Working Time and Household Saving Rates

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Abstract

The high aggregate household saving rate is one of the unique feature of the Chinese economy. Additionally, China's worker working hours has been the highest in the recent two decades. This paper aims at estimating the relationship between working time and household saving rate using data from China Household Finance Survey (CHFS). Using instrumental variable approach, we find that reducing working time could significantly lead to a decrease in household saving rate. Using American Time Use Survey (ATUS) data, we find less working time is associated with more time on consumption related activities. We also find that working less would boost consumption on entertainment and tourism activity, but no impact on consumption activities such as medical expenditure. This result is robust to outliers. We also find heterogeneous effects across subsamples.

Keywords: China's household saving rate, working time.

1 Introduction

The high aggregate household saving rate is one of the unique feature of the Chinese economy. Figure 1 is an international comparison of household saving rates. According to National Accounts of OECD Countries, all western developed countries have low level of household saving rate below 15% and experiencing slight decrease since 1990's. Similar level and trend were observed for Japan and Korean which shares the same culture background as China. China's household savings as a percentage of household disposal income have been the highest in the world from 1990's. Since the year 2001 when China joins the World Trade Organization (WTO), the household saving rate has been increasing steadily from 28 percent in 2000 to 37 percent in 2015.

Over the same period of China rapid saving rate growth, China's worker working hours has been also the highest in the recent two decades. From Figure 2, we can see that for western developed countries, such as Germany, France, Great Kingdom, Italy, Canada, and United States, the average weekly hours actually worked per worker is at low level comparing to other countries and have a slight decreasing trend since 2000. By 2016, the lowest average weekly hours worked per work is 26 hours in Germany, the highest is around 34 hours for United States. Hours worked per worker in Russian is quite stable at 38 hours. In Asian, both Japan and Korea have experienced gradual decrease in hours worked since 2000. Japan witnessed slight decrease from 35 to 33 hours from 2000 to 2016; when Korean experienced dramatic slide in hours worked from 48 hours to 40 hours per week. Among these countries, hours worked per worker in China fluctuates between 45 hours and 48 hours per week. International comparison shows China worker works on average 10 more hours per week than western developed countries.

Working too much has consequences both for the people and the society. In addition to the suffering holiday experience, workers who works too much suffer from poor physical and emotional health. (Abramowitz, 2012)

There exists an important gap in the literature that links working too much and household saving rates because of the difficulty of obtaining exogenous of working time.

This paper provides insight into the effect of working time on consumption behavior and household saving rates using China Household Finance Survey (CHFS) household-level data. In order to gain a better understanding of the relationship of working time and household saving rates, we construct several working time variables that represent

the labor supply in each household.

While our empirical approach does not allow us to pin down the mechanism underlying there effects, American Time Use Survey (ATUS) would be used to explain the mechanisms. Individual's working hours decreases time spent on consumption related activities. In order to gain insight into the plausibility of this explanation, we investigate the relationship between working hours in a day and time spent on consumption related activities using data from the American Time Use Survey (ATUS). The results provide further support for the idea that the effects of too much working on consumption may be driven by having less time spent on purchasing goods and services. The rest of the paper is organized as follows. In the next section, we provide theoretical framework on the effects of working time and household saving rates. We then discuss our data and key variables in Section 3, including different ways of defining working time, and the set of economic indicators that allow us to address potential endogeneity concerns. We explain our empirical strategy that used these measures in Section 4 and present the results of our analysis of the effects of working time on household saving rates in Section 5. Section 6 discuss the mechanisms in light of our findings, along with an analysis of relationship of working time and time spent on consumption using American Time Use Survey. All figures and tables are presented in Appendix.

2 Literature Review

According to the life-cycle hypothesis (LCH), the basic idea about demographic explanation is that a decrease in the non-working population, which consists of the young and the old, would increase household savings due to the "less mouths to feed". In addition, China has a long historical tradition about children taking care of their elder parents. As a result, since the one-child policy was introduced in 1979, increased savings were not only due to the reduction in young population but also viewed as an effective substitute for children ("old-age security"). Using a ratio of working population to the number of nonworking ("minors") as a proxy to the demographic change, Modigliani and Cao (2004) find that the increased China's household saving rate over the period from 1953 to 2000 can be well explained by the increased ratio of employed population to nonworking population, mainly driven by the decrease in the young dependent population. In addition, Curtis, Lugauer, and Mark (2015) conduct a quantitative overlapping generations model

and also provide some evidence supporting the link between demographics and the saving rate at the aggregate level. However, applying panel data analysis and separately considering the young dependent ratio and the old dependent ratio, Horioka and Wan (2007) finds that the changes in those ratios do not go very far in explaining the China's provincial household saving rate for the period 1995–2004. Using the data from the Urban Household Survey (UHS), Chamon and Prasad (2010) reach a similar conclusion: there is no significant effect of the demographic shifts on China's household saving rate. Recent work about the demographic explanations focus on bridging the micro-level mechanism with the macro-level framework and provide some micro-evidence (see e.g., İmrohoroğlu, Zhao, et al., 2017 and Choukhmane, Coeurdacier, and Jin, 2013). One concern about the demographic explanations lies in that demographic shift is not static but dynamic. As the age population move over time, we would not see a consistent high and even rising household saving rate. In fact, since 2000, Chinese household saving rate have been rising rapidly and hit the highest point in the history.

