We replicate Table II by excluding city-level control variables. The samples consist of all households for which the labor income share S from minimum wages is zero ($S = 0$), more than 25% ($S > 0.25$), more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. Standard errors are clustered at county-level, and *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variables:	Household Labor Income (First Stage)				Household Consumption (Reduced Form)			
	$S = 0$	$S > 0.25$	$S > 0.5$	$S > 0.75$	$S = 0$	$S > 0.25$	$S > 0.5$	$S > 0.75$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Minimum wage	-0.138	0.210	1.168	1.235	-1.289	0.923	1.237	1.467
	(0.603)	(0.561)	(0.687)*	(0.776)	(0.666)*	(0.507)*	(0.754)	(0.871)*
Transfer control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HH-members controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City-level controls	No	No	No	No	No	No	No	No
Household FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	45590	12276	3766	3436	45590	12276	3766	3436
N clusters	635	499	353	342	635	499	353	342
N. households	21020	5757	1811	1652	21020	5757	1811	1652
Adjusted R^2	0.252	0.513	0.690	0.694	0.231	0.428	0.553	0.582

Table L-VIII: Excluding City-level Controls

We report 2SLS level regressions excluding city-level control variables. The samples consist of all households for which the labor income share S from minimum wages is zero ($S = 0$), more than 25% ($S > 0.25$), more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. Standard errors are clustered at the county-level, and *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Household Consumption			
	$S = 0$	$S > 0.25$	$S > 0.5$	$S > 0.75$
	(1)	(2)	(3)	(4)
Household labor income	9.338	4.381	1.059	1.187
	(38.448)	(9.995)	(0.568)*	(0.689)*
Transfer control	Yes	Yes	Yes	Yes
HH member controls	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes
City-level controls	No	No	No	No
Household FE	Yes	Yes	Yes	Yes
Province$\times$ year FE	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes
Observations	43019	11557	3519	3206
N clusters	631	494	340	328
N households	18449	5038	1564	1422

M Policy Anticipation

Anticipation of minimum wage changes or a delayed household response can compromise the quality our inference. In China, the secretive nature of policy process that determines minimum wage changes leaves limited scope for the anticipation of such measures. Implementation follows the announcement with a very short time lag of generally less than three months.

Notwithstanding this favorable institutional setting, we also propose a statistical test of the research design. In particular, we nest the household consumption response in a more general specification, which allows for asynchronous consumption effects in a two year window around the implementation of the minimum wage change. Formally, we estimate the augmented reduced form

$$C_{h,c,t} = \alpha + \sum_{k=-2}^{+2} \beta_k^{RF} MW_{c,t+k} + X_{m,h,t}\Lambda + X_{h,t}\Theta + X_{city,t}\Xi + \phi_c \cdot t + \eta_h + \delta_{p,t} + \varepsilon_{h,c,t}, \qquad (6)$$

where the parameter of interest β_k^{RF} takes on different time subscripts to capture a persistent or anticipated consumption response relative to the date of minimum wage changes. Time lags of $k = -1, -2$ years or time leads of $k = +1, +2$ years correspond to a placebo events for which we expect $\beta_k^{RF} = 0$ for $k \neq 0$. The lead coefficients are robustness tests for the parallel trend assumption and should show a zero consumption response. The lag terms estimate persistent effects on consumption. By including county linear time trends in the regression, $\phi_c \cdot t$, our specification accommodates different consumption growth trends across households in different counties.

Table M-I reports the augmented reduced form specification by household group. The consumption response to the contemporaneous minimum wage is positive and statistically significant for all minimum-wage-dependent households (i.e. $S > 0.25, S > 0.5, S > 0.75$). Its stronger consumption response for more minimum-wage-dependent households is quantitatively similar to the reduced form results in Section 4.1, Table II, Columns (1)-(4). By contrast, the first and second lead of the minimum wage have are statistically insignificant, in other words we find no evidence that minimum wage hikes are anticipated. Only the first lag for the household category $S > 0.5$ shows a marginally significant negative effect, suggestive of a (partial) reversal of the previous year consumption spike. However, this is not robust across different household categories S.

The fact that the first lag is as large as the contemporaneous effect (in absolute value) and significantly negative warrants further discussion. This suggests that households make some one-off investment and decrease consumption in the next period. This is consistent with our findings on health and education expenditures since those represents an investment for relatively poorer Chinese households. When minimum wages increase, health and education investments are executed, but they are not rolled over to the next year implying a significant drop in consumption the year following the minimum wage increase.

Table M-I: Policy Anticipation and Persistence of the Minimum Wage Effect

We report reduced form specifications regress the annual real household consumption on the contemporaneous real county minimum wage level including lags and leads for one and two years. The samples consist of all households for which the labor income share S from minimum wages is zero ($S = 0$), more than 25% ($S > 0.25$), more than 50% ($S > 0.5$), or more than 75% ($S > 0.75$) of household disposable income. As specified in Equation 6, all regressions include individual members, household and city-level controls, household and interacted province-year fixed effects, and county trends. Standard errors are clustered at county-level, and *, **, *** denote statistical significance at the 10%, 5%, 1% level, respectively.

Dep. variable:	Household Consumption			
	$S = 0$	$S > 0.25$	$S > 0.5$	$S > 0.75$
	(1)	(2)	(3)	(4)
Minimum wage$_t$	−0.818	1.412	1.769	2.056
	(0.672)	(0.774)*	(1.044)*	(1.192)*
Minimum wage$_{t-1}$	0.341	−0.481	−1.865	−1.778
	(0.719)	(0.612)	(1.111)*	(1.131)
Minimum wage$_{t-2}$	0.983	0.860	0.579	0.526
	(0.908)	(0.731)	(1.568)	(1.648)
Minimum wage$_{t+1}$	−0.815	−0.100	−0.934	−0.941
	(0.504)	(0.490)	(0.892)	(0.989)
Minimum wage$_{t+2}$	−0.192	−0.142	0.017	0.098
	(0.392)	(0.322)	(0.457)	(0.580)
HH member controls	Yes	Yes	Yes	Yes
HH-level controls	Yes	Yes	Yes	Yes
City-level controls	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
Province × year FE	Yes	Yes	Yes	Yes
County trends	Yes	Yes	Yes	Yes
Observations	43621	12086	3685	3315
N clusters	626	491	346	335
N households	20530	5686	1785	1627
Adjusted R^2	0.241	0.442	0.563	0.588