The Consistency of Japan’s Statistics on Working Hours, and an Analysis of Household Working Hours*

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Abstract  
This study examines the consistency of Japan’s statistics on working hours and investigates changes in and the structure of working hours since the late 1980s, from the perspective of household labor supply. The major findings are as follows.

First, as a result of comparisons among various sets of governmental statistics on working hours, we found that although there was consistency within household-side statistics and within employer-side statistics, there were some differences between the two sets of statistics, particularly with regard to male respondents. Second, analysis using micro data from the Labour Force Survey showed that between 1986 and 2013, there was no change in the average weekly working hours of either husbands or wives in married-couple households, but this was a significant change in the labor supply structure of wives. The employment rate of married women generally increased, and the number of households with a full-time homeworker declined, but an increase in the number of wives with short working hours curbed an increase in wives’ working hours. Third, regarding wives’ decisions to work, Douglas–Arisawa’s Law—which refers to a negative correlation between husbands’ income levels and wives’ employment rates—was found to be strongly evident. We also found that in child-rearing households, the tendency of number of husbands’ working hours having a constraining effect on wives’ labor supply had increased in recent years.

Men’s working arrangements have a great influence not only on their own individual-level work–life balance, but also on their households’ behavioral choices. Therefore, it is necessary to include in household surveys question items that shed light on household working arrangements, such as the main work-time periods and number of paid working hours.

Keywords: working hours, household working hours, children, Labour Force Survey  
JEL Classification: J22, D13

* Micro data used in this paper are data from the Labour Force Survey conducted by Statistics Bureau, Ministry of Internal Affairs and Communications (MIAC). We are grateful to the MIAC for providing the precious data. We would also like to thank Takashi Unayama for valuable comments. All remaining errors are our own.
I. Introduction

This study examines the consistency of Japan’s statistics on working hours; from there, it investigates the characteristics of the employment structure and trends in working hours at the household-unit level in Japan since the late 1980s.

Working hours are determined by economic exchanges between the firms that demand labor from workers and the workers who supply it. Basic economic theory that deals with labor supplies holds that, given perfect information, workers will choose working hours that maximize their own utility vis-à-vis the consumption of goods (realized through income) and leisure at a given wage rate. However, it has also been thought that working hours in equilibrium do not necessarily solve the maximization problem for workers.

In the 1980s, the number of working hours per worker in Japan was high, at 2,100 hours per year; this was high, even by international standards, and remedying long working hours has been an issue that government policy has sought to address. By virtue of the 1988 revisions to the Labour Standards Act, reductions in statutory working hours from 48 hours to 40 hours per week were implemented, and modifications in working-hour legislation have continued to be implemented until recently, including augmentations to overtime premiums. During this period, working hours per worker in Japan consistently trended downward, reaching approximately 1,700+ hours in 2013, according to the Ministry of Health, Labour and Welfare’s Monthly Labour Survey, which captures Japan’s fundamental statistics on employment, earnings, and working hours among enterprises.

According to recent empirical studies, much of the observed reduction in average working hours stemmed from an increase in the number of part-time workers (Kambayashi 2010); the average number of working hours among full-time employees has not changed much over the last 25 years (Kuroda 2010). Research has shown that the effects of legislative modifications that aim to shorten statutory working hours have been minimal (Kawaguchi, Naito and Yokoyama 2008). Furthermore, there was an increase in the ratio of employees working 60 hours or more per week from the late 1990s through to the start of the 21st century—a recessionary period that followed the burst of the economic bubble (Genda 2005). Additionally, research shows that the increase in average working hours particularly affected men in their prime (Genda, Kuroda and Ohta 2010).

There has been a rapid increase in this type of empirical research regarding Japanese workers’ styles of working, the mechanisms behind working long hours and its impact on the health of workers (Ogura 2007, Yamamoto and Kuroda 2014); understanding conditions in Japan’s labor market has also become more important. Moreover, with the increase in the number of part-time workers, the role of micro-level data—which gives us a better understanding of working hours among individual workers—is considerable in circumstances where long working hours prevail among regular full-time employees. Furthermore, the reliability of labor statistics at the micro level is essential, if the results of empirical research are to be trustworthy.
This study not only examines the validity of government statistics on working hours at the individual level, but also analyzes data vis-à-vis working hours at the household level. Many workers generally have families, and thus labor supply behavior is generally not independent of the behaviors of others in their households. Moreover, much leisure time is spent in various production activities within the household, such as child-rearing, preparing meals, doing laundry, and cleaning, inter alia. In other words, the household is a unit that allocates decision-making between the time and goods of each household member; the allocation of working hours for each household member, as well as his or her consumption level, is determined as a result of activities that maximize the utility of the household (unitary model), or through maximization that reflects the bargaining power of each household member (collective model) (Blundell and MaCurdy 1999). Hence, considerations regarding the decision-making of a household as a unit and internal allocation issues—as well as those that touch upon income, savings, and consumption, among others—are essential to discussions concerning working hours.

This problem of choosing working hours in households has received widespread attention among researchers. One traditional issue regarding households’ labor supplies is the existence of and changes to the Douglas–Arisawa’s (First) Law—namely, that there is a higher labor force participation rate among wives (noncore household members) in households where the head (husband) of the household has a lower income (core income) (Kawaguchi 2002). The results of many empirical studies based on the Japanese Panel Survey of Consumers (JPSC), conducted by the Institute for Research on Household Economics, suggest that the wife’s employment choice does not necessarily reflect the husband’s income (Takeuchi 2004)—and, furthermore, that the negative correlation between the husband’s income and the wife’s labor force participation weakened during the 1990s (Kohara 2001).

Furthermore, the reality that many households faced in the recession following the late 1990s was a reduction in the employment and incomes of husbands, and any analysis of such recessionary periods must involve the verification of household-based labor supply. Using micro data from the JPSC from the 1993–2004 period, Kohara (2010) found that the added worker effect was present, i.e., wives react to their husbands’ involuntary job loss so as to compensate for his loss of income.

Household-level data are also useful for examining the effects of the allocation of working hours within households on the allocation of other activities, particularly housework and child-rearing. Using micro data from the JPSC, Kohara (2000) examined the effect that the husband’s commuting time has on husband–wife time allocation. The results showed that husbands do not change their amount of housework time, regardless of the length of their commuting times; however, it was found that there are fewer working hours for wives in households whose husbands have longer commuting times. Using data from the Japan Society of Family Sociology’s Nationwide Family Research of Japan, Mizuochi (2006) demonstrates that increased working hours among fathers reduce their participation in child-rear-

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1 Omori (2010) surveys the empirical literature in Japan from the perspective of the household production model.
Yoshida (2009) conducted more widespread analysis regarding the time allocation of household and child-rearing duties between husbands and wives, based on the collective model that takes into account the bargaining power of husbands and wives in household decision-making. The results of empirical analysis using micro data from the *International Comparative Survey on Marriage and the Family*, conducted by the Committee for Japanese Generations and Gender Survey, showed that both the wage rates of husbands and wives and their working hours are factors in their relative housework frequency. The results suggest that in Japan, rather than the hours spent by both husbands and wives on housework and child-rearing hours being simultaneously determined by working hours, husbands’ working hours have become time constraints for households.

While there has been an accumulation of this type of empirical analysis of the labor supply at the household-unit level, data used in these analyses are either cross-sectional data from a single year or panel data comprising small samples. In this study, we attempt to evaluate the generality of the findings of previous research by examining long-term trends in the Japanese household labor supply, using micro data from government statistical datasets that feature larger sample sizes.

In Section II, we broach the subject of government statistics on working hours and examine differences in the definitions of working hours and survey methods. In Section III, we use the Labour Force Survey (LFS), conducted by the Japanese Ministry of Internal Affairs and Communications, to outline the structure and trends of working hours at the household-unit level. In Section IV, we examine the household demographics of the labor supply of husbands and wives. In Section V, we summarize our findings and discuss future research possibilities.