The precautionary saving motives argue that people who are not covered by a social safety network tend to have precautionary saving motives and thus save more for unexpected events (Giles and Yoo, 2007). Although the Chinese economy has experienced a rapid growth since the reform and opening up, due to lack of a safe social security and insurance network and increasing costs on education, housing, and health care, etc, make Chinese household tend to save more to respond the income and expenditures uncertainties in future. On the income uncertainties side, Meng (2003) examine the role of precautionary saving in Chinese urban households during the period from 1995 to 1999. She finds that not only the Chinese urban households ever experienced past income uncertainties tend to have increased propensity to consume, but for households without unemployed members, the income uncertainty has an even stronger effect on saving. Using China's reform of the stated-owned enterprises (SOE) in the late 1990s as a natural experiment, **?** also show that the precautionary saving motive does exist in Chinese households. Using the CHFS, however, our preliminary results show that the saving rate of households whose heads work in government entities, public-sector organizations and state-owned enterprises are slightly and insignificantly higher (0.04% higher) than that of households whose heads work in privately-owned enterprises, collectively-owned enterprises, and foreign-funded enterprises. This result shows that China's gradually well-established labor law and law of employment contracts makes income uncertainty a less influential factor for the increasing household saving rate. On the expenditure uncertainties side, Chamon and Prasad (2010) argue that uncertainty in expenditures, particularly on education, housing and

health care, may generate high aggregate savings for the young and the elderly. Over the last decade or so, however, the social insurance system has been firmly established. There is almost universal health insurance coverage and rapid retirement insurance coverage has not lowered the saving rate. In addition, there is no consensus as to whether the high housing prices can explain the high household saving rate (Wang and Wen, 2012).

Another interesting explanation is the imbalanced sex ratio and competitive motive. The idea is build on the traditional culture of son preferences in Chinese households: as sex ratio increase, Chinese households tend to save more in order to improve son's competitiveness in the marriage market. Using household level data, Wei and Zhang (2011) find that saving rates for the households with sons in the high sex ratio county are significant higher than the households with sons in the low sex ratio county in both rural and urban sample. At provincial level, they find evidence that the sex ratio has a significant positive effect on the provincial aggregate household saving rate. They argue that during 1990–2007, the factor can account for at least 60 percent actual increase in China's household saving rate. However, we reexamine the competitive saving motives using the same data sources as they did and find the evidence may be not robust. First, although we find the similar effects of the sex ratio on household saving rates using the sex ratio from the 1990 census, when using the sex ratio from 2000 census, the effects vanish. Second, even using the ratio from 1990 census, the effects exist only in the rich households sample and rich counties sample. For the poor households and poor counties, the estimates are significant negative and statistical insignificant, respectively.

There are other explanations on Chinese household saving rate. According to Carroll and Weil (1994), the rising household savings may be due to a consequence of high income growth and habit formation. Horioka and Wan (2007) find that the lagged saving rate has a significant positive effect on the provincial-level household saving, which is consistent with the existence of inertia or persistence. However, as argued in Modigliani and Cao (2004), during the 1950s to the mid-1970s, average Chinese household saving rate was lower than 5 percent, which implies that the Chinese cultural ethical values of "thrifty" counts little, if any. Cooper and Zhu (2017) estimate a structural lifecyle model to study household finance in China. They find that the high Chinese household raving rate is mainly driven by the labor market risk and the patient Chinese households. Other studies, such as Ge, Yang, and Zhang (2012), Rosenzweig and Zhang (2014), and Song and Yang (2012), focus on explaining another feature of Chinese household saving rate, the "U–shaped" age-saving profile started with Chamon and Prasad (2010).

Compared to abundant literature on China's household saving rate, there are limited studies so far on working time.

3 Theoretical Framework

Given the amount of time individuals spend working, it is important to consider the effects of hours worked on household saving rate and the channels through which these might come about. To formally outline these channels, the theoretical framework used in this paper follows the model in Lindo, Schaller, Hansen (2013). An individual maximize his or her utility by subject to time and budget constraints. Individual will allocate the time spent on consumption related activities to maximize utility. The change in hours worked could have several effects. The income effect of increased working time would be positively associated with the consumption of goods and services and would thus lead to a decrease in household saving rate. The substitution effect of increased working time would be negatively associated with time spent in consumption related activities and would generate a higher household saving rate. Since each of these effects act in opposite directions, the net effect would be ambiguous, but is it more likely to be negatively associated with consumption of goods and thus positively associated with household saving rate if workers works more time than the standard working time enforced by Labor Law of China.

There are several mechanisms through which working time could affect consumption and household saving rate. If individual works more hours, her leisure time drops. Becker (1965) argues that consumption need time. As total leisure time decreases, the time allocated to each subcategory activities would be non-increasing, including sports activities, childcare or elder-care activities and time used for consumption activities. On the other hand, if individual works less, total time available for leisure is more. Time allocated to each activities would be non-decreasing. In which, individual will spend more time on shopping, entertainment activities, tourism, and health-related activities.

This paper will examine the relationship between working time and household saving rates and attempt to identify the mechanisms driving this relationship.

4 Data and Key Variables

Our data on labor force working time and household saving rates are China Household Finance Survey (CHFS). CHFS is nationally representative data set for estimating the effect of working time on household saving rate. In particular, we use the China Household Finance Survey (CHFS) 2015 wave, which covers a larger sample of individual and households and contains more detailed information on employment, income, assets, debts, and expenditures.

Data quality is an issue for this research of working time. Given that our key explanatory variable is working time including working months in a year, average working days in a month, and average working hours in a working day. The data does not reveal any information on holidays, each individual would have different arrangement on holidays depending on their industry, occupation and the employment contract with the employer. The working time variable is best thought of as a proxy of the key variable. Concerns of using such proxies arise.

