

# The Augmented Labor Supply Function: Worktime Evidence From Japan

Barry Axe\* and Lonnie Golden\*\*

## INTRODUCTION

Japan has experienced an unusually long workweek relative to the United States and Western European countries for several decades now. The average length of weekly hours as of 1988 for all non-agricultural workers in Japan is about 47 hours and almost 44 hours for production workers in the manufacturing sector, while both are under 40 hours in most West European economies. Further-more, this gap has been widening. Japan's annual work hours in 1990 totaled 2,052 per worker compared to 1,938 hours in Great Britain, 1,924 in the United States, 1,655 in West Germany and 1,643 in France as of 1988. Since 1985 the Japanese government has pursued a goal of reducing the standard workweek from 48 to 46 hours, and ultimately to 40 hours by the mid-1990s. Yet the success of these efforts to reduce work time so far have been minimal. Why hours of work should increasingly diverge between countries begs a systematic explanation.

This paper introduces an expanded labor supply function. It is used to explain why hours of work in Japan remain so long, despite sustained rises in worker wages and productivity. It thus suggests why the conventional hours of labor supply model of the work-leisure tradeoff is too limited in scope to explain empirical facts of work and leisure time across countries. In the traditional model, worker hours decisions are based primarily on real wage and non-wage income, given a worker's taste for leisure. Consequently, analysis of work time trends typically occurs either in the narrow context of the relative size of opposing income and substitution effects or the overly broad, black box context of worker preferences.

The augmented labor supply function developed in this paper expands on the conventional model by adding explanatory factors suggested in the previous literature, such as Rima (1984), Bell (1981) and Nyland (1989). The traditional labor supply model is inverted, positing a function that captures the worker demand for discretionary time. Several, critical socio-cultural variables are included in these supply of work time and demand for leisure time functions. We then use descriptive evidence from Japan concerning worktime and the explanatory variables in the leisure (work) time functions to argue that it is largely the idiosyncratic cultural and institutional differences that make the workweek relatively longer in Japan than elsewhere. Because the demand for leisure has not risen markedly in Japan, cultural and other variables continue to shift out the labor supply function enough so that, apparently on balance, they dominate the presumed long run, negative net income effect of rising real wage rates on hours of work. Finally, the model and the evidence presented

---

\* Barry University, Miami, FL 33161.

\*\* Temple University, Philadelphia PA 19122 and Pennsylvania State University (Delaware County Campus) Media, PA 19063. A technical appendix is available from the authors.

here lead us to predict that recent Japanese government pronouncements to encourage shorter work hours will not be successful unless they are accompanied by considerable changes in the culturally-determined attitudes of employers, employees and government itself.

### A BRIEF HISTORY OF ECONOMIC THOUGHT ON WORK TIME REDUCTION

*"The innate human desire to improve one's lot is strong enough to more than offset one's natural sloth ... Workmen, when liberally paid by the piece, are very apt to overwork themselves and to ruin their health and constitution in a few years."* Adam Smith, *Wealth of Nations*, 1776

The potential benefits of shorter work hours, historically advocated by scholars and labor activists, are the increased quality of life and reduced unemployment. (See Appendix 1 for a simple, standard economic analysis of worker utility under hours reduction, and comparing the result to hourly wage cuts.)

Since Adam Smith's time, the analyses of trends in worktime have taken two, diverging directions that are both rooted in Smith's writings. The marginalist tradition focuses on the subjective preferences of individuals for leisure, and the potential worker choice of additional leisure over additional income as wages rise over time. Marxian writers tend to concentrate on the character of production processes under capitalism and on the innate limitations of human capacities to produce, rather than exploring the consciousness of the individual. Regarding worktime, neoclassicists historically argue that reducing the length of the work day will yield little benefit since it can adversely affect employer's labor costs of production, and is severely limited in its ability to alleviate unemployment. Analysts writing in the Marxian spirit argue that employers and workers are in conflict over the length of weekly work time, where employers attempt to extend and intensify hours of work but then must periodically reduce hours when confronting the inevitable physiological and mental limitations of workers. In order to explain why the workweek in Japan has not declined despite rising real wages, we draw on elements from both analytical approaches.

### EXTENDING THE CONVENTIONAL THEORY OF WORK AND LEISURE HOURS

The conventional, modern neoclassical choice-theoretic model assumes that rational individuals will maximize their utility (well-being) subject to their income or budget constraint, where utility (U) is derived from both the amount of leisure (L) and the goods (Q) one can obtain at the given price level (P) with income (Y). An individual's total budget is the sum of wage (wH) and nonwage (I) income, where H is total hours worked, and ones total time allotment is T. More formally:

$$(1) \max U(Y, L) \text{ s.t. } wH + I = Y (=PQ) \text{ and } H = T - L$$

An individual is assumed to reach equilibrium when:

$$(2) (MU_Y + MU_H) = MU_L$$

where the marginal utility of income plus the marginal utility of hours of work (usually assumed to be a negative, disutility) is exactly equal to the marginal utility of hours of leisure. Thus a worker will choose a unique, optimal number of hours of labor to supply to the labor market, which yields him the utility-maximizing combination of goods and leisure, given his income constraint and his inherent preferences for leisure time.

