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Has the Phillips curve lost its validity?

Outlook for the Labor Market: The Big Picture

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Summary

- Japan's labor market is moving into a new phase. While the decline in working-age population as such began sometime during the middle of the 1990s, the shortage of manpower only became evident around 2010 as a result of progress in the hollowing out effect. But now corporations have begun to seek out a cheap underutilized labor force as a result of the relative decline in unit labor cost. Until now, the majority of this market was accounted for by women part-time workers. Over the past few years, the labor participation rate of women has improved considerably, centering on the age-range of 30 to 50, and it is difficult to hold down a head count any larger than this. As a result, corporations are now taking new approaches to acquiring more workers. These are (1) changing the status of non-regular employees to that of regular employee as a means of extending average work hours, and (2) using the underutilized work force, which includes younger workers, the elderly, and foreigners.
- While the shortage of manpower deepens, the average wage does not rise, which leads some to question the validity of the Phillips curve. However, if we look at wage growth according to the Phillips curve and perform a breakdown by age-group, we find that in current-day Japan, the Phillips curve is still valid. The essential problem is that the labor market is tight only in the younger age range, while the figure for the middle-aged slacks off considerably. In other words, a "generational mismatch" has occurred between the profile of human resources being sought (demand for labor) and the labor supply. The current condition of Japan's labor market is represented by the fact that wage inflation and deflation is partially mixed.

The shortage of manpower (or labor shortage) is a term which became common sometime after 2010, but now, after a number of years have gone by, we can see that the decline in working-age population began much earlier, sometime around the middle of the 1990s. This came to be called by the name “labor shortage” after more than twenty years passed, and most attempts to explain the labor shortage, strangely enough, base their arguments on the decline in working-age population.

On the other hand, though it is called a labor shortage, the number of employees in Japan (as shown in Chart 1) has continued to grow against all expectations. Meanwhile, the unemployment rate has fallen to just over 2%. In addition to the labor shortage, another term we hear is “full employment”, and yet the growth rate in wages is sluggish. It would be inappropriate to come up with an outlook for Japan’s labor market at this point without properly dealing with the paradoxes of the past. In fact, it would be harmful.

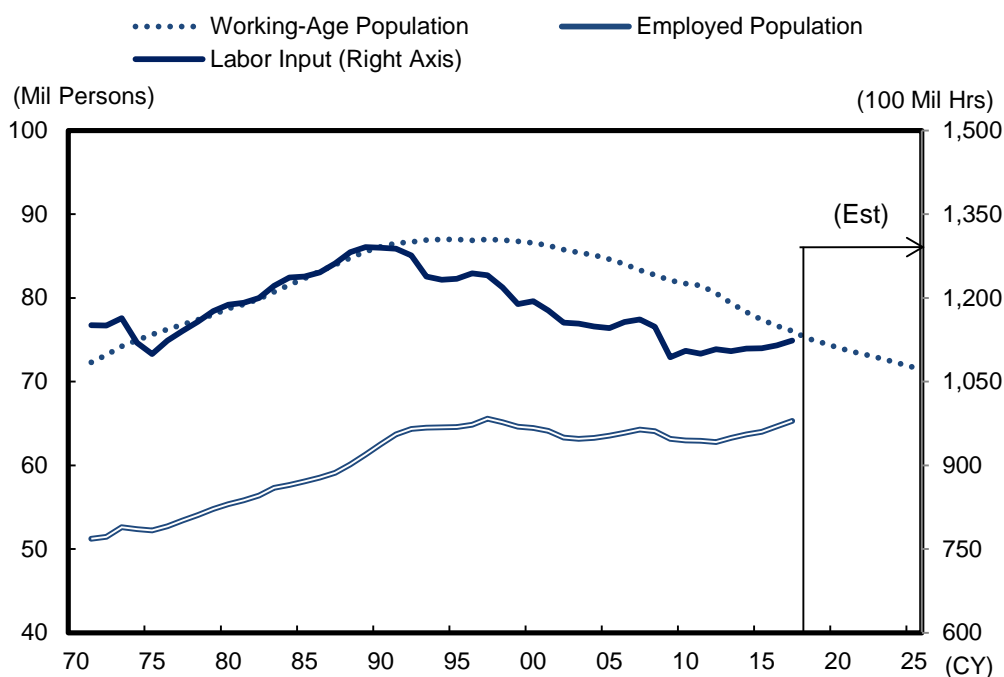
In this report we perform an analysis of Japan’s labor market from a broad perspective, taking a look at the big picture in laying the foundations for a constructive argument.