We consider several different working time format in our analysis. In baseline estimation, we use the number of days worked during a month; for robustness check, we switch our key variable to weekly hours worked. One caveat about the working time is that it is potentially endogenous with respect to consumption and household saving rate because it depends on the size of the household actively participating in the labor force at a given time. In particular, there may be unobserved factors at the household level that are associated both with labor supply and consumption behavior. For example, individuals who saves more are more likely to consume less. We do not take into considerations of national holidays in calculating working time due to data limitations. However, such a strategy should not bias out results for the following reason. The number of holidays individuals could have mostly depend on the employment types. Employees in private sectors usually have less of national holidays, whereas people in public sectors or state-owned enterprises have standard holidays as the Labor Law indicates. In all specification, the employment dummies should help us alleviate this concern.

Household is composed of labor force and non-labor force. Labor force is defined as employed individuals, unemployed individuals who are actively seeking to be re-employment, and seasonally layoff individuals. Because we do not have consumption data on individual data, we will combine working time within a household to match consumption. We separately control the household size and the labor force size to eliminate the "added mouth

effect".

In general equilibrium, if working time is adjusted, the labor income will change accordingly. To control for the channel of working time effect on household saving rate through income, we control the unit time labor income. First, in the specification of working days as working time, we control for daily labor income by dividing total labor income in 2014 by the number of days individual worked in the year. Then in the specification of weekly hours worked, we control the hourly income by dividing the total labor income in 2014 by the total number of hours worked. In all specifications, we also add the household non-labor income as a control of capital income, and other transfer income. Noticeably, the total income is controlled implicitly in the model by multiplying working time with unit time income, then add to non-labor income.

Individuals in different industries and employment type have different working time arrangement. In CHFS 2015, there are 23 industries and 5 employment types. Industries are categorized based on National Statistics Yearbook; whereas employment type include public sectors (government or public institutions), state-owned enterprises, collective enterprises, private business employee, foreign or joint venture enterprise, non-profit and non-government organizations, military and private business owners. Industry effect of saving rate works through the impact of working time, therefore, we do not control the industry dummies. On the other hand, employment types indicate different levels of job security which has impact on household saving rate. Therefore, we control employment type in all our specifications to control the effect of employment other than the channel of working time. Additionally, we find heterogeneous effect for sub-samples such as workers in public sectors and private sectors.

To address the potential endogeneity of the working time variable and to explore the robustness of our estimates. We construct several economics indicators as instrumental variables. The first of these is the annual province-industry-level working time, which we calculate by dividing the sum of working time for a specific industry in each province by the total number of workers in the industry and province. We also use data from 2016 China Population & Employment Statistics Yearbook to construct gender specific average industry weekly working hours. While these are imperfect proxies for actual labor supply, they have the major benefits of isolating the exogenous variation not driven by individual characteristics. Another instrumental variable is average annual occupation-province level working time, which is calculated by dividing the sum of working time for a specific occupation in each province by the total number of workers in the occupation and

province. We categorized jobs into 12 occupations: sales, managerial, admin, worker, IT technical, general technical, driver/delivery, employee, research, service people, teacher, and doctor.

Table **??** is summary statistics of the variables used in the specification. Chinese workers on average work 250 days in 2014. The average weekly hours worked is 47; average monthly hours worked is 208; annual working hours is 2195 hours.

Summary statistics of the 3 instruments

5 Empirical Specification

To identify the causal effect of working time on household consumption and saving rates is challenging because the decision of of how much time spent on working may be determined by unobserved individual or household factors that directly impact household consumption and saving rates. In this paper, I first estimate the ordinary squares specifications, then I address this endogeneity problem using instrumental variable approach.

The OLS specification estimate models where individual working time are exogenous determined:

$$Saving\_Rate_i = \beta_0 + \beta_1 * Working_Time + \beta_2 * ln\_earning + \beta * X + \gamma_j + \epsilon \qquad (1)$$

where y_i represents logarithm of household consumption. Working time measures the usual working hours per week or working days each month. X include additional control variables for household head characteristics such as: age, age^2, $gender$, $yearsofeducation$, $healthstatus$ and controls for household characteristics such as: $householdsieze$, $householdnon-laborincome$, $whetherthereischildforacertainage$. γ are county fixed effects to control for time-invariant provincial characteristics. The error term is represented by ϵ. Specifications are first estimated for the full sample and then I have robust check and heterogeneous effects estimation in following sections.

We begin by estimating separate regressions for each of our general format of working time. Next, to address the potential endogeneity of the working time and to explore the robustness of our estimates, instrumental variable approach was used for endogenous of working time. Working days per month is instrumented by annual industry-level working days and annual occupational-level working days using CHFS2015 surveys. They have

advantages of isolating the demand-driven changes in working time.

6 Main Results

6.1 Baseline

Results section will be updated.

Baseline regression results is shown in Table **??**. Column 1 shows that, for each additionally day of work, household saving rate would increase by 0.12% after controlling demographics. Column 2 and column 3 shows the estimates after controlling and province fixed effects and employment type dummies. The coefficients are slightly higher at 0.15%. When we control for total household income, the coefficients becomes smaller than the specification with unit time labor income.

6.2 IV Approach

Instrumental variable approach returns similar estimates of the baseline regression. In all specifications, for each extra day of working, household saving rate would go up by 0.16%.

6.3 Robustness

For robustness check, we switch our key variable of working time to a measure of weekly hours worked. For each extra hour worked in one week, the saving rate would go up by 0.52% to 0.65%. This result is consistent with our baseline results.