The wage rate thus determines the way in which a worker divides his time between paid work and leisure (non-work) hours in the conventional model. Also, any factor that affects the demand for unpaid leisure or vacation time must equally affect ones desired hours of labor supply. An increase in the hourly wage rate creates two opposing influences on the demand for leisure time. A substitution effect occurs if leisure is assumed to be a normal good and if the "price" of leisure is the opportunity cost of not working. A wage increase will boost this price of leisure and in turn, depress the amount of leisure time demanded. In contrast, an income effect is created by a wage increase, because it allows a worker to "consume" more leisure time

while remaining at the same income level. Higher earnings also permit a worker to better afford leisure activities, which can lead one to desire more leisure time in order to spend added earnings. If the income effect dominates on balance, a person would tend to take more leisure and work fewer hours.

Whether the income effect predominates for a worker in a specific country such as Japan, however, may depend not only on individual preferences and the wage rate, but also on consumer expenses, the desired standard of living, and on cultural values, which all may be quite different in Japan than in other countries.

The standard labor supply function suggests that labor supply is mainly a function of ones market real wage rate:

$$(2) L^s = f(w/p)$$

Whereas a more comprehensive model of labor supply is:

$$(3) L^s = g(w_i/w^*, C_i/p, A_i/p, \bar{H}, I, UN)$$

The first variable in (3) suggests that ones labor supply is not only determined by absolute money wage rate, but by money wage relative to ones reference wage. The factors traditionally presumed to determine the money wage are market forces, ability to pay and "institutional rules," such as firm compensation strategy or collective bargaining. Wage adjustments are assumed to be based on comparative norms and cost of living. The reference wage of a Japanese worker can be either his customary, previously received wage, or the wage of his reference group (employees at ones firm, in ones work group, or ones general peer group). Rima (1984) argues that this wage ratio has an inverse relationship with the amount of labor supply, since a decline in ones relative wage rate will lead a worker to work longer hours in order to restore the customary relative income position. The next two variables, the level of real consumption and real asset holdings will also have an inverse association with labor supply, since an inflation that erodes the real value of disposable income and assets will cause workers to work longer hours in order to restore their previous standard of consumption or wealth.

The variable "I" influences labor supply since additional non-labor income, such as individual or interest income or unemployment insurance causes a pure income effect. Alternative sources of such income may induce a worker to work fewer hours than he would otherwise. The variable UN implies that macroeconomic conditions influence the decisions of microeconomic agents. In times of high unemployment, a worker may be more willing to supply fewer hours of work and take more leisure time, if he perceives that it will reduce the probability of layoff. Unemployment also conditions labor demand if low unemployment is associated with labor shortages, which require employers to shorten work times in order to recruit new labor from outside the current labor force.

Finally, a critical variable is  $\bar{H}$ , an important non-pecuniary aspect of working conditions that is not typically stressed by neoclassical economists who investigate the potential compensating wage differential for various working conditions.

The variable  $\bar{H}$  suggests that the number of hours one works is strongly influenced by institutions similar to those that influence wage rates, such as management strategy, collective bargaining, government hours legislation and policy, and cultural standards. The latter includes the number of hours worked by ones reference group. In Japan, this reference group could consist of comparable workers in the work group in the corporation, or the of the entire full-time work force. It is expected to have a positive impact on the amount of worktime if an autonomous worker would prefer fewer work hours yet adjusts his work hours upward toward the traditionally established standard of his social reference group. A full critique of the applicability of conventional labor supply theory across different cultures would require a more detailed empirical analysis than is provided by the scope of this study. Yet, a labor supply function would not be universal nor useful for comparison purposes if it excludes the independent influence of culture on worktime.

### A SIMPLE DEMAND FOR LEISURE AND SUPPLY OF LEISURE MODEL

In this section we propose a demand for leisure function that is derived from the modified labor supply function suggested in the previous section. Although we refer to it as leisure time, it is more useful to think of it as discretionary time -- the amount of time available to a worker other than required work time. From this standpoint, a worker's discretionary time can be allocated toward inactivity (pure leisure), recreational leisure, procedure leisure, non-market work and household production, or, perhaps ironically, non-required work time.

The following variables are argued to sway worker demand for discretionary (leisure) time:

$$D_L = D(W; MRS, I, ED, P_L, D_y, MPS, Y^e, \tilde{H}, UN, OJL, AGL^2, e, \sum L^s, \sum L^d)$$

Variable, description, expected direction of impact:

1. wage rates ( $w$ ), which may have either a net positive or negative effect on the demand for discretionary time. The direction of its impact also depends on  $w^*$  (which unfortunately is not measurable in the context of our macroeconomic comparison)
2. marginal rate of substitution (MRS) of leisure for income, where Japanese workers may have a greater subjective preference for an hour of work relative to an hour of leisure, at a given work week length.
3. alternative sources of income available ( $I$ ), such as income transfers or nonlabor income, which ought to increase the demand for leisure time
4. education level (ED), which may reduce the demand for leisure if more educated workers have access to the kind of desirable jobs which lowers their resistance to working long hours
5. direct cost of leisure activities or leisure goods ( $P_L$ ), which will reduce the quantity of leisure time demanded.
6. worker demand for income ( $D_y$ ), to pay for debt, housing or transportation costs, which decreases the demand for leisure
7. the marginal propensity to save (MPS), which reduces the demand for leisure when the household's MPS rises
8. perceived, expected income growth in the future ( $Y^e$ ) or career enhancement resulting from the amount of current labor supply, is expected to decrease demand for leisure time
9. institutionalized, traditional standard of hours ( $\tilde{H}$ ), imposed by the Japanese culture manifest through pressure from an employer or the employee's reference groups, which pushes down worker demand for leisure if workers attempt to preserve their relative income level
10. unemployment rate (UN), which raises the demand for leisure if employees perceive the threat of layoff smaller with shorter hours, or, it reduces leisure demand if it undermines worker bargaining power to achieve an aim of reduced work time
11. on-the-job leisure (OJL) provided by the employer or available to the employee, such as breaks or a flexible pace of work, which would reduce the demand for leisure time
12. age (AGE) and age squared, with the former negatively affecting demand for leisure while the latter is positive, which means that the demand for leisure is not linear image if it first falls with age, bottoms out and then rises
13. the intensity of effort ( $e$ ) required per hour, on average, which boosts worker demand for discretionary, leisure time
14. a host of labor supply ( $L^s$ ) characteristics, such as participation of women and family size
15. a list of labor demand variables ( $L^d$ ), such as the drive to create contingent jobs, extent of unionization and fixed employment costs, employer provision of quality day care

Among the advantages of this modified model are that it is built inductively, from historical, factual information rather than from abstract theory alone; it roots the individual labor supplier in a group, society or culture rather than in a vacuum, with respect to their hours of work decision; it applies the Keynesian tradition of emphasizing that worker behavior, including work time decisions, depends on interpersonal comparisons and on ones relative income position in addition to ones absolute position; it accepts that an inherent preference for leisure as a normal good may exist but suggests that it may be outweighed by the socio-cultural factors; it makes cultural practices of employers and of employees endogenous to the labor supply decision rather than treating such decisions as mere, outside "institutional constraints." A shortcoming of the model is that we have no formal way to evaluate the relative weights of each variable in explaining

Japan's longer workweek. Future research may better establish the exact empirical relationships. The demand for leisure function's more subjective variables MRS,  $Y^e$ , and  $e$  unfortunately cannot be investigated here due to the lack of direct, quantitative evidence to measure them, but they ought to be part of any attempt to estimate the parameter of a labor supply model. The last two variables supply and labor demand characteristics, are outside the scope of this paper, although they may be important structural factors that would shift the demand representative worker's demand for leisure function.

Appendices available on request contains the corresponding "supply of leisure time offered function" and the reduced form equilibrium of a long standard workweek that is formed where it intersects the demand for leisure functions. The long equilibrium workweek length in Japan can be traced to the uniquely Japanese characteristics in these functions. Our hypothesis is that the major contributing factors are  $P_L$ ,  $\tilde{H}$ , and  $D_y$ . In addition,  $Y^e$ ,  $I$ , MPS, and OJL may also help keep the Japanese workweek longer. The next section uses attitude surveys and anecdotal information to explain the apparently excessive work hour habits of Japanese workers as a phenomenon which transcends individual choice or preference and stems more from economic and cultural pressures on the individual worker.

### OBSERVED PATTERNS OF WORK AND LEISURE HOURS: THE CASE OF JAPAN

Although actual figures on the number of hours worked vary considerably according to the source (which differ because of the inclusion of agricultural workers, government workers, etc.), the patterns described in Table 1 suggest that there has been no downward trend in average weekly working hours in Japan since the mid-1970s. Although average monthly working hours dropped from over 183 in 1973 to 172 in 1975, the average through 1987 was in the range of 175. From 1976 to 1987, regular hours declined only slightly, from 162.9 to 160.8. But this decline was almost equally offset by a slight increase in overtime work hours. Weekly hours data during the 1980s exhibit a similar trend. There appears to have been little reduction in working hours from 1980 at least through 1987, followed by a slight drop up late in the decade.

As an indicator of desired leisure time, weekly working hours can be somewhat problematic misleading for several reasons. First, employers may choose to adjust weekly hours temporarily as a response to fluctuation in demand, opting to permanently change employment levels only when they perceive that the change in demand is longer-term. Secondly, demand for leisure is unlikely to be distributed evenly across the work year. Alternatively, workers with a greater preference for leisure may seek longer weekends or more paid vacation time as opposed to shorter weekly hours per se. Accordingly, it would be worthwhile to examine a few other measures of working and non-working time.

The Ministry of Labor's recommendation for a five-day workweek has been a key public policy issue in Japan during the mid-1980s. Table 1 presents the change in five-day workweeks over the 1970s and 1980s. As with weekly hours, use of a five-day workweek increased dramatically up until 1975. But since that time the increase has slowed and appears to have leveled off at about 50 percent of the firms. This pattern arguably reflects company policy more than it does worker choice. More than 75 percent of the labor force was working a five-day workweek (in 1986), but they nevertheless accounted for only 50 percent of the firms. This suggests that workers at the larger companies are receiving more opportunity for leisure than those at the smaller firms.

The most useful measure of leisure preference might be total annual hours worked, which excludes the issue of how these hours are allocated over the year. Total yearly working hours in Japan attained a peak in 1960 at 2,432 hours, and afterwards declined until 1975 when it reached 2,043. In 1990, annual hours were 2,052, indicating that there has been virtually no decline in total annual working hours in Japan since 1975. The average Japanese worker still worked 244 hours more than the average American worker (in 1986), a differential of 12.6 percent.