II. Differences in Working Hours in Statistics

II-1. Overview of Working Hour Statistics

When seeking to understand working hours, attention needs first to be paid to the population in the survey data used. Furthermore, in tables published for the general public, the focus is often placed on aggregate working hours by worker type. Therefore, attention needs to be paid to presentations of aggregated data in statistical surveys. Based on these, we can see differences in the definition of “working hours” among various surveys.

Official statistics regarding working hours in Japan are broadly categorized into two types: those from establishment surveys, of enterprises that employ employees, and those from household surveys, which query households about the state of employment in each household. The populations within these two survey types differ. Establishment surveys include the *Monthly Labour Survey* (MLS) and the *Basic Survey on Wage Structure* (BSWS), both of which are conducted by the Ministry of Health, Labour and Welfare. On the other hand, representative household surveys include the LFS, the *Survey on Time Use and Lei-
sure Activities (STULA), and the Employment Status Survey (ESS), all of which are conducted by the Ministry of Internal Affairs and Communication. Table 1 provides an overview of these five statistical surveys of working hours. Hereafter, we examine the details and features of each survey, as well as the differences among them.

II-1-1. Differences in Population: Enterprises and Households

Establishment surveys on working hours use, as the sample frame, data captured through the Economic Census (the former Establishment and Enterprise Census) conducted by the Ministry of Internal Affairs and Communication. The industries surveyed exclude agriculture, forestry, and fisheries businesses and government offices; sampling is conducted by region (survey districts, prefectures) and by the number of employees at the establishments. Furthermore, the BSWS treats establishments as the primary sampling unit and employees as the secondary sampling unit. Employees are selected through a uniform sampling method.

Table 1
Comparisons among various sets of governmental statistics on working hours

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>Monthly</td>
<td>Every year (June)</td>
<td>Monthly</td>
<td>Every 5 years (October)</td>
<td>Every 5 years (October)</td>
</tr>
<tr>
<td>Subjects of the survey</td>
<td>Establishments excluding agriculture, forestry, and fisheries businesses and government offices, Establishments with 5 or more employees</td>
<td>Establishments excluding agriculture, forestry, and fisheries businesses and government offices, Enterprises with 10 or more employees</td>
<td>Households</td>
<td>Households</td>
<td>Households</td>
</tr>
<tr>
<td>Sample Size</td>
<td>About 33 thousand establishments</td>
<td>About 80 thousand establishments/ about 1.6 million persons</td>
<td>About 40 thousand households/ about 110 thousand persons</td>
<td>About 80 thousand households/ about 200 thousand persons</td>
<td>About 500 thousand households/ about 1.1 million persons</td>
</tr>
<tr>
<td>Aggregate targets and results of working hours</td>
<td>Regular employees: full-time or part-time employee</td>
<td>Regular employees: ordinary or part-time worker, temporary employee</td>
<td>Employed persons by employment status, Employees: ordinary, temporary or daily employee, by type of employment (2013 t)</td>
<td>Gainful workers by employment status, Employees by type of employment</td>
<td>Gainful workers by employment status, Employees by type of employment</td>
</tr>
<tr>
<td>Reference period / Working hours</td>
<td>Actual number of scheduled working hours per month/ Actual number of overtime working hours per month/ Actual total working hours per month</td>
<td>Actual number of scheduled hours worked per month/ Actual number of overtime hours worked per month</td>
<td>Actual working hours during one week ending on the last day of each month (For December: from 20th to 26th)</td>
<td>Actual number of total working hours per week calculated by working hours per day, Usual working hours per week (class value)</td>
<td>Usual working hours per week (class value; only for regular employed persons working 200 days and over and those working less than 200 days)</td>
</tr>
</tbody>
</table>

Note: The sample size of the the latest surveys are displayed.
from among the establishments selected for the survey. As for the MLS, the size of the establishment in terms of the number of eligible employees has since 1990 been set at offices with five or more employees (offices with one to four employees are covered annually in the MLS—Special Survey). The BSWS has also surveyed offices with five or more employees (or, for publicly managed offices, 10 or more employees) since 1982.

On the other hand, the population in household surveys includes all households residing in Japan, and the number of enumeration districts is selected according to the sample size of each survey based on the Population Census, thus targeting household members residing in the sampled households. However, employment status is derived only for those household members who are 15 years of age or older. Because household surveys target all households in Japan, from the perspective of population, they are not limited by employment status or type of employer, and include all employed persons 15 years and older. Establishment surveys are limited to establishments not affiliated with the agriculture, forestry, and fisheries sectors or the public sector, and to employees and executives employed by establishments with five or more employees.

II-1-2. Differences in Aggregate Targets: The Definition of a “Worker”

The aforementioned differences in population also result in differences in the aggregate target of “working hours.” Establishment surveys ultimately target workers who have a direct and current employment relationship with the selected establishment; hence, the working hours collected are for “regular employees” who are regularly employed at the selected establishments. To distinguish them from “temporary employees” who work only for short periods of time, “regular employees” are defined here as either 1) workers with an unlimited contract term or a contract term that exceeds one month, or 2) workers whose contract terms are day-to-day or less than one month and who have worked 18 or more days within the two months prior to the survey.

Establishment surveys mainly consist of aggregates classified by the working hours of regular employees. Both the MLS and the BSWS focus on scheduled working hours and scheduled work days, determined by work rules or collective agreements; they subsequently publish aggregated results categorized by “full-time employees” and “part-time employees,” whose scheduled working hours in a day and scheduled work days are fewer than those of full-time employees. However, to understand the diversification of recent employment patterns, since 2005 the BSWS has added aggregates categorized by employment statuses such as “full-time permanent employees” and “other than full-time permanent employees.”

In contrast, household surveys that target individuals require definitions of whether or not the respondent has employment—or, in other words, their labor force status. The ways of defining the labor force status in household surveys consist of the “usual method” for understanding the typical situation, and the “actual method” for understanding the actual situation during a given period. The STULA and the ESS each use the former method to define a “gainful worker” as someone who is usually gainfully employed; the LFS uses the latter method, in accordance with international standards stipulated by the International Labour
Organization, to define an “employed person” as someone who is gainfully employed in the last full week of each month except December, for which the reference period is one week from the 20th to 26th. Household surveys elucidate “working hours” regarding jobs performed by both “gainful workers” and “employed persons.”

As noted, surveys of working hours that target households broadly sample both “gainful workers” and “employed persons,” while establishment surveys that target establishments mainly sample only the “regular employees” from the pool of workers who have a direct employment relationship with the establishment. When comparing working hours, particular attention must be paid to the presentation of aggregate data categorized by the type of employed person; it becomes important to define what the aggregates represent. Common among the three types of household surveys are categorizations by employment status that include the “self-employed,” “family workers,” “homeworkers,” “executives of company or corporation,” and “ordinary employees.” Furthermore, there are distinctions between the LFS and ESS in terms of their aggregates of employees, in terms of the employment contract term. Moreover, the STULA and the ESS have traditionally categorized employment status according to how employers are called in their workplace (i.e., permanent versus non-permanent employees). Aggregates with similar classifications have been included in the monthly LFS, following modifications made to the survey items as of the January 2013 survey.

II-1-3. Differences in Methods of Interpreting Working Hours

Differences in survey subjects and aggregate targets create considerable differences between establishment surveys and household surveys in terms of their methods of identifying working hours. There are two aspects of importance—namely, the measurement period for working hours and the definition of “working hours” itself.

There are differences in these surveys’ definitions of “working hours.” Establishment surveys collect the working hours of workers that employers observe and manage, in accordance with working-hours legislation; meanwhile, household surveys regard all hours that individuals spend working as their “working hours,” regardless of employer. With regard to the measurement units for working hours, establishment surveys ask questions about total working hours within one month, while household surveys capture weekly working hours.