Japan’s “lost twenty-years” (1990 – 2010) were a loss for domestic employment

First of all, taking another look at Chart 1, we can get a sense of the long-term development in Japan’s labor market. Working-age population and total labor input pretty much move in tandem with each other. However, around 1990 correlation between the two breaks down, and for twenty years lasting until 2010, the rate of divergence spreads like an alligator gap.

Throughout this period gross domestic product remained flat. We could also view this phenomenon as an improvement in productivity per labor input. On the other hand, time-based employment was lost at a rate exceeding that of the decline in working-age population. Assessments of the period differ depending on which one of these phenomena one focuses on the most.

Structure of Japan’s Labor Market: Long-Term Changes **Chart 1**



Source: Ministry of Health, Labour and Welfare, National Institute of Population and Social Security Research; compiled by DIR.

Over a period of twenty-years of stagnation, Japan returned to the state of a “not expensive country” (which is nearly equal to being poor) around 2010

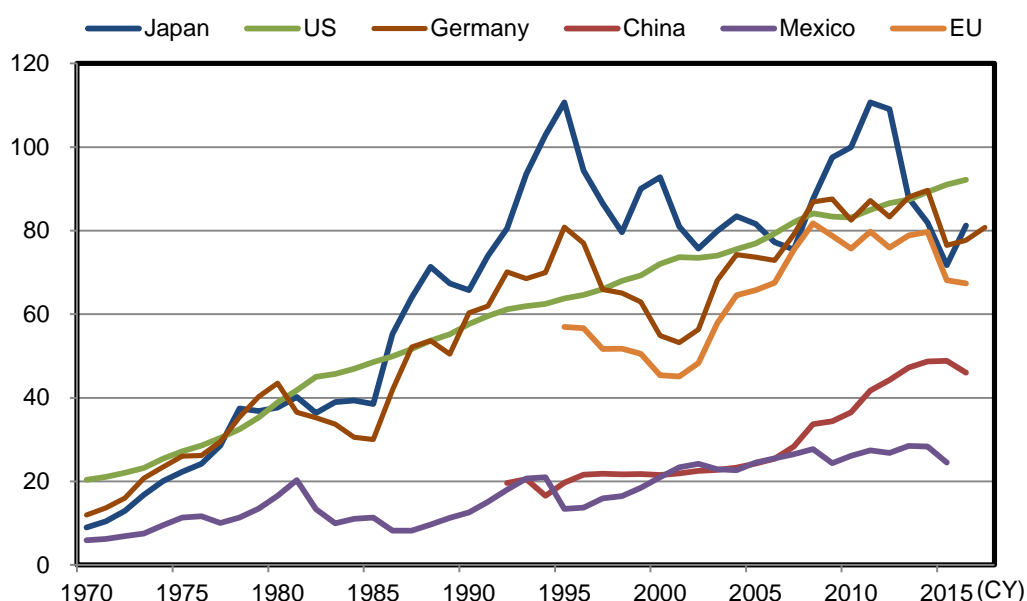
But the true nature of the phenomena occurring during this period is something else altogether – in fact, it is the hollowing out effect. As is shown in Chart 2, Japan’s unit labor cost¹ exceeded that of the US and Germany during the latter 1980s as a result of the strong yen which ensued after the Plaza Accord. After Japan’s economic bubble burst around 1990, its nominal growth rate fell significantly (in other words productivity declined), but this was not offset by a sufficient decline in the nominal wage (downward rigidity of wages). Hence wages were high in comparison to productivity, much more so than other advanced nations. This caused Japan’s international competitiveness to fall significantly. Then, after the 1990s, China, leading the other Asian economies, sped up its entry into trade with the emerging nations of Asia. Japan’s domestic manufacturing of goods which had become difficult to differentiate from other makers lost its competitiveness to the point of hopelessness from the viewpoint of the cost of labor.