Recently, these figures have received considerable attention in the international and domestic popular press. As an example, the Economic Planning Agency (EPA) issued a report in August, 1987 claiming that the differences between annual leisure hours in Japan and other major industrialized countries are narrowing. The report advised that reduction in working hours in Japan were needed so that "Japanese workers can lead lives comparable to those of workers in the U.S. and Europe." The overriding motivation, however, may be

evident in a comment in the same report that implementation of the five-day workweek would increase household spending by ¥1.7 trillion, stimulating GNP (on a 1986 base) by 0.5 percent. The report also noted that leisure hours in Japan have been declining since 1965, in spite of the increases in GNP.

#### *Paid Vacation Days and Overtime Hours*

Data in Table 3 indicate that the average Japanese worker actually took only half of his earned paid vacation days in 1986. Moreover, consistent with the EPA statement, this percentage has actually declined in the 1980s, which suggests some resistance in the work place to increased leisure time.

There is also evidence that Japanese workers work longer overtime hours than workers elsewhere. In addition, a significant proportion of those working overtime hours neither receive nor request overtime compensation for many of the additional hours.

#### **DESCRIPTIVE EVIDENCE TO SUPPORT THE HYPOTHESIZED IMPACT OF NON-WAGE VARIABLES LISTED IN THE DEMAND FOR LEISURE FUNCTION.**

Table 2 shows that real hourly wage rates have risen rapidly in Japan -- by an average of 2.8 percent annually over the 1981-1986 period, and by 2.3 percent in the 1985-1989 period -- but the general demand for leisure time apparently has not grown accordingly. The income effect is often found in empirical studies to predominate in the U.S., over a long run period of time. The usual explanation is that real wage growth eventually weakens the income preferences of workers relative to the marginal value they place on leisure time, causing them to prefer leisure to work. If so, the demand for leisure time in Japan should be intensifying as its hourly wages rise, even if we accept that there can be considerable differences in the average preference for work or leisure (the MRS) between aggregate labor markets of different countries. The strength of this subjective preference of the average Japanese worker for leisure is difficult to gauge directly. Yet it is clear that other variables overshadow the presumed effect of wage increases on the desire for leisure time in Japan. On average, individual labor supply curves have apparently shifted out so that, even if the labor supply "banks backwards," the quantity of hours supplied remains high.

It is possible that Japan's government provides fewer or less generous transfer payments to workers, thus compelling them to work longer in order to attain a given income level. But there is no known compelling evidence that Japanese workers have significantly less access for non-labor income sources than incompatible countries. Likewise, levels of education are not so significantly greater in Japan than in the U.S. and Western Europe so as to make jobs there less of a disutility. Similarly, the age composition of Japan's labor force is, if anything, relatively older than in other countries. There has been a trend toward raising the mandatory retirement age in Japan while western European governments and U.S. companies have been pushing workers toward earlier retirement ages. Workers nearing retirement generally tend to prefer shorter hours. So it is doubtful that nonlabor income age nor education explains Japan's longer hours of work.

#### *Spending Required for Necessities and Leisure Activities*

A more promising candidate to explain the long hours, however, is the cost of leisure activities in Japan. The assumption that the cost of leisure can be equated solely with the opportunity cost of the wage rate may be fallacious. Workers may consider the cost of leisure to be much higher than what is given up by not working. Specifically, the cost of leisure should be understood to include expenditures required to engage in leisure activity, such as the cost of travel, exercise programs, golf, entertainment and spectator sports, etc. As such, factors that stimulate high savings (low consumption) rates seem likely to inhibit the demand for leisure time as well.

Evidence does indeed suggest that leisure is considerably more expensive for a Japanese worker than for an American worker having the same amount of work and leisure time available. Many Japanese workers thus probably feel that they cannot afford to substitute as much leisure for work time as workers elsewhere.

The necessary work time to pay for a given leisure activity may be higher for the Japanese worker. A government poll found that when respondents were asked to indicate their favorite non-working activity. Fifty percent said "watching television" and 30 percent said "sleeping." This is also why Miyano has

**TABLE 1:**

#### **ANNUAL HOURS OF WORK AND LEISURE, BY COUNTRY**

##### TOTAL ANNUAL HOURS OF WORK<sub>a</sub>

YEAR	JAPAN	UNITED STATES	UNITED KINGDOM	FRANCE	WEST GERMANY
1975	2,043	1,888	1,923	1,830	1,678
1978	2,137	1,942	1,955	1,772	1,719
1981	2,146	1,888	1,910	1,717	1,656
1984	2,146	1,934	1,997	1,647	1,671
1985	2,168	1,924	1,952	1,643	1,639
1986 <sup>b</sup>	2,110	_____	_____	_____	_____
1987	2,078	_____	_____	_____	_____
1988 <sup>b</sup>	2,085	_____	_____	_____	1,614
1989 <sup>b</sup>	2,075	_____	_____	_____	1,622
1990	2,052	_____	_____	_____	_____

##### Index of Total Hours,

1989 (1982 = 100) <sup>f</sup>	111.2	109.8	91.0	85.7	95.0
--------------------------------	-------	-------	------	------	------