Here, we provide an overview of the timeline of legislation on working hours (Table 2). Working hours stipulated by the Labour Standards Act, first enacted in 1947, were shortened incrementally. Moreover, flexible working arrangements—such as the Variable Working Hour System and Discretionary Working System, lifting the ban on nighttime work by women, and laws concerning maternal protection for pregnancy and delivery—were intro-

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2 The categorizations by employment status are “regular” for those with an employment contract period in excess of one year or that is not specified, and “temporary and daily” for those whose employment contract period is one year or shorter. However, the LFS items changed with the January 2013 survey, whereupon categorizations of “regular (unlimited contract period)” and “regular with fixed-term contract” were newly established.

3 Categorizations of employment status are “regular full-time employee,” “part-time,” “Arbeit (temporary part-time),” “dispatched worker from temporary labor agency,” “contract employee,” “entrusted employee,” and “other.”
duced, and they served to modify the environments pertaining to working hours.

With regard to the current working hours of workers under contract with their employers, Article 32 of the Labour Standards Act sets upper limits of 40 hours per week and 8 hours per day as mandated working hours; the five-day work week has now become standard. Based on Articles 33 and 36 of the law, employers are responsible for paying premium wages for overtime work (Article 37).

The definition of “working hours” in establishment surveys such as the MLS and the BSWS corresponds directly to working-hours legislation. In establishment surveys, the working hours for employees under the supervision of employers are divided into “scheduled working hours,” which means the number of hours for which an employee actually worked from a starting time to an ending time in a work day, scheduled as per the work

<table>
<thead>
<tr>
<th>Year</th>
<th>Statutory working hours per week</th>
<th>Remarks</th>
</tr>
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<tbody>
<tr>
<td>1947</td>
<td>48 hours a week system</td>
<td>Four-Week Variable Working Hour System</td>
</tr>
<tr>
<td>1988</td>
<td>46 hours a week system (A target is 40 hours a week. Postponement measures: 48 hours a week system)</td>
<td>Adoption of Flexible Working Hour System &amp; Discretionary Working System</td>
</tr>
<tr>
<td>1991</td>
<td>44 hours a week system</td>
<td></td>
</tr>
<tr>
<td>1994</td>
<td>40 hours a week system</td>
<td>One-Year Variable Working Hour System</td>
</tr>
<tr>
<td>1997</td>
<td>40 hours a week system full implementation (Special measure: 46 hours a week system)</td>
<td>Elimination of Female Protection Stipulation: Lifting the ban on overtime work, holiday work and nightwork by women.</td>
</tr>
</tbody>
</table>

Source: MHLW(HP)

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4 By virtue of the 1997 “Elimination of Female Protection Stipulation” revision to the Labour Standards Act, regulations pertaining to the prohibition of women working overtime, holidays, and at night were abolished in principle, and thereafter men and women were able to work at night under the same conditions.

5 There are employment regulations and protections that pertain to working-hour regulations and dangerous work duties regarding the employment and health management of pregnant mothers before and after delivery. For instance, mothers may request conversion to light work duties before delivery, as well as guaranteed time for obstetric checkups and requests for childcare after delivery; measures such as the shortening of work times by companies have also been stipulated. Although guaranteed time for obstetric checkups before delivery and childcare after delivery are limited to women, men can also take advantage of restrictions on overtime and nighttime work and the shortening of office hours.

6 While the five-day work week is not clearly specified in the Labour Standard Law, “working hours of 40 or fewer hours per week, and 8 or fewer hours per day” is stipulated, and with working hours specified at 8 hours per day and the number of work days set to five or fewer, the effective result is a five-day work week. Since the 1980s, many companies have adopted a five-day work week in Japan, and in May 1992, a five-day work week was formally implemented for employees of the national government.
rules of his or her establishment, and “overtime working hours.” On one hand, the MLS asks questions about the total working hours for all regular employees in the month of the survey for the selected enterprise; on the other hand, the BSWS asks about working hours per individual regular employee for the month of June, which is the survey period. However, according to BSWS instructions, those individuals on leave are to be omitted; careful attention must therefore be paid to the differences between working hours in the BSWS and those in the MLS, including those on leave for childcare or to nurse a relative.

On the other hand, household surveys do not necessarily aim to measure working hours that occur in one place of employment. The LFS and the STULA aim to ascertain all hours spent on gainful employment that generates income for the respondent; to that end, they ask about “working hours” from second jobs, housework, or temporary work. Furthermore, while the LFS and the STULA each report average weekly working hours, their survey formats differ.

As mentioned, the LFS utilizes the “actual method” and asks about the total number of working hours in the last week of the month. On the other hand, the STULA (also referred to as the “time-use survey”) records the allocation of hours spent by the respondent in 15-minute intervals within a 24-hour timespan, by type of activity (i.e., work, academic pursuits, and housework). To aggregate results by day of the week, the sample survey areas are randomly divided into eight groups, with two consecutive days between October 15 and October 23 selected as the survey dates for each group. The sum of working hours obtained for each weekday tallied by weekly units is aggregated as the working hours for the entire week.

Therefore, there are differences in the time periods surveyed by these two surveys, with the LFS mainly recording working hours remembered and the STULA recording hours spent on daily activities. Finally, only the ESS focuses on the usual working hours of the respondent’s main job. Note, however, that working hours per week in the survey are limited to employed workers, from among those employed persons working 200 or more days and those “regularly” working fewer than 200 days per year.

The preceding information indicates that some fundamental differences exist between establishment surveys and household surveys, in terms of collecting statistics on working hours. The major difference is that while establishment surveys capture working hours per month as observed by the company, household surveys ask individuals about the number of working hours per week for the worker. Furthermore, while the respondents of establishment surveys are regular employees (i.e., these surveys exclude temporary workers), the workers sampled in household surveys cover a wide range and are not limited to employed persons.

The next section examines the degree of consistency vis-à-vis working-hours data as
II-2. Working Hour Trends in Household and Establishment Surveys

In this section, we use the LFS and STULA as household surveys and the MLS and the BSWS as establishment surveys. Along with reconciling the definitions of “working hours” and the respondents of the surveys to the greatest extent possible, we also examine the consistency of the working hours within and between the two sets of surveys. Going forward, the term “working hours,” when used in reference to the household surveys, is identical to that used in reference to establishment surveys.

First, we compare trends in the household survey statistics of working hours, between the LFS and the STULA. The STULA is conducted once every five years in October and presents averages for gainful workers. The LFS shows a basic aggregate of all employed persons surveyed in October (Figure 1). While the average working hours per week in both surveys showed decreasing trends, the results of the most recent surveys still show individuals working in excess of 40 hours per week. Because the household survey addresses a wide variety of workers, as the ratio of part-time employed workers increases, the average number of working hours decreases for all workers. It is clear that over a 30-year period, both sets of statistics have shown reductions of 5–6 hours per week—or, in other words, a little

Figure 1
Trends in the household survey statistics of working hours: Both male and female

Note: 1 For the STULA, average working hours per day for ‘gainful worker’ are converted into working hours per week.
Note 2: For the LFS, average weekly working hours for employees in all industries are displayed, but those in agriculture and forestry businesses are excluded before 1984.
Source: The Survey on Time Use and Leisure Activities (STULA) and the Labour Force Survey -Basic Tabulation (LFS) by the Ministry of Internal Affairs and Communications (MIAC).
less than 1 hour per day. Moreover, the difference between the statistics gathered through the two surveys was a maximum of just over 1 hour per week, and while there is some divergence, the difference was minimal (i.e., between 10 and 20 minutes per day).

Next, we examine the establishment survey statistics of working-hour trends for regular employees in the BSWS and the MLS. The BSWS is conducted annually in June. Figure 2 compares the results of the BSWS and the MLS, the latter of which is also conducted in June. Here, monthly working-hour data from both surveys are converted into working hours per week and, for the BSWS, weighted averages are calculated by using the numbers of both full-time and part-time employees. Similar to household surveys, working hours in the two establishment surveys also showed declining trends over the long term, of about 6–8 hours per week or approximately 1 hour per day. In 2013, the number of working hours had fallen to approximately 36 hours per week. While the divergence between the two statistics was a maximum of 2 hours, the difference was decreasing. The latest results show a difference of less than 1 hour, which is a minimal amount of time per day.

