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On the Sources of Wage Flexibility
in the Japanese Labor Market

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When compared with the American labor market scene wage flexibility on the macro front, and (i) small rate of self-initiated turnover (quits), (ii) the steepness of the slope of age-earnings profile plus the existence of an independent tenure effects on earnings on the microeconomic front characterize the Japanese labor market. It is true that some parts of the overall wage flexibility in Japan are due to bonus payments, which appear to fluctuate procyclically (for recent inquiry see Freeman-Weitzman [1986]), and to the increased use of the so-called 'part-time' workers (see Figure 1), who exist outside the normal pay and fringe benefit system of the firm¹ and whose wages apparently show no increasing trend for the last ten years and thus have kept declining relative to those of regular workers; however, even if we subtract these factors and concentrate on the regular wage component of regular workers, the fact of wage flexibility remains, which is the main subject of this paper. (See Shinozuka-Ishihara [1977] and Gordon [1982] for evidence on wage flexibility.)

Since the structure of the labor market is similar between the U. S. and Japan, both having organized internal labor markets

and secondary markets², the reasons for such a difference cannot be reduced to such a simple term as the degree of competitiveness.³ The question seems to require a much deeper conceptual understanding. What I wish to argue below is that the difference reflects the difference by which the two systems derive fundamental work incentives from respective workers.

Labor Productivity and Wages

Since the issue on the annual bargaining table is normally the magnitude of (nominal) wage increments (except for emergency cases decrements are out of consideration), the question of wage flexibility is meaningful (in terms of its capacity to absorb macro shocks) only in relative comparison with the rate of productivity growth besides the usually discussed rate of inflation. Japan seems to have an advantage here, for the country still enjoys a relatively high productivity growth. See Figure 2 which compares the movement of the rate of change in labor productivity and the rate of change in the real product wage for the past fifteen years (for all private industries and for manufacturing industry, respectively). Out of the fifteen years the rate of productivity growth exceeded the rate of real product wage increase for seven years for the entire private industries, three years for the manufacturing industry (this difference reflects the significant deterioration in the domestic terms of trade between the products of the manufacturing sector and those of the rest of the economy).

Of course the wage and labor productivity variables are

supposed to be related indirectly through the usual marginal productivity channel. However, they are also likely to be related more directly, sometimes in deviation, either temporarily or permanently, from the marginal productivity theory. A number of theoretical hypotheses have been advanced on this issue. The main point common to all is that the way how wage is set affects the worker incentives and thus affects labor productivity. The importance of this worker incentive channel in explaining the movement of labor productivity is underscored by a recent empirical work in the U. S. by Bowles, Gordon and Weisskopf [1983] which rescues the well-noted failure (as discussed by Brainard and Perry [1981]) of the traditional approach based on the slow pace of capital accumulation.

The expression "the way how wage is set" is deliberately an ambiguous one, for here various alternative specifications are possible to cope with different aspects of worker incentives, to which we now turn.

Three Facets of Worker Incentive Problems

We must separate three issues when we deal with worker incentive problems: First, the work intensity in current production (referred to as (a) below), second, the smooth skill and knowledge transfer between senior and junior workers (b), and third, the willingness to accommodate newly available knowledge and technology (c). These are equally important in maintaining high productivity growth. These generate problems for employers because derivation of these incentives are not automatic, but

rather they must somehow be induced.

The relationship between the level of wages and work incentives has been discussed in two alternative forms; some emphasize the relevance of absolute wage levels while others emphasize the relevance of relative (either interpersonal or intertemporal) wage levels in affecting individual worker behavior.

The former is represented by the original efficiency wage hypothesis (that dates back to Adam Smith; recently argued for by Leibenstein [1974], Solow [1979]), which argues that high rewards to workers bring about loyalty feelings and attachment to the current employer⁴, which induces high work incentives on possibly all three counts (a, b, c) noted above. Although there is no need to preclude the operation of such a psychology (surely it must exist to some extent) it invites no further analysis; it simply becomes a question of existence or non-existence.⁵

On the other hand, models in the latter approach that are relevant to our question include:

- (i) the firm specific human capital model that discusses wage premium or rent-sharing to prevent worker separation (Becker [1964], Oi [1962], Hashimoto [1979], and also Calvo [1979]) relating to (b) above; the on-the-job screening hypothesis (Salop [1973], Stiglitz [1974], Ohashi [1978], Weiss [1980], and a related work by Harris-Holmstrom [1982]) that also discusses wage premium to prevent separation of "able" workers (as they are so perceived) may be regarded as a variant of this model once such information is regarded as an important component of the firm specific capital;
- (ii) the job competition model that emphasizes the role of wage setting based on customary standards of fairness,

notably by intra- and inter-occupational reference groups and seniority (both presumably reflecting the amount of "effort" expended previous to or on the job), specifically avoiding wage bidding for jobs among workers in and out of the firm, in maintaining the incentive (b) (and partly [a]⁶); this notion by Thurow [1975] is a clear development and extension of the internal labor market hypothesis (by Doeringer and Piore [1971], and by Ujihara [1953] in Japan, see also Sumiya [1974]), which are themselves development of the traditional ideas of institutional labor economists; and

- (iii) the shirking model of two alternative forms -- one, a long-term contract with pure seniority wages (Lazear [1979] [1981], and another, a recontracting model (also widely referred to as a version of the efficiency wage model), that is the labor contract with a conditional option for renewal, the condition being the level of performance --, where the employer artificially creates and maintains a gap between the wealth position of being employed in the current firm and that of job loss from the current firm, is a theoretical response to the issue (a). (Calvo [1979], Shapiro-Stiglitz [1984], Miyazaki [1984], Bowles [1985], Gintis-Ishikawa [forthcoming], Summers-Bulow [1985], Akerlof-Yellen [1985]) Later I shall offer a third model which introduces an element of a long-term contract into the pure recontracting model.

This is not a place to survey and critically evaluate the whole range of these theoretical developments. Yet, it is clear that these alternative models should not necessarily be considered as competing hypotheses; rather, they are complementary models that respond to different facets of the worker incentive problems noted above. The important question

for our present purpose is how they bear upon the wage flexibility issue. Let us now turn to leave some remarks.

Sources of Wage Flexibility

If we cut the knot of three interrelated incentive problems (a), (b), (c) by supposing that the problem (a) precedes the other two (for [c] it seems certainly true, while for [b] it may not necessarily be so except for very simple jobs), then we effectively face the choice of models in (iii), leaving aside the relevance of cultural and historical values regarding work and rewards and the original efficiency wage hypothesis referred to above. For various reasons I should first like to entertain an idea that the U. S. system relies relatively more heavily on the recontracting model, while the Japanese system relies relatively more heavily on the seniority system (and the related system of internal promotion that is superimposed on it). (I shall, however, later argue that the seniority system is only a secondary reinforcement, the genuine essence lying in the existence of the long-term contract.) Although there is no direct evidence for this, large differences in the slope of age-earnings profiles between the two countries that have been observed so persistently since Shimada [1974]'s first comparative study (for a recent confirmation, see Hashimoto and Raisian [1985], especially their Tables 5 and 6; they also show a large and significant independent effect of tenure for Japan) seem consistent with our supposition.

Postponing the discussion of the possible reasons for this

difference until a later part of this note, let us consider its implications first. The recontracting models -- seemingly more relevant for the U. S. -- have in large part dealt with a long run stationary state and produced an endogenous explanation of (real) wage rigidity and accompanying involuntary unemployment or the dualistic wage structure; but a consideration of its shortrun property has produced such results as the employers have little incentives to change the wage level (i.e., income loss of not adjusting wages is minimal) in the face of small demand shocks (Akerlof-Yellen [1985]), or that employers individually choose to maintain the same wage level and resort to purely quantity adjustment in the face of unanticipated and temporary demand shocks (Gintis-Ishikawa [1985]). Although the short-run and medium-run properties of the recontracting models are further to be explored, these results indicate that the rigid wage feature is preserved for small or temporary shocks. (However, permanent shocks do invite permanent adjustment in the real wage levels.) Such a tendency is buttressed further by the need to keep the trained and screened workers, which is made possible by paying them a wage higher than their market reservation wage. Therefore unless firms all experience the same demand shocks simultaneously the inflexible wage feature remains.

On the other hand, the seniority system -- seemingly more prevalent in Japan -- clearly requires for its sustenance preservation of employment (to fulfill the terms of the contract); Thus firms opt to let workers work with low productivity (in addition to letting them work for shorter hours) when demand is low and

thus absorb demand shocks. The principal means for accomplishing this incentivewise is the decline in the wage rates or wage growth rates.⁷ Workers accept such a contract in the first place because they weigh long-term job security in the current firm and accompanying future rise in earnings (as they accumulate seniority) far more than short-run variability in wages, which can easily be coped with by individual savings. In effect, workers see short-run variability in wages as a price worth paying to obtain the long-term job security.⁸ Thus what appears to be wage flexibility (even after hours-adjustment is made) may be interpreted as a confirmation of the terms of the long term contract on the company bargaining table, whose principal function is rather to agree on the evaluation of the state of nature, as it is occurring. (Importance of the seniority system in explaining wage flexibility has been argued by Mannari and Marsh [1977] and Ohashi [1981]. I am offering here the same argument yet with a different interpretation of bargaining, as it becomes clear by the next paragraphs.)