##### ANNUAL HOURS OF LEISURE,

1986 <sup>c</sup>	1,858	2,284	2,403	_____	2,696
-------------------	-------	-------	-------	-------	-------

##### ANNUAL HOURS WORKED BY FULL-TIME WORKERS,

1987 <sup>d</sup>	2,253	1,970	_____	_____	1,732
-------------------	-------	-------	-------	-------	-------

##### ANNUAL HOURS WORKED BY PART-TIME WORKERS,

1987 <sup>d</sup>	1,217	889	914	_____	850
-------------------	-------	-----	-----	-------	-----

##### NORMAL HOURS OF WORK, MANUFACTURING,

1987 <sup>e</sup>	2,138	1,912	1,778	_____	1,716
-------------------	-------	-------	-------	-------	-------

**SOURCES:** <sup>A</sup> 1987 White Paper on Leisure, Leisure Development Center, Japan, and ILO, *Working Time Issue in Industrialized Countries*, p.2.

<sup>B</sup> Approximation based on data in *OECD Employment Outlook*, July 1990, and ILO, *ibid*, p. 23.

<sup>C</sup> 1987 Report of Japan Economics Planning Agency.

<sup>D</sup> OECD, *ibid*, p. 19-22 and The OECD Secretariat.

<sup>E</sup> ILO, *ibid*, p. 10.

<sup>F</sup> *Monthly Labor Review*, April 1991, p. 86.

commented that the greatest obstacles of the Leisure Development Center are the high cost of leisure and the reluctance to pay for leisure activities. A common example of the prohibitive price of leisure is the cost of eighteen holes of golf on a public course -- a minimum of \$75 and an average of about \$150. Membership costs range from \$30,000 to \$350,000 -- some as high as \$1 million. With fewer than 2,000 golf courses for a country of 121 million people, this high cost is hardly surprising.

Not only can this high cost of leisure activity dampen worker demand for leisure time, but the relatively high cost of basic necessities in Japan may be driving a greater worker demand for income. The high real estate prices in Japan are already legendary and they have increased dramatically since 1987. Housing, transportation and food costs are arguably higher in Japan than elsewhere. Thus Japanese workers must

**TABLE 2**  
**AVERAGE HOURS OF WEEK IN JAPAN, SELECTED YEARS**

Year	Total Monthly Hours <sup>a</sup>	Monthly Regular Hours <sup>a</sup>	Weekly Overtime Hours <sup>a</sup>	weekly Hr. non-agri Hours <sup>a</sup>	Weekly Hr. Mfg Workers <sup>b</sup>	Production Workers <sup>d</sup>	Index Of
							Overtime Hours MFG <sup>e</sup>
1973	183.8	169.2	14.6	—			
1975	175.5	162.9	12.6				
1977	174.5	162.9	11.6				
1979	175.2	162.9	12.3	47.3 <sup>c</sup>	46.0 <sup>c</sup>	43.1 <sup>e</sup>	
1981	175.7	162.2	13.5	47.5	46.0		
1983	174.7	161.6	13.1	47.7			
1985	176.3	162.1	14.2	47.6	42.2	43.2	100
1986	175.8	161.0	14.8	47.7	46.0	42.9	94
1987	175.2	160.8	14.4	47.3	46.3	43.2	92
1988	175.4	162.1	13.8	47.3	46.8	43.7	108
1989				46.9	46.3		109

**SOURCES:** <sup>a</sup>Japan Ministry of Labor (Monthly Survey on Labor Statistics), Leisure Development Center white paper on leisure April 1987.

<sup>b</sup>Annual Report on the Labor Force Survey 1987, Statistics Bureau, Management and Co-ordination Agency, Japan, March 1988, p. 78-80, and *OECD Employment Outlook*, July 1990 (includes all civilian labor force employed).

<sup>c</sup>1985 = 100, *OECD Employment Outlook*, July 1990.

<sup>d</sup>Ministry of Labor "Working Paper on Labor", 1990.

<sup>e</sup>These figures are for 1980.

forgo relatively more leisure hours in order to attain a minimum, targeted standard of living.

The exorbitant prices of recreation activity and housing is probably part of the reason behind the high propensity to save in Japan. Total savings per household in Japan averages an astonishing \$71,016 compared to \$28,125 in the U.S. The savings rate of households in Japan has climbed from 13 percent in 1983 to 19 percent of income in 1988, while the US it has remained under 7 percent the long held Japanese worker habit of saving seems likely to continue, propped up by the high cost of housing. Undertaking reductions in working hours will probably not diminish the Japanese propensity to save. On the contrary, a more likely scenario is that workers will continue to take only a portion of their earned vacation time, not because of a preference for less leisure perse but because of the preference to build up savings rather than consume.

A worker's supply of labor is likely to be influenced by perceptions of continuous income rather than by their current wage alone. In Japan, and in the U.S., a worker in a career-type job may work long hours at a lower wage if the worker anticipates that it will yield cumulative experience enhancing his long-term career

and income success. The institution of implied lifetime employment in Japan may encourage a worker to work long hours at the front end of his career in order to heighten the chance of promotion. However, the evidence on firm size disputes this notion, since workers in large firms do not work longer hours than workers in medium or small-sized enterprises.