As prior evidence suggests, it appears that there is some statistical consistency among the household surveys and among the establishment surveys, with any statistical differences

**Figure 2**

Trends in the establishment survey statistics of working hours: Both male and female and weighted average of ordinary and part-time workers

![Graph showing trends in working hours](image-url)

**Note 1:** For the BSWS, aggregation targets are employees at enterprises with 10 or more employees. Working hours for ordinary and part-time workers per month are converted into those per week and then the weighted average of weekly working hours is calculated by using the numbers of both ordinary and part-time workers. Before 1987, the working hours of both sexes could not be calculated due to the lack of statistics for male part-time workers.

**Note 2:** For the MLS, aggregation targets are ordinary and part-time workers who employed at establishments with 30 or more employees. Actual total working hours per month are converted into those per week.

**Source:** The *Basic Survey on Wage Structure* (BSWS) and the *Monthly Labor Survey* (MLS) by the Ministry of Health, Labour and Welfare (MHLW).
amounting to a minimal amount of time per day.

Next, we attempt a comparison between household surveys and establishment surveys. When comparing the MLS (as a representative of establishment surveys) and the LFS (as a representative of household surveys), the difference between their statistical data is an average of approximately 6 hours per week (Figure 3). Even though the statistical representations for average working hours show declining trends, it is clear that there is a divergence between the two sets of statistics of 6 hours per average week—or, in other words, more than 1 hour per day.

We next compare trends in weekly working hours by gender, between household and establishment surveys (Figure 4). The number of working hours shows a decreasing trend for both men and women. According to the LFS data, the decrease in weekly working hours for women has been greater than that for men, as weekly working hours in 2013 were 45 hours for men and 34 hours for women; these numbers represent decreases of approximately 7 hours (from nearly 52 hours per week) for men and 8 hours (from 42 hours) for women since the 1988 revisions to the Labour Standards Act. The BSWS data show similar reductions.

A comparison of the values shows that there is a divergence between the household and establishment surveys of an average of 5.5 hours per week for men (similar to the most recently surveyed year of 2013), with the LFS data showing the higher value. While the divergence between household survey and establishment survey data has been minimal for women, it has steadily grown wider in recent years. Furthermore, in the BSWS data, there is no aggregate data category for overtime working hours for part-time employees, and because women comprise a large percentage of part-time employees, this divergence between house-

Figure 3
Comparison of working hours in household and establishment surveys:
Both male and female

![Graph showing comparison of working hours in household and establishment surveys]

Note: See Figure 1 and Figure 2.
Source: LFS-Basic Tabulation (MIAC) and MLS (MHLW)
hold surveys and establishment surveys is not as large as the one for men.

Many previous studies have examined the causes of this type of divergence between establishment and household surveys. The first cause is the difference between the survey types in terms of the respondents and the time periods involved. As mentioned, the industries sampled, the establishment scale, and the types of workers differ between household and establishment surveys. On this point, Genda (1993) contends that when using aggregate data from the BSWS and the LFS from the 1980s to reconcile the respondents to the greatest extent possible, the number of working hours for men in the household surveys is still 13.7 hours higher per month than that in the establishment surveys; the statistical divergence for women is smaller. Furthermore, Kambayashi (2010) points out the importance of carefully considering the number of work days per month when making comparisons that involve unifying the units in these sets of statistics, as household surveys rely on weekly units for working hours, while establishment surveys rely on monthly units.

On this point, due to that fact that designations of employment types were added to the BSWS (establishment survey) beginning in 2005, and work days per month and employment types were added as survey items to the LFS (household survey) beginning in January 2013, direct comparisons between these almost-identical survey respondents for monthly working hours is now possible, at least for recent time periods. For example, the average number of working hours per month for “regular full-time employees” for all establishment sizes and all industries in the June 2013 LFS was 195.7 hours for men and 174.5 hours for women. On the other hand, according to the June 2013 BSWS, the total actual number of
working hours per month for “regular staff/regular employees” in establishments with 10 or more employees in secondary or tertiary sectors was 180.0 for men and 170.0 for women. Therefore, the difference in working hours per month was 15.7 hours for men and 4.5 hours for women, or approximately 3.7 hours and 1 hour per week, respectively. Similar to the findings of Genda (1993), the divergence was minimal for women, while the household survey data showed longer working hours for men, even after controlling for the attributes of survey respondents to the greatest extent possible.

Second, there is the problem of different definitions of “working hours.” As indicated, the LFS and the STULA, as household surveys, do not necessarily seek to measure working hours for one place of employment; their working-hours data include second jobs, housework, and temporary jobs. However, the divergence caused by this factor seems to be relatively small. According to data captured through the ESS—which contains questionnaire items about side jobs—the ratio of double-jobbers was trending lower, at less than 5% since 1980 (Japan Institute for Labor Policy and Training 2005; Cabinet Office 2011). Furthermore, while researchers have expressed doubts concerning the LFS’s particular use of the “last week in the month” as a definition for working hours (Genda 1993), given that the difference is minimal compared to working hours determined in the STULA in the same surveyed month but in a different surveyed week, the divergence caused by this factor is considered minimal.

Third, there are differences among the surveys’ methods: household surveys collect working-hours data from workers, whereas establishment surveys collect these data from employers. In the LFS household survey, workers are asked about their working hours for the entire week, while leaving open the possibility of measurement errors caused by memory and perception vagaries on the part of workers. However, due to the fact that there are no obvious differences in working hours between the LFS and the STULA—the latter of which uses the time diary method to record allocations of time spent on daily activities in 15-minute intervals—differences due to memory and perception vis-à-vis working hours in the household survey are minimal, on average (Yamamoto and Kuroda 2014).

The last cause is a difference between working hours recorded by firms versus those by individuals. Working hours recorded by firms and reported in establishment surveys are working hours for which a salary has been paid, including pay for overtime work. Therefore, any divergence in working hours under the same conditions between establishment surveys and household surveys has been interpreted as the number of nonpaid overtime hours and holiday work that were recorded only by workers (Genda 1993, Ogura and Fujimoto 2005, Takahashi 2005). However, Figure 3 indicates that the divergence between these sets of surveys is approximately 6 hours per week, and there were no significant changes in the periods after 1980. Furthermore, according to the aforementioned comparison of results of the LFS and the BSWS—the respondents to which were limited to full-time employees, who have the longest working hours among the different types of employment—the divergence between them was fewer than 16 hours per month for men, or fewer than 4 hours per week. This suggests that while divergence in these statistics may include “unpaid overtime,”
the level may be smaller than simple comparisons suggest.

As suggested, while the levels of working hours are consistent within each set of household surveys or establishment surveys, there is a certain degree of divergence between the two sets of surveys. Nonetheless, the results of each of the statistical surveys suggest that working hours among individual workers are decreasing over the long term. This fact again shows that while each set of working-hour statistics is useful in understanding changes and long-term trends in working hours (Yamamoto and Kuroda 2014), it is important to use appropriate statistical survey data that match one’s analytical purpose, while bearing in mind the surveys’ definitions of “working hours” and the characteristics thereof.

III. Household Working-Hour Structures and Trends

III-1. Household and Individual Labor Supplies

A long-term declining trend in individual working hours has been confirmed, regardless of the survey data source (i.e., establishment versus household surveys). However, according to previous research, the number of working hours among full-time employees has not significantly changed in the last quarter-century, and it has become clear that an increase in part-time employees has pushed down overall averages. Furthermore, the problem in Japan of long working hours (i.e., more than 60 hours per week among full-time employees) since the collapse of the bubble economy has been acknowledged. What kinds of changes have occurred over the last quarter-century, when observing the labor supply of the individual unit from the perspective of time allocation within households? In this section, we analyze husband–wife working hours from the perspective of the labor supply of households.