'State-Contingent Recontracting' As a Fundamental Source for Wage Flexibility

We have just contrasted two now popular variants of the shirking model. I would now like to argue that the pure seniority system, despite its importance in Japan, is perhaps only a secondary reinforcement to a more primary mechanism; i.e., a hybrid of the basic recontracting model and a state-contingent contract which does not require any seniority element. The

state-contingent character may be regarded as a minimal element of a long-term contract.

Let us describe the outline of the structure and the properties of the model (which is spelled out in detail in Gintis-Ishikawa [1984]). The model supposes a demand constrained Keynesian regime, in which there occurs a random shock of either a good state or a bad state. It thus resembles a familiar world of a simple version of the Azariadis-Bailey type insurance contract model. Workers and employers agree about the probability distribution of the shocks. Firms offer a contract of different wage levels and different discipline and layoff probabilities for each state (for an instance, the layoff probability when the economy turns from a good state to a bad state at the end of the period). Workers' collective power gets reflected in the cost of disciplining for employers, and thus indirectly affects the level of wages. (Therefore it can still be viewed as a collective bargaining model.) Workers whose performance were judged poor get fired at the end of each period, just like the original recontracting model⁹; the risk of firing is deliberately kept uninsured by the employer. In such a setting we can show that, under certain regularity conditions, a labor hoarding behavior with an accompanying procyclical wages becomes optimal for the employer. The reason is that laying off workers dilute the effectiveness of a costly discipline. Such a world with an element of a long-term contract produces wage flexibility that we are looking for, still within a framework of the shirking model.

Of course, this model allows layoffs when the nature of the probability distribution is believed to have changed permanently. Moreover, short-run disruptions in employer-employee relationship arise when both sides on the bargaining table do not agree on the interpretation about the state of the nature of the economy (as might have actually occurred in mid-seventies which witness a huge uprise of strike activities prior to wage settlements). However, the basic point remains that the hoarding policy on the part of employers is conducive to maintaining the work incentive (a). Seniority wage feature can then be looked at as a secondary reinforcement. It is certainly conducive to other work incentives that we discussed, i.e., (b) and (c).

The Feasibility of the State-Contingent Contract

Why then are there such differences between the U. S. and Japan? What factors foster the generation of state-contingent contracts in Japan? I think this is where different organization for collective bargaining or wage determination and the underlying differences in social, cultural, and historical factors matters. It requires a careful study. What follows is not much more than my conjecture. Japanese labor organization (either trade union or its substitute of worker-employer council, with the exception of the seamen's union) is a company based one where, through the system of "joint consultation", information regarding the current performance of the firm is easily available.¹⁰ Therefore, workers and employers are more likely to reach an agreement as to what state of nature has actually

happened. The emphasis on asymmetric information regarding the state of nature (since Hall-Lilien [1979]) that has been so widely enjoyed in the American theoretical literature does not seem to be much relevant in Japan, except in a period of big transition such as after the first oil shock when both parties' evaluation might have differed widely.

The rationales for company-based labor organizations, on the other hand, are sought by Japanese labor economists (See Shirai [1979] [1983]) in the formation of internal labor markets, with an elaborate system of on-the job training, company-specific wage structure, fringe benefits and welfare systems, the historical non-existence of occupational or craft unions, and the workers' possible identification of self with the workplace community (a cultural factor emphasized by Dore [1973]).

The Weakness of the Reference Group Norms

Another factor that helps in the direction of wage flexibility in Japan is the apparent weakness of the notion of 'fair' wage differentials between jobs and occupations among workers. Earlier we referred to Thurow's job competition model which points out the importance of the observance of this notion in keeping the work incentive (b) (and [a]) but at the same time introducing (wage) rigidity into the system. The idea extends the institutional labor economists' (especially Ross [1948] and Dunlop [1957]; Patchen [1961] for an empirical study) notion of reference groups that incorporates historically and customarily formed values concerning different jobs and occupations. In