If the hypothesis that higher unemployment causes workers to favor increased leisure over greater income (in order to alleviate the threat of unemployment) is correct, then the relatively lower unemployment rates in Japan (averaging no more than a rate of 3 percent) might indeed somewhat restrain worker pursuit of shorter work hours.

It has been asserted that what appears to be a longer workweek in Japan really reflects more on-the-job leisure time in the Japanese workplace. A 1988 poll of 500 men aged 20 to 60 by the Fukoku Mutual Life

**TABLE 3:**  
**AVERAGE HOURS OF WEEK IN JAPAN, SELECTED YEARS**

YEAR	LABOR FORCE WITH A FIVE-DAY WORK-WEEK <sup>a</sup>	PERCENT OF FIRMS WITH A FIVE-DAY WORK-WEEK <sup>a</sup>
	1971	24.0
1973	54.7	30.0
1975	69.9	43.3
1977	72.0	43.6
1979	72.9	46.1
1981	74.7	47.8
1983	77.1	50.0
1985	76.5	49.1
1987		50.9

**SOURCES:** <sup>a</sup>Japan Ministry of Labor, Report on Survey of 1986 and 1985 Wage and Working Hours System, January 1988 and November 1986.

Insurance Company found that less than 13 percent of Japan's workers say they are required to focus solely on work matters while in the office. Fifty-one percent say that they can leave the office on personal business, over 36 percent said they could relax in coffee shops, 16 percent said they could go shopping, and almost 3 in 5 said they are allowed to read newspapers during work hours. If on-the-job leisure is more wide spread in Japan than in the U.S., which is unclear, then the leisure time available on the job certainly curbs worker demand for discretionary time.

#### *Long Standard Hours and the Role of Culture and Company Policy*

The Japanese culture may permeate employer workplace practices, government policy and employee work attitudes, and thus influence work and leisure time in ways distinguishable from other developed economies. Japanese workers encounter pressure from both employers and from peers. (See Appendix 3 for a diagram illustrating the utility an individual must sacrifice by working more than his optimally preferred number of hours, which still may exceed the utility level attained by working a job with part-time hours.) Employers demand an unusually strong dedication to the company in Japan, and corporate loyalty is virtually synonymous with the number of hours worked. Long hours on the job are not only tolerated but are expected, and millions of workers respond to this pressure.

### *Government Policy Toward Working Hours and Leisure*

Eduction of working hours has become public policy in Japan, yet it has been formulated primarily in response to foreign criticism of Japan's foreign trade and capital surplus. The clearest expression of the work and leisure policy in Japan is in the so-called Maekawa report prepared by the Advisory Commission for Economic Structural Adjustment for International Harmony. The report urged shorter hours and extended vacations for Japanese workers. It recommended a three-stage reduction in average weekly working hours to 46 hours per week in 1988, to 44 hours in 1991 and down to 40 hours by the end of 1993. The report sets a goal of reaching 1,800 average yearly working hours, as early in the 1990s decade as is possible. This number is even lower than the current average in the U.S. The Long-Term Vision for Labor Policy Panel recommended a work time target of 1,600 hours by the 21st century. The need for reducing working hours, and lowering the savings rate in order to stimulate consumption, was reiterated by the Minister for Foreign Affairs in January, 1988, and by the Ministry of Labor. A revision of the Labor Standards Act, which had not been changed since 1947, was enacted in April, 1988. The new law reduced the total weekly hours after which employees must qualify for overtime pay premiums (of time-and-one quarter pay) from 48 to 46 hours.

The Maewaka Report and rewriting of the Labor Standards Act represent two ways in which government policy may influence work hour standards. Yet boosting leisure time may not be the government's primary motivation. In calling for a transformation of "traditional policies on economic management and the nation's lifestyle," the report, "echoes long-standing American requests to create greater access for foreign manufactured products into the Japanese economy." The real, underlying objective may be to curb foreign criticism than to address complaints arising from the Japanese work force. If the policy initiated by the Nakasone administration to shorten working hours was almost entirely in response to foreign pressure rather than to domestic demand, it is questionable whether there is a genuine interest of government in increasing the number of leisure hours.

The Labor Ministry's revision of the Labor Standard Act, which would implement the first stage of working hours reduction, was eventually passed in Diet but not without considerable opposition. In effect, the new law allowed employers to require workers to work longer hours during busy seasons, eliminating the possibility of fixed working schedules. General Council of Trade Unions of Japan (SOHYO) opposed the overly great flexibility of the 46 hour average week, which they argued would allow employers to force workers to work longer rather than shorter hours. Labor unions were also critical that the law excluded enterprises with less than 300 employees -- the workers with the longest working hours.

In addition to the changes in the law, the government has also created the Leisure Development Center and has been established in the Ministry of International Trade and Industry. The director expressed his task as follows,

"At the moment we Japanese think work is the most important thing in our lives. But that attitude came from the industrial revolution that began in England some 150 years ago. Now we're entering a new high-tech revolution where we do not have to work as long. Our goal is to reduce working hours to 1,500 by the year 2,000.

### *Worker Attitudes on Worktime*

Even if statistics on work and leisure hours under the Japanese and U.S. employment systems show great differences, worker attitudes toward work and leisure may be similar. Nevertheless, it appears that most Japanese workers have internalized, somewhat, the cultural pressure to be at work for long hours. However, the absence of a public outcry opposing the current employment situation should not be misconstrued as indicating that Japanese workers are satisfied with such long work hours.