One perspective on the household labor supply pertains to whether it is a dual income household or a household with a full-time homeworker—in other words, the wife’s work choices (extensive margin). Do the working hours of husbands differ according to the wives’ employment status? Do husbands’ long working hours preclude wives in households with the status of full-time homeworker from taking paid work? A wife’s decision to take paid work most definitely impacts the household labor supply, as well as the sharing of household duties and child-rearing time between husbands and wives. While the labor supply in terms of whether or not to work or how many hours to work should be a decision that takes into account household production, in reality, the number of desired working hours is not something that can be chosen. For instance, a woman who has married, had children and retired may not be able to easily find reemployment as a full-time worker. Some countries accommodate the selection of working hours and the number of days worked in line with individual and household circumstances; in the Netherlands, for example, couples work to gain the income equivalent of 1.5 workers. Using individual-level data, we analyze the actual state in Japan of household labor supply, which is believed to impact work–life balance. Using micro data captured through the Ministry of Internal Affairs and Communication’s LFS (a household survey) for 1986–2013, we aggregate working hours for husbands and wives.
and examine distributions and changes over time. The data are in series and published as a “Detailed Tabulation,” which until 2001 was conducted in approximately 40,000 households each February and August as the “Special Survey of the Labour Force Survey.” Since January 2002, it has been conducted monthly as the LFS (Detailed Tabulation), and results were published quarterly; it surveys approximately 10,000 households, or one-quarter of the sample of the “Basic Tabulation.” Since longitudinal data could be obtained only for the February survey (in spite of using different survey methods), we use only the data from that survey. The total sample for the analysis period comprises 818,952 men and 886,122 women.

III-2. Single-Person Household Trends—An Increase in the Ratio of Single-Person Households

To provide an overview of the data, we first used the full dataset to examine the ratio of the number of single-person households (Figure 5). The ratio was 9.9% in 1986, and it increased to 14.2% in 2013; this represents a 5-percentage-point increase over 28 years. The ratio of single-person households among those younger than 65 years showed no significant increase, but that for individuals 65 years or older increased by almost 9 percentage points, from 14% to 22.9%. This indicates an increase in the number of elderly persons living alone, which is associated with population aging. With regards to gender, the ratio of single-person households of women aged 65 or older increased to 28.4% in 2013, an approximately 10-percentage-point increase since 1986. Women have, on average, a longer life expectancy than men, and so there is the strong possibility that a woman will eventually be

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*While for women there was no great change in the ratio of single-person households where the head was younger than 65 years (remaining constant at about 8%), the increase for men was from about 10% to 15%.*
part of a single-person household as she ages.

Next, we examine weekly working hours for working persons by comparing single-person households to ordinary households that contain two or more people. In 1986, the total number of working hours for both men and women in single-person households and ordinary households was approximately 45 hours per week. In subsequent years, the number of working hours per week decreased for both household types, falling by 2013 to 41.2 hours for single-person households and 39.7 hours for ordinary households—a difference of 1.5 hours between them. By gender, the long-term decreasing trend is shared by both men and women (Figure 6). For men, there is almost no difference observed in average working hours between single-person and ordinary households, as weekly working hours for both household types decreased from approximately 47 to 43 hours per week. On the other hand, the number of working hours for women in ordinary households was lower than that in single-person households throughout all periods, with an average difference of approximately 3.5 hours between 1986 and 2013.

Let us examine background information while bearing in mind the ratios of regular full-time employees to all employed persons (Figure 7).9 The ratio of regular full-time employees was higher among single-person households than among ordinary households, for both men and women. While the ratio of regular full-time employees was consistently at approximately 65% among men from ordinary households, the ratio for men among single-person households fell approximately 15 percentage points, from 81.2% in 1986 to 66.6% in

![Figure 6](image_url)

**Working hours in single-person and ordinary households: By gender**

Note: Working hours per week in 1989 was shorter than those around the year since there was the public holiday on 24 February 1989 for the demise of Showa Emperor during the survey period in the LFS.

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9 In this case, employed persons were categorized by “regular full-time employee,” “part-time,” “Arbeit (temporary part-time),” “dispatched worker from temporary labor agency,” “contract employee,” “entrusted employee” and “Other.”
2013—to the point where it has recently reached about the same ratio as that seen among ordinary households. For women, the ratios of regular full-time employees among both single-person and ordinary households decreased between 1986 and 2013. While the percentage of woman-headed single-person households decreased by approximately 17 percentage points (from 61.6% in 1986), the percentage of woman-headed ordinary households also decreased, by approximately 5 percentage points (from 43.3%). These trends do not change, even when we limit the sample to individuals younger than 65 years. While the ratio of regular full-time employees decreased, that of non-regular employees—such as part-time and temporary part-time workers—increased. The ratio of self-employed employees also decreased: while 20% of all workers in 1986 identified as self-employed, this figure fell in 2013 to less than 10% for both men and women in ordinary households. For women, the ratio of contract employees also increased, along with part-time and temporary part-time workers; meanwhile, in 2013, it accounted for approximately one-half of the ordinary households and approximately 40% of the single-person households. The data suggest that continued employment or reemployment as a regular full-time employee is difficult for women, while regular full-time employment is decreasing for both men and women from single-person households. Hence, we can confirm that the number of working hours has been decreasing for all workers, as the ratio of regular full-time employees has been decreasing—or, in other words, there is an increase in the ratio of part-time workers.

Figure 7
The Ratio of regular full-time employees in single-person and ordinary households:
By gender

![Graph showing the ratio of regular full-time employees by gender and household type between 1986 and 2013.](attachment:image.png)
III-3. Trends in Employment Arrangements among Married Couples

Do the working hours of married couples and of either husbands or wives differ in line with differences in household attributes, such as the employment status of married couples or the presence of children? Moreover, how have ways of working changed in Japan over the 28-year period of 1986–2013? In the following analysis of working hours per household unit, we restrict our sample to married-couple households. Specifically, samples are from married-couple households where the husband is the household head. While there certainly are households where the household head is wife, these account for a mere 0.3% of all married-couple households. The sample size we use comprises 468,190 households where the husband is identified as the household head.

As mentioned, there are already many more dual income households in Japan than households with full-time housewives; this is confirmed by our data. An examination of ordinary households where the husband is the household head and also under 65 years of age shows that the ratio of dual income households has increased by approximately 10 percentage points in 28 years, reaching 59.1% as of 2013 (Figure 8). On the other hand, the ratio of households with a full-time housewife decreased by approximately 10 percentage points, falling to 34.1% by 2013. The data show that as of 1986, the ratio of dual income house-

Figure 8
Employment arrangements among couples

Note: The sample used here consists of married-couple households where the husband is the household head and younger than 65 years old (including the unemployed).

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10 For descriptive statistics, please refer to Appendix Table A1.

11 Because there are also trends observed in employment arrangements—not only for dual-income households and households with full-time homeworkers, but also for households where both the husband and wife are unemployed, and households with stay-at-home fathers—households where the household head is an unemployed husband are also included in the base.
holds had already exceeded that of households with full-time housewives. Because the sample includes all workers who are not regular employees (self-employed individuals, etc.), the ratio of dual income households is higher than that suggested by data only from regular employees. Incidentally, the ratio of households with stay-at-home fathers where the wife works outside the home averages approximately 3%, while the ratio of households where both the husband and wife are non-employed averages approximately 4.5%. These ratios are relatively stable and lack any significant variation.

Furthermore, when including households with a household head aged 65 years or older, the ratio of households where both the husband and wife are non-employed increases dramatically: this ratio was 11% in 1986, and by 2013 it increased to 24.5%. This change indicates an increase in households comprising non-employed elderly couples whose household head has retired from work; this is a demographic shift that stems from general population aging.