Japan the idea of reference groups was enjoyed by labor economists in investigating the manner in which major wage settlements in leading industries diffuse over different industries and smaller size firms in the course of annual Shuntos (or how wage bargains are "patterned after" those in leading industries) in the latter half of the 1960's (see chapters written by Koike, and Sano in Sano, Koike and Ishida [1969]). While they have succeeded in showing (through questionnaires and interviews of firms and unions) that firms and trade unions both take account of wage increases in other firms (in big firms more on other major industries and major firms while in smaller firms more on other firms in the same locality) in addition to the current state of business of the firm in determining the annual wage increases, they did not attempt at all to relate those facts to the possibly underlying wage norms held by workers. Therefore such findings tell us little about the actual existence of the notion of 'fair' wage differentials. As one of the authors later admitted (Ishida [1976], p.245), the experience of 1975 (the year the national union leader Kaoru Ohta declared "Shunto is dead") was dominated by consideration of the business situation of individual firms, superceding any relative comparison that were being established as custom. This shows that we cannot easily attribute the relative comparison of wages to some grounds of equity among workers. This implies that the inter-firm wage rigidity of the kind that is introduced by the job competition model (the intra-firm wage rigidity notwithstanding) is not strong in Japan.

Incidentally this circumstance is consistent with the fact that the actual spread of job-based wages (Shokumu-kyu), so strongly advocated by the management federation (Nikkeiren) since the early 1960's (as a partial correction of the rigid seniority wage structure), is so slow. (See Shirai [1979], pp. 166-73.) Adoption of job-based wages presupposes a carefully made and agreeable job evaluation schemes; however, they are traditionally quite underdeveloped in Japanese firms. Again lack of the development of craft unions and general industrial unions in Japan, in turn, partly explains this entire phenomenon. It may also reflect the employers' ambivalence, not wishing to finely demarcate the jobs of workers, so that they retain flexibility in reallocating jobs to workers. As stressed by Koike [1977, Chapter 7], workers in Japanese firms (internal labor markets) tend to rotate between jobs, acquiring different skills on the way; such practice is desirable also for employers, because (i) short-run demand shocks are easily coped with by reallocating jobs among workers, (ii) newly available technology requiring reorganization of jobs are easy to introduce and implement, and (iii) each worker is easily replaceable by another worker, implying that it breaks up the workers' local monopoly of knowledge. In short it renders higher work incentives (b) and (c).

Concluding Remarks

In this note I have summarized the conceptual issues with regard to the sources of wage flexibility in the Japanese labor

market. A theoretical model involving the worker shirking problem and a state-contingent contract is invoked to explain the labor hoarding policy and procyclical wage movement. The well-noted seniority wage feature is seen as a secondary reinforcement to what seems to be a mechanism of primary importance. In any case, the difference seems to reflect the alternative manners in which the Japanese and U.S. management cope with the worker incentive problems.

Footnotes

1. Parttime workers are not eligible for membership in the company-based trade unions. Furthermore trade unions do not show willingness to include them. See Shirai [1979], p. 3.
2. See Ono [1981], Muramatsu [1983] and Odaka [1984] for discussion of the overall Japanese labor market structure from a dualistic point of view.
3. The exception lies in the ports of entry to the internal labor markets, called as the new graduates' market (set up for each schooling level) in Japan, for which the term competitiveness rightly has its original meaning. It actually played a large role in reducing the wage differentials among workers during the rapid growth era. See Shimada [1969] for a discussion of

evidence, and Ishikawa [1981] for theoretical conceptualization of the new entrants' market. Shimada rightly emphasizes the differential impacts of the tightness of the new graduates' market upon large and small-medium sized firms. As seen by Figure 3 the wage levels established in the new graduates' market have changed very little since 1975 through 1981, resulting in a clear trend of relative decline with respect to the average wage level of entire regular workers. The figure also reveals a relatively high correlation between the movement of the initial salary and the current fixed investment of the economy (as theoretically expected). When compared with the latter, the former shows a clear downward rigidity feature for the period since 1975. It thus questions the hypothesis that 'wage competition' is operating in full force in the new graduates' market. We will leave this for a future study. In this paper we shall concentrate on the sources of wage flexibility for workers already inside the organizations.

4. Leibenstein's reasoning was different in that he resorted to a more physiological relationship between pay, nutrition and productivity.

5. Ohashi [1985] is a pioneering attempt in testing this aspect of the problem in Japan.

6. Supposedly workers' feeling that they are fairly treated enhances work incentives in current production, just like the

original efficiency wage hypothesis.

7. Ishida [1976] pp.27-28 lists various means in different time phases by which employers adjust the amount of labor inputs. One of the means used in the early phase of adjustment is to let workers with low intensity.

8. If workers are literally risk averse, then why isn't there a better contract with job security plus short-run wage security with somewhat lowered wages? It appears as if workers distinguish between small risks and big risks. They are risk-neutral with respect to small risks but not with respect to big risks. Small risks are, in effect, prices to pay for insurance against big risks. This idea clearly awaits formalization.