6.4 Heterogeneous

7 Channels for Effects of Working Time on Consumption

A plausible explanation of the mechanism behind the effects of working time on household saving rate is that with an individual works more, the availability of time to spend on consumption and other leisure activities is limited, since consumption needs time. As an individual works less, more time could be devoted to leisure such as sports, childcare, elder

care, housework and consumption-related activities including grocery shopping, merchandise shopping, personal care, entertainment and tourism. Therefore, working less hours will increase household consumption and lead to a decreasing household saving rate.

In order to gain insight into the plausibility of this explanation, we supplement our analysis of the effect of working time on consumption with an investigation of the relationship between individual total working time and time spent on consumption-related activities using data from the American Time Use Survey. The results provide further support for the notion that the effects of working time on household saving rates may be driven by impacts on people having more time to spent on consumption related activities.

Whether this explanation is compelling depends on the extent to which individual's working time actually relates to time use in consumption activities. In particular, if this mechanism is truly at work, then we should observe that individual spend less time on consumption when they are employed. We test these predictions using repeated cross-sections of the American Time Use Survey (ATUS) from 2010 and 2016.

The ATUS provides information on the activities that an individual conducted during a 24-hour period. Moreover, the ATUS asks the start and finish time of each activity, as well as the waiting time and travel time for each activity. The sum of these measures are meant to serve as proxies for time spent on consumption related activities. For our purposes, we focus on surveyed individuals who are currently working. This restriction leads to a sample of approximately 92 hundreds. Summary statistics is shown in Table 6. Average working time is 461 minutes per day, the median is 505 minutes. Time allocated to consumption activities is 106 minutes on average. 84% of the sample live in metro-politan areas. Average years of schooling is 14 years.

Our analysis considers how working time relate to household saving rate. At the same time, we are aware that working time is not exogenous. However ATUS should help us to mitigate omitted variable bias because a good feature of the ATUS is that its sample is drawn from respondents surveyed in the Current Population Survey (CPS) and is conducted two to five months after CPS. This feature of ATUS allows us to control flexibly for the economic circumstances of the family a few months prior to the time-use survey. In our specification, we control for the individual's employment status, the spouse's employment status.

The consumption activities are shared through the respondent and his or her spouse. To tackle with this "added consumer effect", we divide the samples into 3 categories. Each

regression control for respondent's age, gender, years of education, log of weekly income, childcare and elder care time, and number of children for younger than 18 years old. We also controlled if respondent live in metropolitan area, race fixed effect, day of week and year fixed effect. We first start with the samples for families that the household head does not have a partner. Column 1-4 in Table 7 indicates that as working time increase by 100 minutes, time spent on consumption activities will reduce by 11 minutes. This result is robust after we add race and weekday fixed effects. We also find that females tend to spent 9 more minutes than male on consumption activities daily. As earnings per week increase, time spent on consumption is increasing since individuals with higher income has higher purchasing power and conduct more purchasing of goods and services.

Next, we looked at the samples which the respondent has an unemployed married or unmarried partner. The results is significant at 1% level. The coefficients are slightly higher than that "No Partner" samples. The result is robust to different races and weekday effect. For each 100 minutes more working time, time allocated to consuming on average reduce by 13 minutes. Lastly, we focus on samples which the respondent has an employed partner. The results are quite similar than "Unemployed Partner" samples. The estimates also demonstrate that having a partner either married or not married is associated with more time spent on consumption for less working time.

Overall, these results support the idea that the time spent on consumption-related activities may be a key mechanism linking working time and household saving rate. They suggest that more working time results in less time spent on purchasing goods and services. There are potential confounders with

8 Conclusion

The high aggregate household saving rate is one of the unique feature of the Chinese economy. Figure 1 is an international comparison of household saving rates. According to National Accounts of OECD Countries, all western developed countries have low level of household saving rate below 15% and experiencing slight decrease since 1990's. Similar level and trend were observed for Japan and Korean which shares the same culture background as China. China's household savings as a percentage of household disposal income have been the highest in the world from 1990's. Since the year 2001 when China joins the World Trade Organization (WTO), the household saving rate has been increasing steadily from 28 percent in 2000 to 37 percent in 2015.

This paper provides insight into the effect of working time on consumption behavior and household saving rates using China Household Finance Survey (CHFS) household-level data. In order to gain a better understanding of the relationship of working time and household saving rates, we construct several working time variables that represent the labor supply in each household.

Using CHFS 2015 damples, the estimated effect of working day is 0.16%. For each extra day of work, the household saving rate would go up by 0.16%. We find consistent results when we switch our key variable to weekly hours worked. The instrumental variable results are in line with this findings.

While our empirical approach does not allow us to pin down the mechanism underlying there effects, American Time Use Survey (ATUS) is used to explain the mechanisms. The results support the idea that the time spent on consumption-related activities may be a key mechanism linking working time and household saving rate. They suggest that more working time results in less time spent on purchasing goods and services.

We should bear in mind that there are limitation of this study. First, national holidays are not taken into consideration when calculating working time. This might lead to measurement error of this key variable. Controlling for the employment type alleviate our concern because national holidays varies across public sectors and private sectors, it does not seem to vary much within each employment type. Second, because we do not have consumption data on individual level, for the setup of the variable "working time", we are combining working time for all employed persons in a household. This might lead to unequal comparison between groups. For this reason, we focused just on nuclear families to eliminate all confounding factors.