The result was the hollowing out effect – the rate of job losses exceeded the decline in working-age population. Looked at from yet another point of view, Japan’s productivity improved as a result of having abandoned areas of business which were relatively unproductive.

Then Japan’s unit labor cost was no longer higher than the US and Germany. This is due not only to the weak yen effect in recent years, but to the fact that wages did not grow at all during Japan’s lost twenty-years (meanwhile wages continued to rise in other countries). This has gradually neared the level it would need to be to realistically compete with China². (It also means that Japan has become relatively poor.)

Unit Labor Cost of Japan, US, Germany, and Major Competing Nations

Chart 2



Source: OECD; compiled by DIR.

Note: Calculated on a dollar basis assuming Japan’s unit labor cost to be at 100 as of 2010.

¹ Unit labor cost = total labor compensation ÷ gross production. To put it in simpler terms, it is a comparison of the cost of labor required to produce one television or one car. The higher the index goes, the lower a country’s international competitiveness is.

² If an estimate is made of the unit labor cost based only on trade goods, the divergence between China and Japan has pretty much been resolved since 2015. For details on this point, see “Japan’s Economy: Monthly Outlook (Jan 2018): No wage increase without restructuring / “Race to the bottom” hinders virtuous circle based on domestic demand”, by Shunsuke Kobayashi (The DIR report, January 29, 2018).

Japanese corporations since 2010 after having taken advantage of cheap labor through the social advancement of women

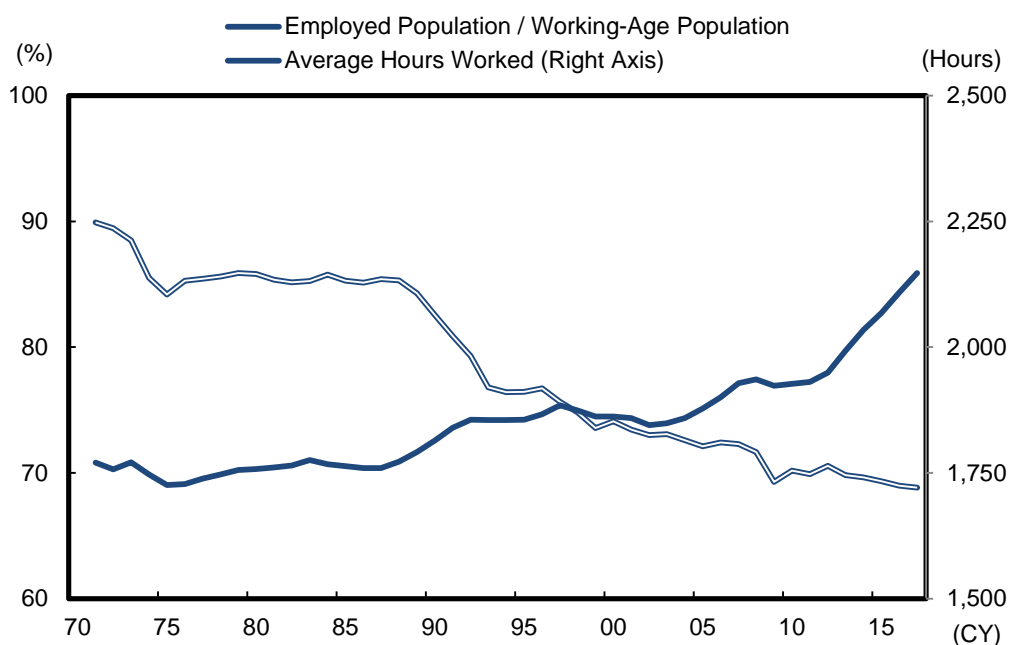
The loss of domestic jobs associated with the hollowing out effect eased off a bit after 2010, and the rate of divergence between working-age population and total labor input began to decrease. Then once into 2018, these two factors regained correlation for the first time in thirty-years. This is why there is a very good possibility that whatever happens in the future in the labor market may be quite different from what has happened before.