9. As compared with the U. S. where dismissal of "undesirable" workers (except for union activities against which the protection of law extends) is largely left to the will of employers (the term "at will" employees reflect this circumstance, see Stieber and Blackburn [1983]) dismissal of workers in Japan are much more difficult, imposing a high cost on employers. However, this does not imply that dismissals (other than layoffs) never actually happen. Rather, they do occur to a fair extent. Matsuda [1983] (see his p. 191, Table 8.2) reports that during the period of 1974-1980 about 450 to 600 cases each year were brought to the civil courts by discharged employees for reinstatements. Since not every case of discharge by employers comes up to the court

(it should rather be considered rare), we should multiply these numbers by at least several times. Another statistic related to employee discharge is given by Annual Report of Labor Conflicts (Ministry of Labor). In 1982, 126 cases of labor conflicts are registered to have been caused by "objection to dismissal and reinstatement of the dismissed", of which 31 cases involved a strike activity of more than a half day. The occurrence of conflicts are concentrated in small firms, as 79 cases arose in firms with less than one hundred employees. A slightly weaker form of discipline than outright firing is non-promotion or relocation (either geographical or reassignment of job) of workers within a firm, which still provides the wedge between the wealth position of being employed in normal status and the wealth position of being employed in disciplined status. Our model can easily be adapted to explain such a circumstance. (For another and more explicit discussion of promotion as a device to generate work incentives see also Malcomson [1982].)

10. A quotation from Shirai [1983] may be useful here.

"The joint consultation system in Japan serves mainly as a channel for management to inform and consult with labor about the current business status of the enterprise to which they both belong, any problems and their possible solutions, management programs or plans for future investment, plant location or relocation, manpower adjustments required by the introduction of a new technology, and the possible impact of such technologies on employment and working conditions.

Employees are usually very eager to have information on current business conditions of their enterprise and its future prospects, since their employment and income security derive from the viability and competitiveness of that enterprise. Japanese management in general is willing to provide such information to the union through the joint consultation system in order to secure labor-management cooperation and industrial peace." (p. 120)

Although in a different context, Hashimoto [1979, p. 1103] presented a similar argument, stating that low costs of reaching agreements about fluctuating productivities ("low transaction costs") are conducive to setting an environment in which bonus payments are widely used.