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Appendix

A Figures

Figure 1: Household Saving Rate Across Countries

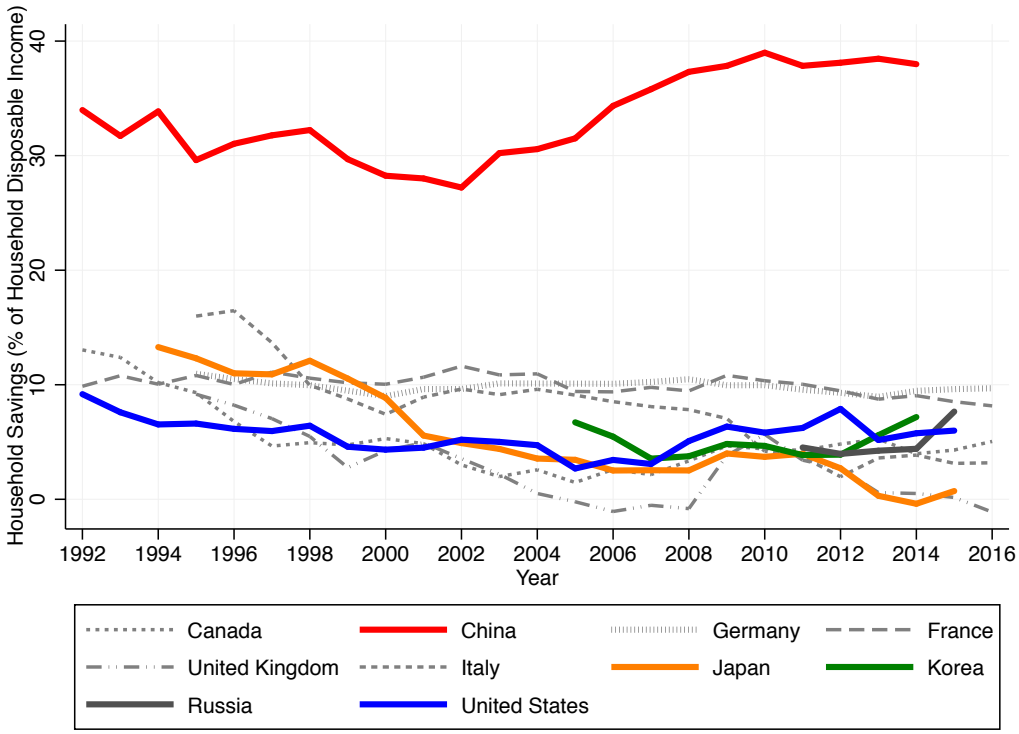
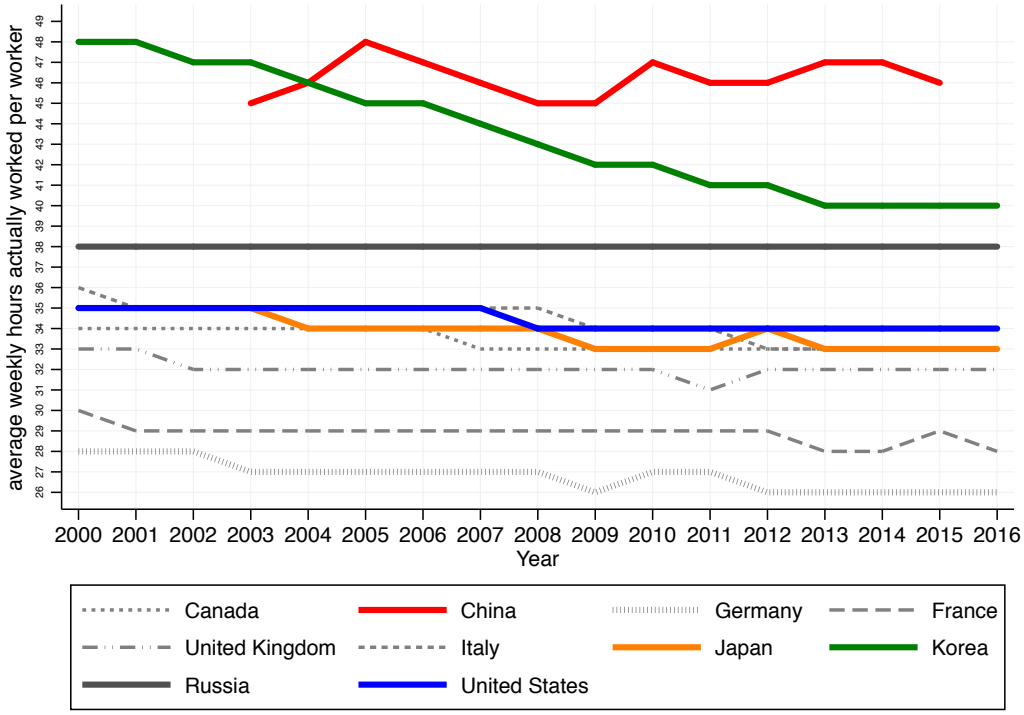