The increase in the ratio of dual income households remains unaffected by the presence of small children. An examination of the wife’s labor force status by age of the youngest child for households where the husband is the household head, employed, and under 65 years of age shows that in 1986, the ratio of working wives in households where the youngest child was zero to three years old was slightly less than 30%; in 2013, however, the ratio increased to 47%. The ratio of households with working wives where the household’s youngest child was four to six years old also increased by over 10 percentage points, from approximately 44% in 1986 to more than one-half in 2013. Individuals who were taking a leave of absence from work were also included among employed persons. Of the pool of regular employees who were wives and had a youngest child aged zero to three years, the percentage of those who took a leave of absence from work doubled over the 28-year study period, approaching approximately 20% in recent years. The most prevalent reason for the leave of absence was maternity leave or childcare, and there was an increase in the proportion of wives who were regular employees with no working hours and who were taking childcare leave. Since the 1990s, efforts by government and firms have resulted in enhancements to childcare leave policy, resulting in an increased ratio in 2013 of women taking leave (83%) (as per the Ministry of Health, Labour and Welfare’s “Basic Survey of Gender Equality in Employment Management”); these data suggest the continuation of employment among women, even with a youngest child aged zero to three years.


Figure 9 shows that the ratio of households with a full-time housewife was higher among younger age groups, where the household head was in his 20s or 30s; this ratio bottoms out for groups where the household head was in his late 40s to early 50s. In contrast,
there were fewer dual income households among younger age groups, with peak values occurring among those in their late 40s. When we examine the data by time period, the ratio of households with a full-time homeworker in the 45–49 age group did not change much from period [1] to period [5]. However, the ratios of both households with a head in his 20s or 30s and households with a head in his 50s, and which have a full-time homeworker, decreased, while the ratio of dual income households increased. While many households among those whose household head was in his 20s or 30s had a full-time homeworker, the ratio of two-income households has increased in recent years, and a reversal was seen for households whose head was in his 30s. The decline in the ratios of full-time homeworkers is more significant among younger generations: from period [1] to period [5], the decline was about 13 percentage points for those aged 25–29, approximately 16 percentage points for those aged 30–34, and approximately 8 percentage points for those aged 35–39.

In contrast, 63% of households in which the head was in his 40s (averaged throughout all periods) were dual income households; of all households in this age group, approximately 35% had full-time homeworkers. Neither of these ratios changed significantly throughout the 28-year period. The results indicate that the structure consisting of wives reentering the workforce after completing the first stage of child-rearing had not changed significantly over

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12 For households whose heads were in their 50s, employment arrangements among couples are prevalently dual-income households or households with a full-time homeworker. Households with stay-at-home fathers and households where both the husband and wife were not working each account for small percentages. In other words, the graph showing percentages of full-time homeworkers could be viewed as the inverse of the percentages of dual-income families. As household heads become older than 60 years, they approach the age of retirement, and so the proportion of households within this age group where neither the husband nor the wife works rapidly increases, accounting for approximately 20% of those aged 60–64 years and approximately 40% of those aged 65–69 years.
the 28-year study period. In period [1], the ratio of households whose head was in his 50s and which had a full-time homeworker was consistently lower than the same ratio for dual income households whose head was aged 50–54 years (34.3%) or 55–59 years (40.8%). In later years—that is to say, by period [5]—the ratio of households with full-time homeworkers fell to approximately 30%; on the other hand, the ratio of dual income households increased, resulting in a widening gap between the two. The ratio of households whose head was 60 years or older and which had a full-time homeworker fell approximately 4% from period [1] to period [5], while the ratio of dual income households increased approximately 10% in recent years (not shown in the figure). Retirement age at 60 years of age was previously common, but the continuation of employment through extensions of the retirement age and reemployment in firms have become all but mandatory, on account of the implementation of the 2008 amendment to the Law Concerning Stabilization of Employment of Older Persons.

III-4. Allocation of Working Hours per Household, by Time Period

Here, we examine the allocation of working hours among households, by time period. To analyze working hours, we examine households where the household head was younger than 65 years and employed. Figure 10 indicates that the average number of working hours for both the husband and wife form a flat graph line throughout all periods. While the working hours for other household members was within the range of about 12–17 hours, this represents circumstances where households containing older parents are still actively working, as well as circumstances where adult children were also working. While the working hours

Figure 10
Weekly working hours for household members by time period

Note: The sample used here consists of married-couple households where the husband is the household head, younger than 65 years old and a 'gainful worker'.
of other household members decreased by approximately 4 hours between periods [1] and [5], this is due to a decrease in the number of household members and a decrease in the number of those living together. As a result, the working hours of households, on the whole, decreased.

Would the current situation of long working hours change with a reduction in the statutory working hours, as discussed in Section II? (Figures have been omitted, due to space constraints.) For households whose head is younger than 65 years, the ratio of husbands working 60 or more hours per week fell 3.7 percentage points, from 19.3% in 1986 to 15.6% in 2013; meanwhile, the ratio of those working 45–59 hours per week fell 6.2 percentage points. On the other hand, the ratio of those working 35–44 hours increased 8.8 percentage points. We can therefore deduce that over the 28-year study period, approximately 10% of these individuals transitioned from working 45 or more hours per week to fewer than 45 hours per week.

What is the situation for wives? The ratio of wives in households where the husband was younger than 65 years and where the wife worked 60 or more hours per week constitutes a small minority (i.e., 2–3%). On the other hand, the ratio of those working 0–19 hours is approximately 50–54%; in fact, this ratio was always around 50% or more over the 28-year study period. The ratio that did change was the ratio of workers who worked 45–59 hours per week (a 6.5-percentage-point drop); the ratios of those who worked 20–34 hours per week or 35–44 hours per week, meanwhile, increased. The combination of all those who worked 45 or more hours per week decreased 8 percentage points over the 28-year period. While individuals working 0–19 hours are mainly considered part-time workers who sought to work the number of hours that qualified them for the spousal tax credit for their husbands, the ratios for these women did not significantly change. The ratio of part-time workers that is said to be increasing recently is that of those working 20–44 hours, while that of those working long hours (i.e., 45 or more hours) is decreasing.

Next, we investigate the working hours per week for husbands, by the age group of the household head and time period (Figure 11). Working hours are longest for household head husbands in their 20s and 30s. While many couples within this age group have married and started families, this is also a time when much attention is placed on child-rearing. Nonetheless, the husbands in the dataset were working long hours, on average; their working hours tended to decrease after they reached their mid-40s. If we look at the figures by time period, although the number of working hours decreased between periods [1] and [5] for husbands aged 25–29 years, there were no major changes in any of the other age groups. When examining working hours alone, it seems that it may be difficult for husbands to contribute to child-rearing, given those long working hours.

On the other hand, the working hours of wives, compared to those of husbands, changed dramatically; this is made clear when we examine working hours by time period and the age

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13 The number of working hours was divided into five categories (i.e., 0–19, 20–34, 35–44, 45–59, and 60 or more hours per week), and ratios were examined for each of these categories.
The number of working hours for wives in households whose household head husbands were in their 20s or 30s was, on average, 12–15 hours per week. This may be because many wives work part-time, or do not engage in paid work on account of maternity or child-rearing responsibilities, for example. When household head husbands reached over 40 years of age, the number of working hours among their wives increased, exceeding 20 hours per week. The phenomenon of wives returning to the workforce after completing the first stage of child-rearing is clearly evident.
Examinations by time period show that the number of working hours of wives in young households (i.e., where the household head husband was less than 35 years old) increased between periods [1] and [5], with a particular increase of 3.5 hours per week among those aged 30–34 years. It is believed that an increasing number of women under the age of 35 continue to perform paid work as women’s marriage and child-bearing ages increase. On the other hand, the number of working hours among wives whose household head husbands were between 40 and 55 years old was decreasing, with a particular decrease of 4.5 hours per week among those aged 45–49 years. As shown in Figure 10, the number of working hours among wives in general did not, on average, change significantly throughout the time period, although the employment structure has undergone significant changes.