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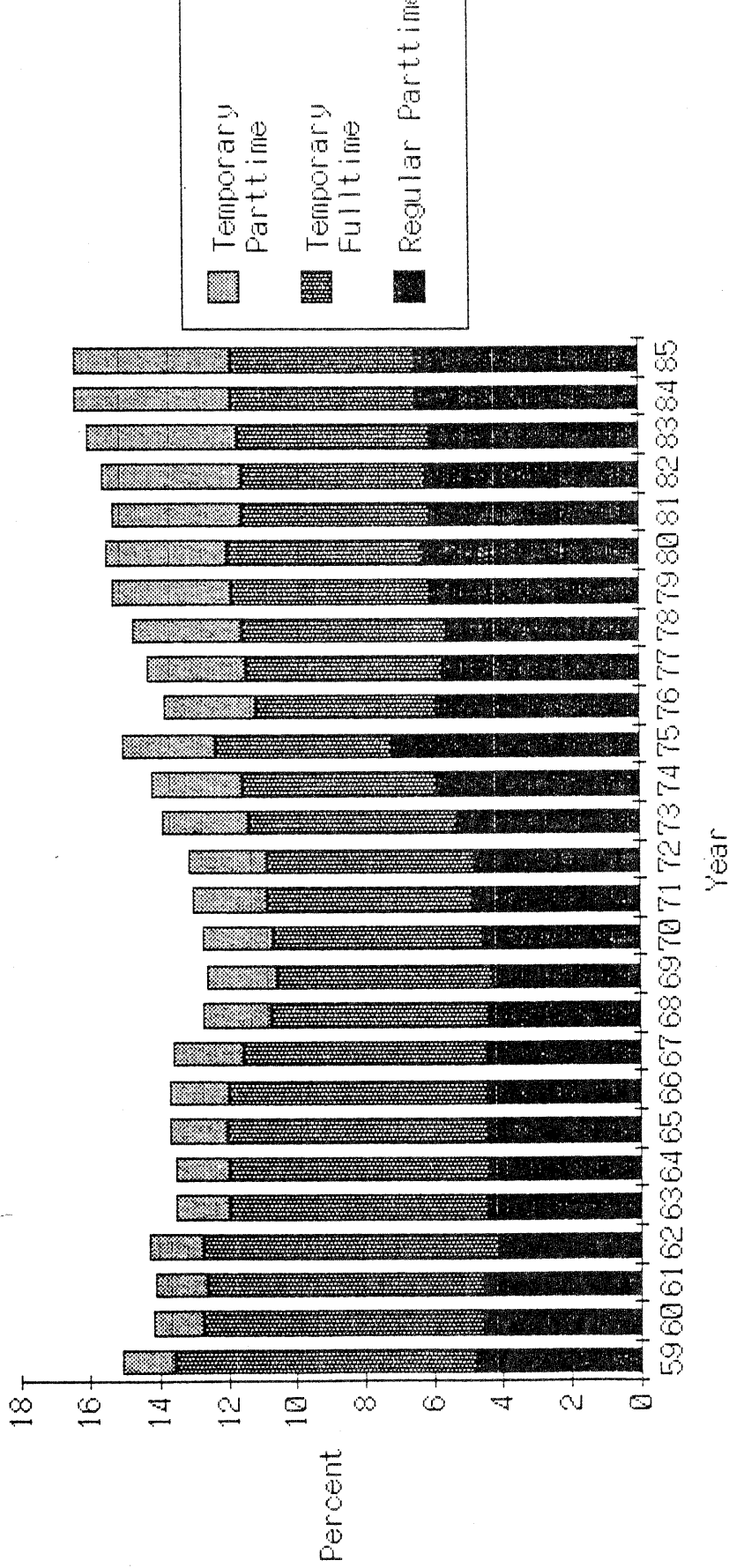
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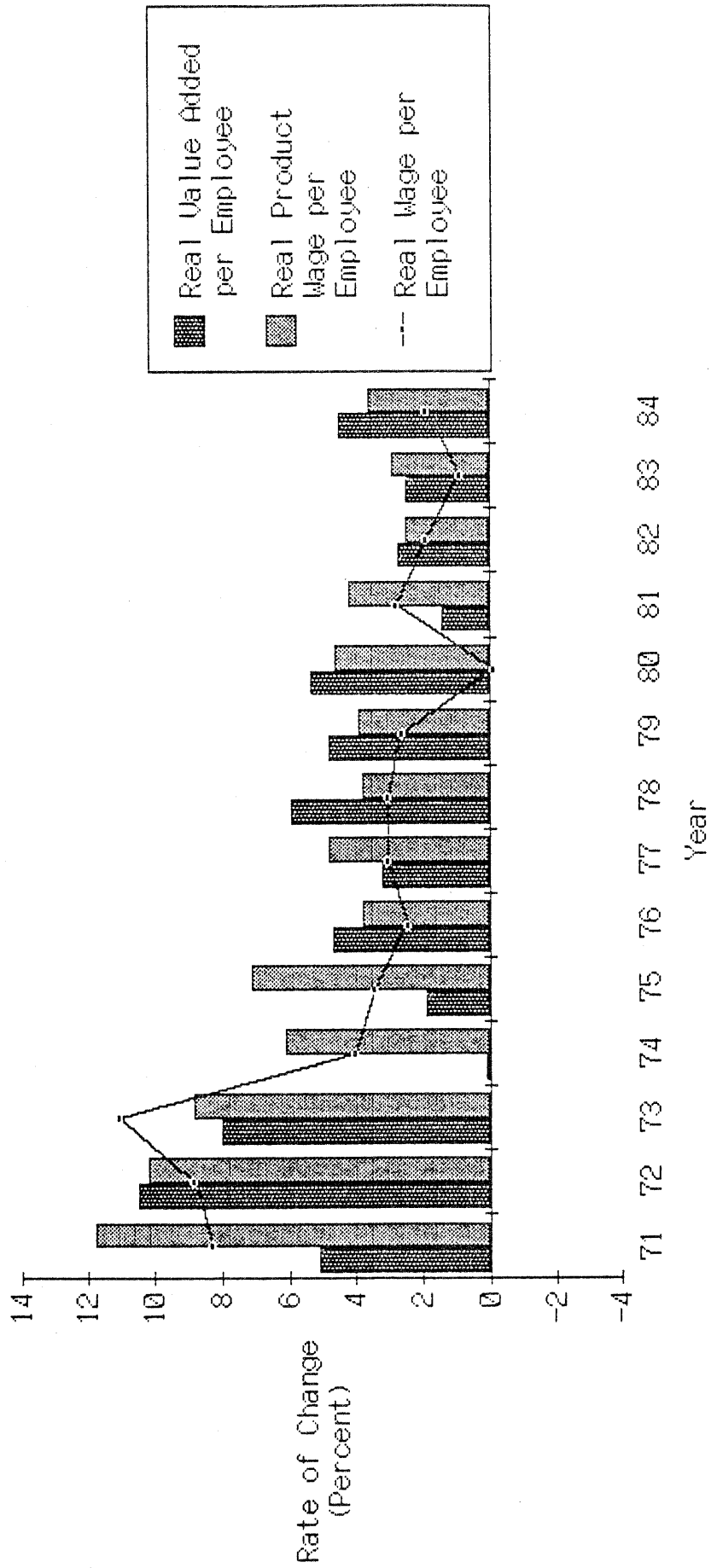
Figure 1: Long-Run Changes in the Composition of Non-Agrarian Workers