Although it is difficult to reconcile the results of attitude surveys with actual behavior, there is considerable evidence of worker dissatisfaction. As an example, in a poll of 8,072 workers by Nippon Life Insurance in August, 1987, only 2.3 percent said that they found their living standards satisfying. In all, nearly 70 percent stated that they were dissatisfied with their lives. Moreover, nearly 53 percent gave "not enough time to enjoy my life" as the main reason for dissatisfaction. A similar poll was conducted by SOHYO in

October, 1987, among 38,700 union members. When these respondents were asked what would be necessary to improve their lifestyles, over 70 percent said "a wage increase" while (only) 53 percent said "reductions in working hours." In addition, 90 percent said that their current wages do not correspond to their needs.

In November, 1986, the Prime Minister's Office released the results of a poll of 5,000 randomly selected adults on attitudes regarding working hours. The government stressed that the results showed that half of all Japanese workers want shorter working hours. However, only about 22 percent said that they felt that total annual work hours should be reduced to about 2,000, and 25 percent stated that hours were adequate currently. Table 4 contains the main reasons cited for the support for or opposition to reduced working hours. Nevertheless, there was strong support, 75 percent, for the 5-day workweek. Interestingly, however, only 25 percent were in favor of closing schools and government offices during weekends. We can also examine working habits among management, whose support would be necessary to implement hours reduction. Shukan Gendai conducted a poll in June, 1988 among 300 "kacho" (middle managers). A full 37 percent said that they worked 30 to 50 hours of overtime per month, 32 percent said that they took less than 5 days of vacation per year, and 55 percent said that they normally returned home after 10:00 p.m..

In sum, survey results suggest that attitudes toward leisure time are contradictory at best. All in all, these surveys indicate that there is some demand from a majority of workers for a significant reduction in working hours. But both the statistical data and the attitudinal surveys suggest some resistance to the government's apparent hours reduction policy. (Among union members, fear of reduced hours is partly based on a misunderstanding of the meaning of reduced hours because nearly half of those opposing reductions gave fear of reduced income as the reason.) The fact that most workers, especially those employed in smaller firms, are not using all their earned vacation time supports this. The reason for the resistance is probably most evident in the SOHYO poll. Although there is considerable dissatisfaction with current living standards, the source of it is the relationship between wages and the cost of living more than the excessive hours of work required.

### **CONCLUSIONS AND IMPLICATIONS OF JAPANESE POLICY EFFORTS TO INFLUENCE THE HOURS STANDARD**

The factors most responsible for Japan's longer workweek appear to be the standard imposed by employers or culture, a heightened worker demand for income in order to purchase high-priced basic consumer goods ( $C_i$ ), household assets ( $A_i$ ) and leisure activities. Other factors such as exogenous individual preferences for leisure time, on-the-job leisure, non-labor income, education and age, probably play no stronger role in Japan than they do elsewhere. A more realistic conception of a labor supply function should thus contain the independent influences on desired work and leisure time of inflation, scarcity of assets and social pressures.

The recent Japanese government policy to reduce working hours is arguably based less on a genuine concern for the welfare of the labor force and more on an assumption that additional discretionary time will boost consumer spending. However, the relatively low demand for leisure in Japan has more to do with structural features of the Japanese economy than a Japanese fondness for work over leisure. Since public policy toward hours of work time in Japan actually conflicts with demands of most employers and preferences of many workers, the policy is likely to have little effect on savings or spending. Employer and cultural resistance, the high cost of leisure activities and low propensity to consume in Japan seem likely to inhibit government efforts to attain its seated goals regarding reduced working hours, unless the government pursues enough investment in leisure infrastructure to revolutionize attitudes toward work and leisure.

The standard assumption that leisure is a normal good does not mean that the role of market wage rates will not be outweighed by economic structural and cultural factors in determining worker demand for leisure time. These economic and cultural factors can make leisure time considerably more expensive to a worker than the opportunity cost of working. Research in labor supply behavior that neglects these factor, which shift labor supply curves, will fail to provide meaningful explanations and predictions regarding paterus of work and leisure time.