Finally, we examine working hours per week, by employment arrangements among couples (Figure 13). Among all the households, the working hours of dual income households

Figure 13
Weekly working hours for household members by time period and employment arrangements among couples

According to the Ministry of Health, Labour and Welfare’s “Vital Statistics,” the average age of first marriage for women had increased by 3.8 years, from 25.5 years in 1985 to 29.3 years in 2013; the average age of a mother’s delivery of her first child, meanwhile, had increased by 3.7 years, from 26.7 years in 1985 to 30.4 years in 2013.
were the longest. The number of working hours for husbands of dual income households were 2 hours per week greater than that of households with full-time homeworkers. Examinations by time period show that the numbers of working hours for husbands and wives in dual income households have been gradually decreasing, with a particular decrease of 5.5 hours per week for wives between periods [1] and [5]. The number of working hours among husbands from households with full-time homeworkers had not changed. Compared to households with a full-time homeworker, the number of working hours for husbands in dual income households was nearly 3 hours longer per week in period [1]; the difference in period [5] was about the same (i.e., a difference of less than 1 hour).

IV. Household Attributes and Husband–Wife Working Hours

IV-1. Working Hours and Employment Rates of Wives, by Annual Income Level of Husband

One of the traditional issues surrounding the topic of household labor supply concerns the relationship between the husband’s income and the labor supply of wives and related trends. First, we examine the relationship between the working hours of husbands and wives by the annual income level of the husband, for the full study period (1989–2013). Figure 14 indicates the number of working hours among husbands from households where the husband’s annual income was JPY3 million or higher was around 47–48 hours per week, and

Figure 14
Weekly working hours for couples by annual income group of the husband

![Weekly working hours for couples by annual income group of the husband](image)

Note: The sample used here consists of households where the husband is the household head and 25-64 years old. The sample in 1988 and before is excluded due to the change in survey items.

15 Because the question format in the “Special Survey of the Labour Force Survey” relating to income is different from that in surveys prior to 1989, data from the 1989 and subsequent surveys are used here.
that no major changes were observed in terms of the husband’s income. On the other hand, the number of working hours per week for wives decreased slightly as the income of their husbands increased. An examination of the relationship with the wives’ employment shows that the wives’ employment rate was highest (i.e., 63.7%) when the husband’s income was JPY2–2.99 million; the trend of a decrease in line with an increase in the husband’s income was most obvious when the husband’s income exceeded JPY3 million. A decrease in the wives’ labor participation in accordance with an increase in their husbands’ income is consistent with the Douglas–Arisawa’s Law. Moreover, while the wives’ employment rate exhibited a reverse (upward) trend when the husband’s annual income was at JPY15 million or higher, such households accounted for less than 2% of all households. In the sample used here, the husband-income group with the largest number of households was that which earned JPY5–6.99 million per year.

Figure 15 presents the employment rates of wives by time period. In any given period, wives’ employment rate is consistently highest when the husband is in the JPY2–2.99 million income bracket; similarly, the ratio of working wives is consistently high among households where the husband’s income is low. Furthermore, the pattern wherein the employment rate of wives declines as their husbands’ income increases remained consistent throughout all periods. However, an examination of the peak employment rates of wives between 1992 and 1997 and between 1998 and 2001 shows a slight decline in their employment rate in accordance with an increase in their husbands’ income. This is consistent with the find-

![Figure 15](image)

**Figure 15**

Employment rates for wives by time period

**Note:** See Figure 14.

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16 The reason that there are individuals with logged working hours but no income stems from the question format in the LFS. Every year in February, the survey asks about the number of working hours in the last week of the month, while asking also about income over the entire year. Therefore, individuals who are currently working but have not received an annual income would not report zero working hours.
ings of Kohara (2001), who indicated a weakening trend in the Douglas–Arisawa’s Law in the 1990s. However, in the first five years of the 21st century, the data show another strong decreasing trend in wives’ employment rates in accordance with an increase in their husbands’ income. One more characteristic evident from observations by time period relates to the height of the curve that depicts the employment rate of wives. From 1989 to 1991—and, more recently, from 2008 to 2013—the employment rate of wives increased across all income groups. It becomes evident that, on the whole, the number of women who were employed had increased, regardless of their husbands’ income.

IV-2. Child-Raising and Husband–Wife Working Hours

Another factor regarding a household’s choices of working hours is home production within the household; among these are activities related to childcare. Therefore, let us next examine working hours by the presence or absence of children. Comparisons were made between households where the youngest child was six years or younger, and households with no children under the age of 15 (Figure 16). To examine the impact of having small children (i.e., where the youngest child was six years or younger), data were aggregated for households where the household head husband was 25–45 years old. The results were a flat graph line depicting the working hours of both husbands and wives throughout all periods, with no significant changes. The working hours for husbands in households with small children (i.e., where the youngest child was six years or younger) were 1 hour longer than those of husbands with no children under the age of 15. An examination of the average age of husbands aged 25–45 years showed that the average age of husbands in households with small children (i.e., youngest child was six years or younger) was 35 years, while the average age of husbands in households with no children under the age of 15 was 37 years. It should be noted that even when we aggregate the data in terms of husbands’ age groups and compare it to husbands in their 30s (the age bracket with the largest number of households whose youngest child was six years or younger), husbands with small children tended to work longer working hours, and the working hours of husbands with no small children were shorter. On the other hand, the working hours of wives in households with no children under the age of 15 were long, exceeding 20 hours per week and, about double the average number of working hours (i.e., 10–11 hours per week) for wives in households that had small children (i.e., youngest child was six years or younger). An examination of the number of children by employment arrangements of households showed that, across all periods, dual income households and households with full-time housewives had, on average, 1.74 and 1.76 children, respectively; thus, no significant differences were seen among these various employment arrangements in households. Furthermore, during the 28-year study period, the average number of children showed a slight downward trend, as the average number of children in dual income households fell from 1.75 to 1.70; that number in households with a full-time homemaker, on the other hand, fell from 1.8 to 1.73, thus demonstrating that the number of children in married couples was not declining precipitously.
Finally, let us examine combinations of husband–wife working hours by the presence or absence of children. The results of previous research suggest that working hours may function more as time constraints, rather than working hours and the hours spent by husbands and wives doing housework and childcare being simultaneously decided (Yoshida 2009). Furthermore, if there are children within the household that require childcare, the working hours of the father in particular tend to function as major constraints to childcare participation (Mizuochi 2006); this, in turn, is thought to affect wives’ choices vis-à-vis working hours. For this reason, we examine wives’ average weekly working hours in comparison to husbands’ working hours. Figure 17 shows the wives’ average working hours against the husbands’ working hours, in 1-hour increments. The horizontal axis denotes the husbands’ average weekly working hours, while the vertical axis denotes those of the wives. The larger the circle, the larger the number of households that fall into the husband–wife combinations of working hours. In households where the husband’s working hours equaled 0 hours, the wife worked about 10 hours, on average; however, on the whole, wives’ weekly working hours tended to increase as their husbands’ working hours increased. Furthermore, it is evident that when the husband’s working hours is held constant, the wife’s average weekly working hours in households with no children under the age of 15 were longer than those in households where the youngest child was six years or younger.

Let us examine in greater detail the relationship between husband and wife working hours. Here, the working hours for those not working are assumed to be zero. Based on a scatterplot that depicts combinations of working hours for husbands and wives for each household, we examine what kind of changes occur in the predicted values of wives’ working hours in relation to their husbands’ working hours, based on nonparametric estimations. Locally weighted scatterplot smoothing is used in the estimation method. With this tech-

**IV-3. Relationship between Husband’s and Wife’s Working Hours**

![Figure 16](image-url)
nique, maximum weights are given to the observed values of combinations of husband–wife working hours per given household. By reducing the weight of the observations distant from the neighborhood, we are able to calculate predicted values that fit the observed data, while also minimizing the impact of outlier observed values. The aggregate data targets are households with employed individuals and a husband household head who was 25–45 years old. Households where the wife did not undertake paid work are also included. Estimations based on the presence of children and the time period are calculated for these samples.

First, we consider households with children (i.e., where the youngest child was six years or younger) (Figure 18). Because many wives in households with preschool children report 0 hours of work, the predicted values for wives’ working hours are low. Estimation results for 1986-91 and 1992-97 show upward-sloping curves, i.e., wives’ working hours increased with an increase in their husbands’ working hours. In the years after 1998–2001, the slope of the estimates become more gradual, until in the most recent period (i.e., 2008–13), wives’ working hours manifest a decreasing trend as husbands’ working hours exceed 40 hours. Hence it is evident that, in recent years, when small children are present, the longer the working hours of the husband were, the smaller were the number of working hours supplied by wives.