Figure 2: Weekly Working Hours by Country



B Tables

Table 1: **Statistics: Full Sample Remove Outlier**

variable	N	mean	p50	sd	min	max
workho k	8961	47.27449	44.5	15.94954	0	168
workho r	8923	2201.712	2112	885.1207	16	8928
workho h	8961	209.7214	196	70.55599	1	744
hh$_w$*or k*	17323	58.83455	54	46.15752	0	426
hh$_w$*or h*	17323	260.9674	240	204.6346	0	1886
hh$_w$*or r*	17323	2599.031	2376	2118.222	0	21442.5
ys$_m$*ean*	15790	160.8777	163.375	103.3218	0	472
h k$_m$*ean*	15790	30.93288	34.25	19.2815	0	162.5
hh$_w$*or..*	15790	137.2134	152	85.4822	0	720
ar$_m$*ean*	8923	1179.756	1056	693.6374	8	8640
s$_m$*ean*1	15310	188.7232	210	104.9623	0	472
k$_m$*ean*1	15310	36.54387	39.5	20.2156	0	162.5
h$_m$*ean*1	15310	162.0978	176	89.59885	0	720
r$_m$*ean*1	8923	1370.908	1093.5	859.7728	8	8640
hhlabo..	13121	161.1809	127.9818	182.6425	0	10400
hh$_n$*on c*	17323	29414.17	14189	40473.74	-105600	284000
hhlabo..	13121	161.541	128.2051	183.0483	0	10400
hh$_n$*on* 1	17323	29318.75	14038	40359.85	-105600	284000
hh$_i$*nc e*	17323	73435.93	60000	54723.73	900	285050
hh$_s$*ize*	17323	3.239341	3	1.300581	1	14
hh$_e$*mp d*	17323	1.660329	2	.9614269	0	8
hh$_n$*on d*	17323	1.579012	1	1.138316	0	12
hh$_l$*ab e*	17323	1.970223	2	1.038088	0	8
hh$_n$*on e*	17323	1.269118	1	.9789648	0	11
age	17323	46.0452	47	11.45924	16	65
age2	17323	2251.467	2209	1037.308	256	4225
gender	17323	.3050328	0	.4604346	0	1
married	15629	.8630608	1	.3437941	0	1
yos	17302	11.13311	12	3.620549	0	22
hukou	16510	.6340527	1	.4817094	0	1
hh$_h$*ea h*	17321	.260939	0	.4391594	0	1
health e	17323	.0432539	0	.2034341	0	1
pension	17221	.1418803	0	.3489374	0	1
employ 1	8878	.4547636	0	.4979775	0	1
employ 2	8878	.3802529	0	.4854762	0	1
employ 3	8878	.1649835	0	.3711865	0	1
indus y1	8117	.0146831	0	.1202882	0	1
indus y2	8117	.0126007	0	.1115501	0	1
indus y3	8117	.1605884	0	.3671735	0	1
indus y4	8117	.0426968	0	.2021852	0	1
indus y5	8117	.1067704	19 0	.3088401	0	1
indus y6	8117	.0465863	0	.2107641	0	1
indus y7	8117	.0878672	0	.2831192	0	1
indus y8	8117	.0358955	0	.1860411	0	1
indus y9	8117	.0236694	0	.1520264	0	1

Table 2: Results_OLS_IV

	(1) OLS	(2) IV	(3) OLS	(4) IV
ln_hhworkhoursweek1	-0.1498***	-0.2371***	-0.0596**	-0.1290***
	(0.0235)	(0.0497)	(0.0236)	(0.0467)
ln_hhlaborinc1	0.0861***	0.0884***		
	(0.0073)	(0.0075)		
lnhhlaborinc1_hourly			0.0864***	0.0818***
			(0.0074)	(0.0077)
ln_hhnonlaborinc1	0.0193***	0.0189***	0.0192***	0.0189***
	(0.0018)	(0.0018)	(0.0018)	(0.0018)
hh_size	0.0911***	0.0896***	0.0903***	0.0882***
	(0.0101)	(0.0101)	(0.0101)	(0.0101)
hh_employed	0.0115	-0.0021	0.0684***	0.0584***
	(0.0190)	(0.0208)	(0.0187)	(0.0199)
age	0.0088	0.0104	0.0118	0.0140*
	(0.0072)	(0.0072)	(0.0072)	(0.0072)
age2	-0.0002**	-0.0002**	-0.0002**	-0.0002***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
gender	0.0613***	0.0562***	0.0632***	0.0577***
	(0.0189)	(0.0190)	(0.0190)	(0.0191)
N	4485	4473	4485	4466
adj. R^2	0.267	0.266	0.267	0.266

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3: Results_Consumption Type

	(1) food	(2) living	(3) education	(4) medical	(5) clothing	(6) entertainment	(7) luxury	(8) tourism
ln_hhworkhoursweek	-0.0869***	-0.1205***	-0.2308***	0.0398	-0.2014***	-0.0818***	-0.2617	-0.2939***
	(0.0140)	(0.0249)	(0.0355)	(0.0395)	(0.0238)	(0.0255)	(0.1870)	(0.0585)
ln_hhlaborinc1	0.0119***	0.0257***	0.0712***	0.0115	0.0565***	0.0354***	0.0105	0.0671***
	(0.0030)	(0.0053)	(0.0074)	(0.0088)	(0.0050)	(0.0053)	(0.0390)	(0.0113)
ln_hhnonlaborinc1	0.0134***	0.0099***	0.0356***	0.0334***	0.0220***	0.0207***	0.0673***	0.0294***
	(0.0013)	(0.0022)	(0.0032)	(0.0037)	(0.0021)	(0.0023)	(0.0250)	(0.0057)
hh_size	0.0908***	0.0224**	0.1828***	0.1980***	0.0455***	0.0313***	-0.0309	0.0025
	(0.0053)	(0.0094)	(0.0136)	(0.0151)	(0.0090)	(0.0098)	(0.0739)	(0.0237)
hh_employed	-0.0317***	0.0096	-0.1099***	-0.0799***	0.0747***	0.0336**	-0.1120	-0.0026
	(0.0083)	(0.0147)	(0.0210)	(0.0235)	(0.0140)	(0.0151)	(0.1117)	(0.0366)
age	-0.0041	-0.0719***	0.1455***	-0.0132	0.0004	-0.0134*	0.0213	-0.0026
	(0.0040)	(0.0072)	(0.0102)	(0.0115)	(0.0068)	(0.0074)	(0.0504)	(0.0164)
age2	0.0000	0.0007***	-0.0018***	0.0002*	-0.0001*	0.0000	-0.0004	0.0001
	(0.0000)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0006)	(0.0002)
gender	0.0007	0.0164	0.1146***	0.1503***	0.0938***	0.0588***	0.0369	0.1047**
	(0.0118)	(0.0210)	(0.0297)	(0.0341)	(0.0200)	(0.0213)	(0.1512)	(0.0460)
N	11141	11111	10351	8070	10750	9716	572	3427
adj. R^2	0.186	0.129	0.183	0.125	0.194	0.162	0.025	0.147