Notes: Each category of workers in the figure is defined as follows. "Temporary Workers" refer to the sum of Rinji Yatoi (temporarily employed) (whose contract length is more than a month but less than a year) and Hiyatoi (daily employed) (whose contract length is a day to less than a month). On the other hand, the distinction between "fulltime" and "parttime" is based on a criterion whether the worker works for more than or less than 35 hours per week.

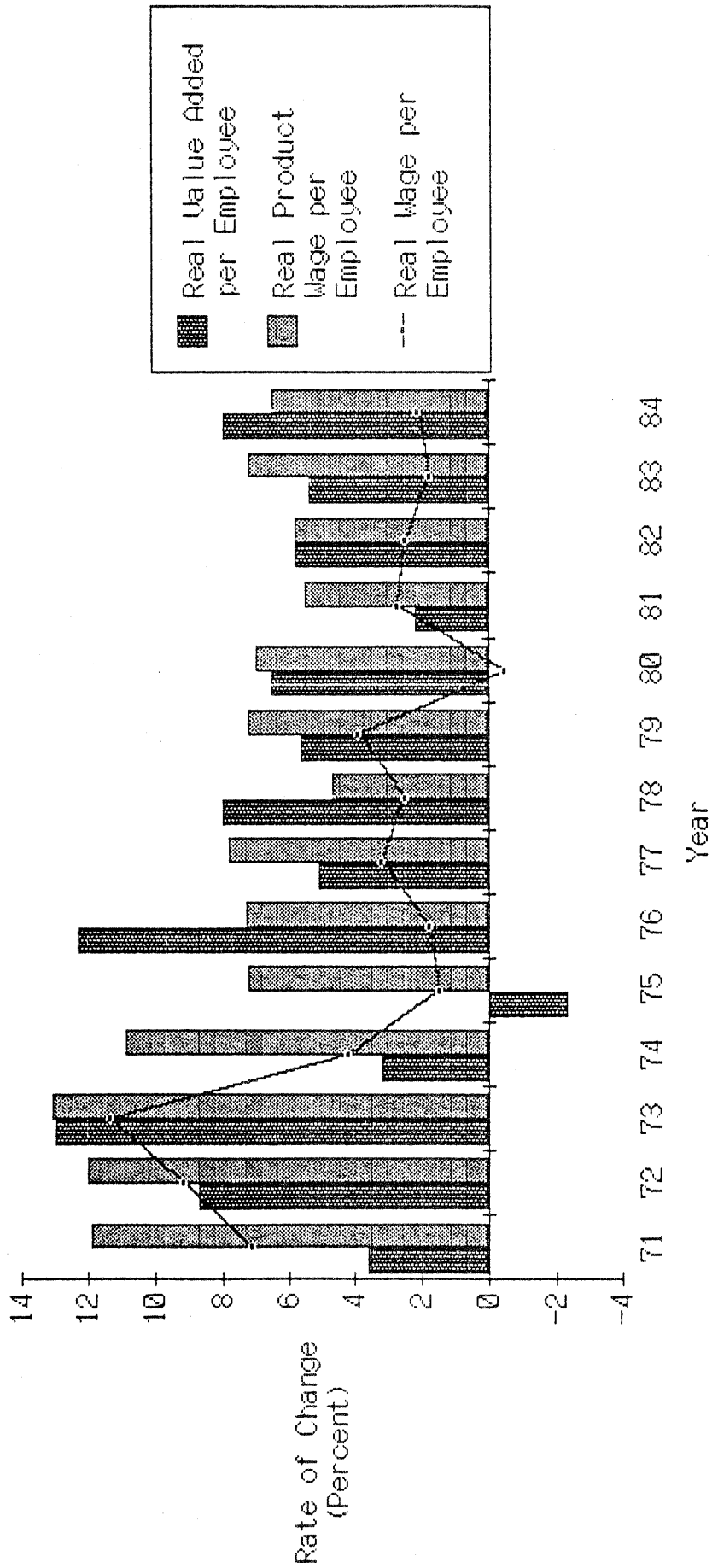
Source: Economic Planning Agency, Gijutsu Kakushin to Koyo (Technological Change and Employment), Table 3-2-4, p. 132-4, 1986, which are, in turn, based on Ministry of Labor, Rodoryoku Chosa (Labor Force Survey), each year.