Next, let us examine households with no children under the age of 15 (Figure 19). Compared to the results in Figure 18, the predicted value of wives’ working hours is high, and the estimation results show a positive relationship between wives’ and husbands’ working hours throughout all five periods. In other words, in the event that there are no time restrictions related to home production within the household (e.g., child-rearing), a relationship is observed wherein as the husband’s working hours increase, the working hours of his wife

Figure 17
Average weekly working hours for wives by working hours for husbands

Note: The sample used here consists of cases where the husband is the household head and 25-64 years old (including the unemployed).
Figure 18
Weekly working hours for couples with small children

![Graph showing weekly working hours for couples with small children over different years.]

Note: The sample used here consists of households where the youngest child is six years or younger and the husband is the household head and 25-64 years old (including the unemployed).

Figure 19
Weekly working hours for couples with no children under the age of 15

![Graph showing weekly working hours for couples with no children under the age of 15 over different years.]

Note: The sample used here consists of households with no children under the age of 15 where the husband is the household head and 25-64 years old (including the unemployed).

also tend to increase.
V. Conclusion

In this study, we clarified the structures and trends in working hours among Japanese households throughout the quarter-century after the 1980s; this was done from the perspective of the labor supply of household units, after examining consistencies in official statistics that pertain to working hours. The results can be summarized as follows.

First, as discussed in Section II, representative government statistics on working hours derived from household surveys conducted by the Ministry of Internal Affairs and Communication—namely, the LFS and the STULA, as well as the ESS. They were also derived from establishment surveys—namely, the MLS and the BSWS, both of which are conducted by the Ministry of Health, Labour and Welfare. Major differences between household surveys and establishment surveys exist, however, particularly with regard to populations, targets of aggregation vis-à-vis working hours, survey periods, and definitions of “working hours.” The results of comparisons based on the characteristics of each statistical survey show that there are consistencies among the statistics of both household surveys and among both establishment surveys with regard to working hours. However, there is a certain divergence of approximately 6 hours per week since the 1980s between household surveys and establishment surveys, and it can be largely explained by the working hours of men. While the divergence per week for men in 2013 was approximately 5.5 hours per average employed person, comparisons limited to regular full-time employees showed a reduction in the divergence to approximately 3.7 hours. The remaining divergence could be explained by nonpaid working hours that are recorded only by workers, as has been previously suggested in the literature.

In Section III, we analyzed the working hours of husbands and wives, using micro data from the Special Survey and Detailed Tabulation of the LFS from the 1986–2013 period. In Section IV, we examined in greater detail the relationship between household characteristics and husband–wife working hours. Our results show that while there were no changes in average weekly working hours for either husbands or wives in those households with a spouse, major changes were observed in the structure of the labor supply of wives. The employment rate of wives—excluding household heads in their 40s—increased overall, even among age groups commonly occupied with child-rearing. While the proportion of households with full-time homeworkers decreased, the increase in labor force participation by wives who worked part-time suppressed increases in overall average working hours. While the husbands’ average working hours per week did not significantly change over time, there were also no significant differences observed in terms of whether or not children were present or whether or not the wife was employed. These findings suggest that in households with children (i.e., youngest child was six years or younger), the wife, and not the husband, tended to adjust working hours.

Although a weakening trend was observed in the 1990s with regard to the Douglas–Arisawa’s Law—which proposes a negative correlation between the wife’s labor force partici-
pation and her husband’s income—a clear relationship has again been observed in recent years as a deciding factor for wives in choosing whether or not to work. Furthermore, with regard to the relationship between husband–wife working hours and the presence of children, when estimating the weekly working hours for wives against husbands’ working hours (in 1-hour increments), the working hours of wives tended to be longer as their husbands’ working hours increased, in households with no children younger than 15 years. This trend did not change over the 28-year study period. On the other hand, the results show that, in recent years, when children (i.e., youngest child was six years or younger) were present and the husbands’ weekly working hours exceeded 40 hours, the weekly working hours of wives were clearly constrained. Therefore, there is evidence in recent years that, in households that have small children, the husband’s working hours become a constraint to the supply of his wife’s working hours.

From our analysis, it is clear that the working hours of husbands in their 20s and 30s (i.e., marriage and child-bearing years) were long in cases of both dual income households and households with full-time homeworkers. These findings demonstrate that husbands are presented with a difficult situation in terms of balancing their work and child-rearing duties. It is believed that employment rates increase and the proportion of dual-income households increase as the working hours of wives—including both those regularly employed full-time and those working part-time—decrease. Support for balancing both work and child-rearing and creating work–life balance is necessary not only for women, but also for men. Given the major impact of these decisions on the choices of household activities, it is clear that support in balancing both work and child-rearing is needed, particularly for the younger generation. Furthermore, to implement detailed measures applicable to certain work situations and age groups, we also need to examine those additional household-survey items that reflect the diversification of employment and time management. These would include, for example, working hours by place of employment and the daily work schedules of workers in general, as well as working-hour systems and paid working hours that apply to employees.

References


Micro Data”, ISS Discussion Paper Series, F-154, The University of Tokyo.
working style in a super-aging society, Nikkei Publishing. (in Japanese)

Appendix

Table A1
Descriptive statistics

(Married-couple households where the husband is the household head)

<table>
<thead>
<tr>
<th></th>
<th>Whole sample (N=468,190)</th>
<th>Younger than 65 years (N=370,134)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std. Dev.</td>
</tr>
<tr>
<td>Age of the household head</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of children under the age of 15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment rate</td>
<td>Husband</td>
<td>0.816</td>
</tr>
<tr>
<td></td>
<td>Wife</td>
<td>0.490</td>
</tr>
<tr>
<td>Working Hours per week</td>
<td>Husband</td>
<td>37.171</td>
</tr>
<tr>
<td></td>
<td>Wife</td>
<td>16.744</td>
</tr>
<tr>
<td></td>
<td>Married Couples</td>
<td>53.915</td>
</tr>
<tr>
<td></td>
<td>Household unit</td>
<td>72.196</td>
</tr>
<tr>
<td>Annual income of the husband 1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0.211</td>
<td>0.088</td>
</tr>
<tr>
<td>Less than 1 million yen</td>
<td>0.038</td>
<td>0.023</td>
</tr>
<tr>
<td>1-1.99 million yen</td>
<td>0.061</td>
<td>0.054</td>
</tr>
<tr>
<td>2.2-9.99 million yen</td>
<td>0.089</td>
<td>0.098</td>
</tr>
<tr>
<td>3-3.99 million yen</td>
<td>0.118</td>
<td>0.140</td>
</tr>
<tr>
<td>4.4-9.99 million yen</td>
<td>0.118</td>
<td>0.146</td>
</tr>
<tr>
<td>5-6.99 million yen</td>
<td>0.174</td>
<td>0.217</td>
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<tr>
<td>7-9.99 million yen</td>
<td>0.126</td>
<td>0.158</td>
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<tr>
<td>10-14.99 million yen</td>
<td>0.047</td>
<td>0.057</td>
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<tr>
<td>15 million yen and more</td>
<td>0.018</td>
<td>0.019</td>
</tr>
<tr>
<td>Employment arrangements</td>
<td>Dual income household</td>
<td>0.457</td>
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<tr>
<td></td>
<td>Households with a full-time housewife</td>
<td>0.359</td>
</tr>
<tr>
<td></td>
<td>Households with a full-time house husband</td>
<td>0.034</td>
</tr>
<tr>
<td></td>
<td>Unemployed household</td>
<td>0.151</td>
</tr>
</tbody>
</table>

Note 1: The annual income of the husband is obtained only after 1989.
Note 2: The sample size for whole sample and those who are under the age of 65 is 390,915 and 303,702, respectively.