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Results_Consumption_Wage

	(1) consump	(2) consump	(3) tourism	(4) tourism	(5) entertain	(6) entertain	(7) medical	(8) medical	(9) luxury	(10) luxury
ln_hhworkhoursweek	-0.1105***	-0.1755***	-0.0753	-0.3529***	0.0230	-0.1148**	0.1801*	0.1413	0.1889	-0.5972**
	(0.0351)	(0.0336)	(0.1770)	(0.0882)	(0.0617)	(0.0519)	(0.1012)	(0.0898)	(0.7904)	(0.2478)
ln_hhlaborinc1	-0.0192***	0.3318***	-0.0406	0.4667***	-0.0299**	0.3273***	-0.0383*	0.0983	-0.1596	0.5946***
	(0.0067)	(0.0222)	(0.0280)	(0.0506)	(0.0116)	(0.0337)	(0.0212)	(0.0607)	(0.1059)	(0.1477)
ln_hhnonlaborinc1	0.0157***	0.0105***	0.0141	0.0085	0.0146***	0.0074*	0.0299***	0.0290***	0.0014	0.0840***
	(0.0022)	(0.0026)	(0.0117)	(0.0068)	(0.0039)	(0.0040)	(0.0064)	(0.0079)	(0.1114)	(0.0258)
hh_size	0.0820***	0.0482***	-0.1181*	0.0604*	0.0391*	0.0011	0.1692***	0.2011***	-0.1756	-0.1201
	(0.0119)	(0.0130)	(0.0649)	(0.0328)	(0.0212)	(0.0199)	(0.0337)	(0.0350)	(0.2923)	(0.1010)
hh_employed	0.0204	-0.0070	0.1178	-0.1758***	0.1060***	-0.0925***	-0.0502	-0.0048	-0.4000	-0.1651
	(0.0179)	(0.0209)	(0.1056)	(0.0524)	(0.0315)	(0.0321)	(0.0515)	(0.0571)	(0.4665)	(0.1790)
age	-0.0033	0.0329***	0.0653	-0.0602**	-0.0219	0.0006	0.0179	-0.0718***	-0.0308	-0.0789
	(0.0084)	(0.0098)	(0.0478)	(0.0241)	(0.0152)	(0.0150)	(0.0236)	(0.0276)	(0.2497)	(0.0771)
age2	-0.0001	-0.0004***	-0.0008	0.0009***	0.0001	-0.0001	-0.0000	0.0010***	0.0011	0.0009
	(0.0001)	(0.0001)	(0.0006)	(0.0003)	(0.0002)	(0.0002)	(0.0003)	(0.0003)	(0.0031)	(0.0010)
gender	0.0489**	0.0404	0.3808***	0.1793***	0.0713*	0.1624***	0.2375***	0.0293	1.0403*	0.1479
	(0.0242)	(0.0248)	(0.1159)	(0.0577)	(0.0427)	(0.0378)	(0.0703)	(0.0694)	(0.5277)	(0.1696)
N	2790	2903	594	1421	2336	2707	2000	1965	75	255
adj. R^2	0.208	0.247	0.186	0.243	0.146	0.170	0.127	0.125	0.335	0.216

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Results_Consumption_College

	(1) consump	(2) consump	(3) tourism	(4) tourism	(5) entertain	(6) entertain	(7) medical	(8) medical	(9) luxury	(10) luxury
ln_hhworkhoursweek	-0.1527**	-0.1754***	-0.2369*	-0.2856***	-0.0064	-0.1006**	0.0560	0.0947	0.6400	-0.4559*
	(0.0630)	(0.0247)	(0.1360)	(0.0997)	(0.0887)	(0.0417)	(0.1449)	(0.0697)	(0.5082)	(0.2617)
ln_hhlaborinc1	0.0380***	0.0546***	0.0911***	0.1028***	0.0170	0.0436***	-0.0122	0.0044	-0.0472	0.4572***
	(0.0109)	(0.0067)	(0.0240)	(0.0235)	(0.0154)	(0.0111)	(0.0285)	(0.0201)	(0.0675)	(0.1280)
ln_hhnonlaborinc1	0.0284***	0.0168***	0.0249***	0.0121	0.0167***	0.0171***	0.0386***	0.0334***	-0.0114	0.1251***
	(0.0039)	(0.0019)	(0.0095)	(0.0080)	(0.0055)	(0.0033)	(0.0104)	(0.0056)	(0.0582)	(0.0309)
hh_size	-0.0111	0.0814***	-0.0084	-0.0083	-0.0592**	0.0291*	0.1495***	0.1797***	0.1122	-0.2424*
	(0.0210)	(0.0101)	(0.0444)	(0.0429)	(0.0299)	(0.0169)	(0.0497)	(0.0280)	(0.1644)	(0.1261)
hh_employed	0.0261	0.0336**	-0.1136	0.0260	0.0514	0.0355	0.0160	-0.0333	-0.1565	0.0839
	(0.0332)	(0.0149)	(0.0741)	(0.0642)	(0.0467)	(0.0250)	(0.0856)	(0.0416)	(0.3475)	(0.1866)
age	0.0642***	0.0097	0.0129	0.0198	0.0199	-0.0106	-0.0179	-0.0242	-0.2141	-0.0226
	(0.0182)	(0.0071)	(0.0375)	(0.0289)	(0.0256)	(0.0120)	(0.0437)	(0.0199)	(0.1916)	(0.0802)
age2	-0.0008***	-0.0002***	-0.0001	-0.0001	-0.0002	-0.0001	0.0005	0.0004	0.0027	0.0002
	(0.0002)	(0.0001)	(0.0005)	(0.0003)	(0.0003)	(0.0001)	(0.0005)	(0.0002)	(0.0025)	(0.0010)
gender	0.1012***	0.0197	0.2744***	0.1227	0.1924***	0.0811**	0.1149	0.1291**	0.1787	0.5863**
	(0.0374)	(0.0206)	(0.0758)	(0.0778)	(0.0531)	(0.0343)	(0.0904)	(0.0592)	(0.2913)	(0.2254)
N	1342	4359	824	1193	1300	3749	890	3081	146	184
adj. R^2	0.194	0.226	0.165	0.185	0.100	0.148	0.153	0.109	0.111	0.251