Figure 2: Labor Productivity and Real Product Wages
All Private Industries



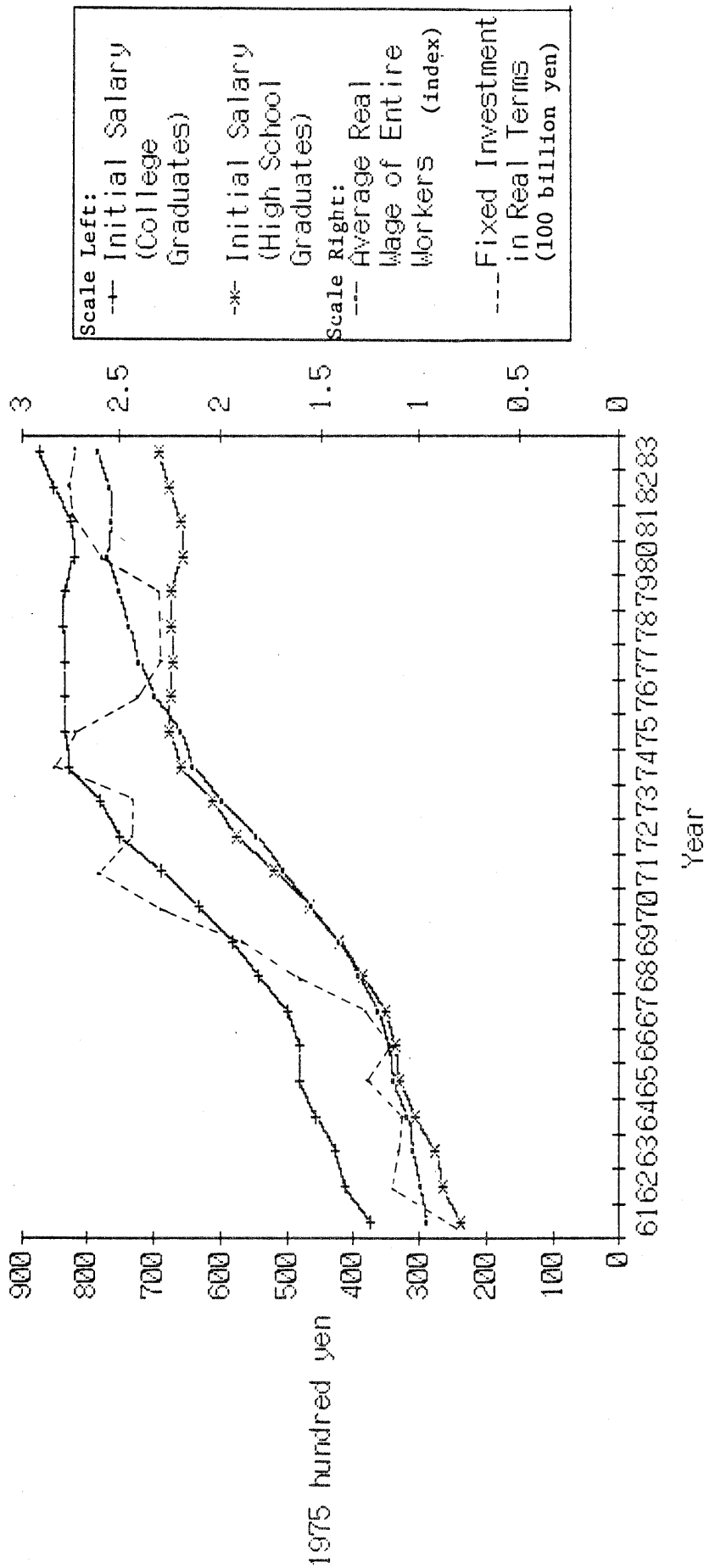
Source: Economic Planning Agency: System of National Accounts, 1985, 1986.

Figure 2: Labor Productivity and Real Product Wages
Manufacturing Industry



Source: Economic Planning Agency: System of National Accounts, 1985, 1986.

Figure 3: Starting Monthly Salary of Workers in Real Terms, by Education



Source: For starting salaries by educational levels, Jinji-in (National Personnel Authority); Shoninkyu Chosa, each year; For average wage of regular workers, Ministry of Labor, Wage Census, each year, and for fixed investment figures and deflators, Economic Planning Agency; System of National Accounts.