**TABLE 4:**  
**REASONS FOR SUPPORT OR OPPOSITION TO REDUCTIONS**

**WORKING HOURS**

**SUPPORT FEWER HOURS**

COULD USE THE EXTRA TIME  
TO RECOVER FROM MENTAL STRESS  
AND PHYSICAL FATIGUE 53%

WOULD BE HAPPIER BY MAKING MORE  
USE OF LEISURE 49.7%

**OPPOSED TO FEWER HOURS**

HAVE ENOUGH HOLIDAYS 48.6  
CONCERNED ABOUT LOWER INCOMES 37.7

**REFERENCES**

- Akerlof, George, "Gift Exchange and Efficiency Wage Theory: Four Views," *American Economic Review*, May 1984, 79-83
- Altonji, Joseph and Paxson Christine, "Labor Supply Preference, Hours Constraints & Hour-Wage tradeoffs," *Journal of Labor Economics*, Vol. 6, No. 2, 1988 p.259-76
- Asahi Newspaper*, "Take Vacations, Take Vacations," April 18, 1988.
- Atrostic, B.K., "The Demand for Leisure and Nonpecuniary Job Characteristics," *American Economic Review*, June 1982, 428-440.
- Bell, Carolyn Shaw, "Demand, Supply and Labor Market Analysis," *Journal of Economic Issues*, June 1981, 423-434.
- Bienefeld, M.A., *Working Hours in British Industry: An Economic History*, Weidenfeld and Nicholson, London, England, 1972.
- G. Duncan and B. Holmland, "Was Adam Smith Right After All? Another Test of the Theory of Compensating Wage Differentials," *Journal of Labor Economics*, Vol. 1, no 4, 1983, p.366-79
- Chicago Tribune*, "Japan is Encouraging It's Workers to Play More, Toil Less," July 1, 1986.
- \_\_\_\_\_, "Compensating Wage Differentials for Mandatory overtime?" *Economic Inquiry*, October 1984, Vol. 22, p.160-78
- Ehrenberg, Ronald and Schumann, Paul, *Longer Hours or More Jobs?*, Cornell Studies in Industrial and Labor Relations #22, Ithaca, NY: Cornell University, 1982.
- Filer, Randall, "The Effects of Nonpecuniary Compensation on Estimates of Labor Supply Functions," *Quarterly Review of Economics and Business*, Spring 1986, 17-30.
- Genee, Harold, *Managing*, New York: Avon, 1984, 53-81.
- Golden, Lonnie, "The Insensitive Workweek: Trends and Determinants of Adjustment in Average Hours," *Journal of Post Keynesian Economics*, Fall 1990, 79-110.
- \_\_\_\_\_, "Unions, Nonwage Labor Costs and the Character of Labor Market Adjustment," *Quarterly Review of Economics and Business*, (forthcoming, Winter, 1991).
- Hammermesh, Daniel, "Shirking or Productive Schmoozing: Wages and the Allocation of Time at Work?," *Industrial and Labor Relations Review*, Special Issue, February 1990, 121s-133s.
- Hart, Robert A., *Working Time and Employment*, Boston: Allen and Unwin, 1988.
- Horvat, A., "Japanese Bureaucrats Resist Plan to Overhaul Economy," *Los Angeles Times*, April 25, 1986.
- Hunnicuttt, Benjamin K., *Work Without End*, Temple University Press, 1988.

- Japan Free Press, "What's It Like to be a Kacho," June 13, 1988.
- Japan Times*, "SOHYO Members Singing Same Song: Money Not Enough Hours Too Long," January 1, 1988.
- \_\_\_\_\_, "Diet Woman Says Labor Law is Unfair," Sept. 7, 1987.
- \_\_\_\_\_, "Salaried Workers are Dissatisfied with Their Lives," August 21, 1987.
- \_\_\_\_\_, "Bill to Change Workweek Draws Protest," Aug.19, 1987.
- \_\_\_\_\_, "Workers Need Five-Day Week: Economic Planning Agency," *Japan Times*, August 6, 1987.
- \_\_\_\_\_, "Survey Shows Slight Decline In Use of Five-Day Workweek for 1985," December 1, 1986.
- \_\_\_\_\_, "Poll: Half of Workers Want Shorter Hours," November 23, 1986.
- \_\_\_\_\_, "Dragging Toward Five-Day Workweek," October 5, 1986.
- Kniesner, Thomas, "The Full-Time Workweek in the U.S.:1900-1970," *Industrial and Labor Relations Review*, October 1976, 3-15.
- Levitan, Sar and Belous, Richard, *Shorter Hours, Shorter Weeks: Spreading The Work to Reduce Unemployment*, Baltimore: Johns Hopkins University Press, 1977.
- Newsweek*, "Flaunting It, Japan Style," August 13, 1990.
- New York Times*, "Salarymen are Working Themselves to Death," March 19, 1990.
- Nyland, Chris, *Reduced Worktime and the Management of Production* Cambridge, England: Cambridge University Press, 1989.
- Omai, Kenichi, *Asian Wall Street Journal*, June 1, 1988.
- Organization for Economic Cooperation and Development (OECD), *Economic Survey of Japan 1988/89*.
- Owen, John D., *The Price of Leisure*, Montreal, Canada: McGill-Queen's University Press, 1970.
- Philadelphia Inquirer*, "Working Themselves to Death," April 22, 1990.
- Reynolds, Lloyd J., Masters, S. and Moser, C. *Labor Economics and Labor Relations*, New Jersey: Prentice-Hall, 1989, 57-88.
- Rima, Ingrid, "Involuntary Unemployment and the Re-specified Labor Supply Curve," *Journal of Post Keynesian Economics*, Summer 1984, 540-550.
- Roche, William K., "Leisure, Insecurity and Union Policy in Britain: A Critical Extension of Bienefeld's Theory of Hours Rounds," *British Journal of Industrial Relations*, 1986, 1-17.
- St. Louis Post Dispatch*, "Japan Expects Fight over Workweek Act," January 1, 1987
- Shank, Susan, "Preferred Hours of Work and Corresponding Earnings," *Monthly Labor Review*, November 1986, 40-44.
- Wall St. Journal*, "Lust for Labor," April 21, 1986.
- Yamadi, Narumi, "Working Time in Japan: Recent Trends and Issues," *International Labor Review*, November/December, 1985, 699-718.
- Yomiure Newspaper*, "Five-Day Work Week," August 18, 1986.