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6: **Sample Means from ATUS**

variable	**N**	**mean**	**median**	**sd**	**min**	**max**
working time	29826	461.783	505	220.2358	1	1405
time for consuming	31602	106.2781	70	108.6086	1	1100
$\text{tm}_e lder$	36843	5.669381	0	45.61756	0	1215
$\text{tm}_c hild$	36843	133.9114	0	239.6883	0	1170
$\text{num}_c h\ d$	54070	.9370261	1	1.139176	0	10
age	54070	43.15016	43	13.87188	15	85
gender	54070	.4914	0	.4999307	0	1
yos	54070	14.15145	13	2.96379	0	21
metro	53642	.8467246	1	.3602561	0	1
fulltime	54070	.7241909	1	.4469252	0	1
weekly c	44265	927.6567	755	683.5591	0	2884.61
partner	54070	.5589976	1	.4965117	0	1
partne p	30225	.7416708	1	.4377232	0	1
partne l	22417	.7951109	1	.4036296	0	1

Source: ATUS 2010-2016.dta

Table 7: Working Time and Time Spent on Consumption Activities

	No Partner				Partner Unemployed				Partner Employed			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	tc	tc	tc	tc	tc	tc	tc	tc	tc	tc	tc	tc
working time	-0.11***	-0.11***	-0.11***	-0.11***	-0.13***	-0.14***	-0.12***	-0.13***	-0.14***	-0.14***	-0.13***	-0.14***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
age	0.17*	0.14	0.16*	0.14	-0.02	-0.12	-0.02	-0.12	0.13	0.14	0.15	0.16
	(0.08)	(0.08)	(0.08)	(0.08)	(0.19)	(0.19)	(0.19)	(0.19)	(0.10)	(0.10)	(0.10)	(0.10)
sex	-9.31***	-9.08***	-9.36***	-9.17***	-4.38	-3.00	-4.76	-3.38	-6.28**	-6.35**	-6.75**	-6.78**
	(2.30)	(2.31)	(2.30)	(2.30)	(4.91)	(4.91)	(4.92)	(4.92)	(2.35)	(2.35)	(2.36)	(2.36)
yos	1.24*	1.26*	1.30**	1.32**	-0.20	-0.06	-0.10	0.00	0.47	0.41	0.53	0.47
	(0.49)	(0.49)	(0.49)	(0.49)	(0.68)	(0.69)	(0.69)	(0.70)	(0.45)	(0.45)	(0.45)	(0.45)
ln_weekinc	6.87***	7.27***	7.09***	7.48***	8.34**	9.55**	7.52*	8.89**	3.22	3.45	3.00	3.26
	(1.59)	(1.59)	(1.58)	(1.59)	(3.15)	(3.17)	(3.19)	(3.21)	(1.78)	(1.78)	(1.78)	(1.78)
tm_elder	-0.00	-0.00	-0.00	-0.00	-0.04	-0.03	-0.03	-0.03	0.04	0.04	0.03	0.03
	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)	(0.05)	(0.05)	(0.05)	(0.05)
tm_child	0.03**	0.03*	0.03**	0.03*	0.01	0.01	0.00	0.00	0.02*	0.02*	0.02*	0.02*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)
num_child	1.98	2.06	1.89	1.98	-1.17	-2.20	-1.17	-2.17	-2.94*	-3.16*	-2.63*	-2.86*
	(1.36)	(1.36)	(1.36)	(1.36)	(2.00)	(2.01)	(2.00)	(2.02)	(1.24)	(1.24)	(1.24)	(1.24)
metro	0.62	0.40	0.72	0.42	4.44	3.70	4.55	3.85	4.65	3.54	4.34	3.25
	(3.46)	(3.47)	(3.45)	(3.46)	(5.93)	(5.94)	(5.93)	(5.94)	(3.13)	(3.14)	(3.12)	(3.13)
Race	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES
Weekday	NO	NO	YES	YES	NO	NO	YES	YES	NO	NO	YES	YES
Observations	4125	4125	4125	4125	1225	1225	1225	1225	3905	3905	3905	3905
Adjusted R^2	0.093	0.094	0.100	0.101	0.110	0.116	0.113	0.118	0.147	0.151	0.153	0.156

Standard errors in parentheses

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