However, before approaching our outlook for the future, we need to take a look back on the developments which have occurred since 2010. During this period of time the working-age population declined, while total labor input was on the rise. A factor analysis of this situation is shown in Chart 3, which suggests that this is due to employed population/working-age population. Growth in the employed population is due especially to the increase in the number of women and elderly who have become employed. But since a large number of women are part-timers or non-regular employees with relatively short work-hours, hence average hours worked has continued to decline.

Furthermore, women's salaries are relatively low, and workers' rights as guaranteed by Japan's labor laws are few for these workers. It is therefore easy to see why this provided corporations with a supply of labor that is easy to use. Moreover, a large number of women have been forced to work under disadvantageous conditions in comparison to regular employees for whom lifetime employment makes them a privileged caste with vested interests. For this reason, women non-regular employees have been more exposed to the effects of intermittent recessions and the increase in the age at which pensions are rewarded. Hidden behind the veil of the increasing social advancement of women lies the suppression of average work-hours and average wage, which continues to this day.

Long-Term Change in Japan's Employment Rate and Average Hours Worked

Chart 3



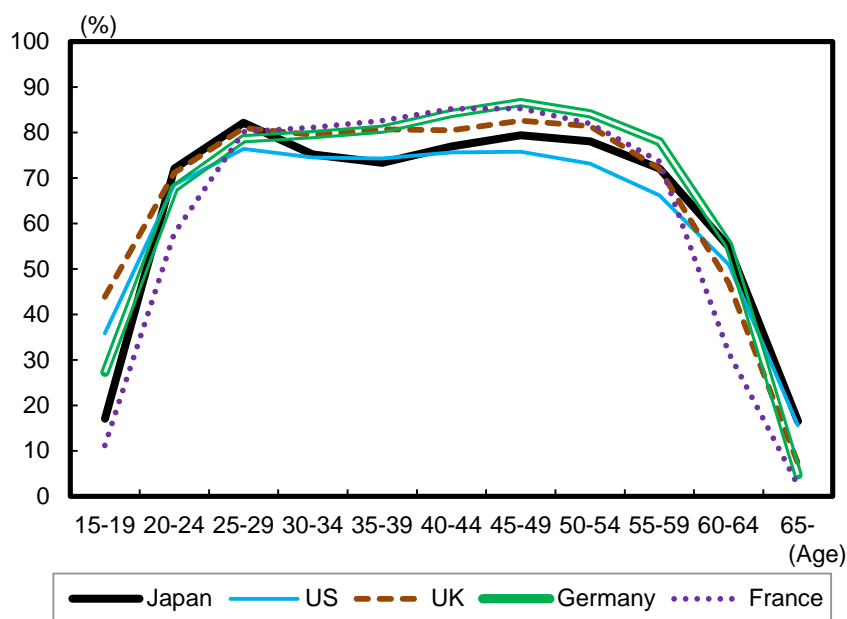
Source: Ministry of Internal Affairs and Communications, Ministry of Health, Labour and Welfare; compiled by DIR.

Resolving the problem of the M-shaped curve has brought improvement of Japan's labor participation rate to the limit

However, as was mentioned in the previous section, there is a very good possibility that whatever happens in the future in the labor market may be quite different from what has happened before. First of all, it is now difficult to expect sustained growth in the labor participation rate. The M-shaped curve has now reached the same level as that seen in the US due to growth in women's labor force participation over the past several years. This means that there is little room left for further growth. Meanwhile, the active job openings-to-applicants ratio for part-time workers has now reached an unprecedented level. It has now become extremely difficult for Japanese corporations to increase the number of people it has working as part-timers.

International Comparison of Women's Labor Force Participation Rate (2017)

Chart 4



Source: OECD; compiled by DIR.

Alternative Strategy (1): Increase Average Hours Worked

Since it is difficult to hold down a head count any larger than this, corporations are now being forced to handle the issue of shortage of labor in other ways, such as extending average hours worked per employee. However, this brings up a whole host of other problems which they must face.

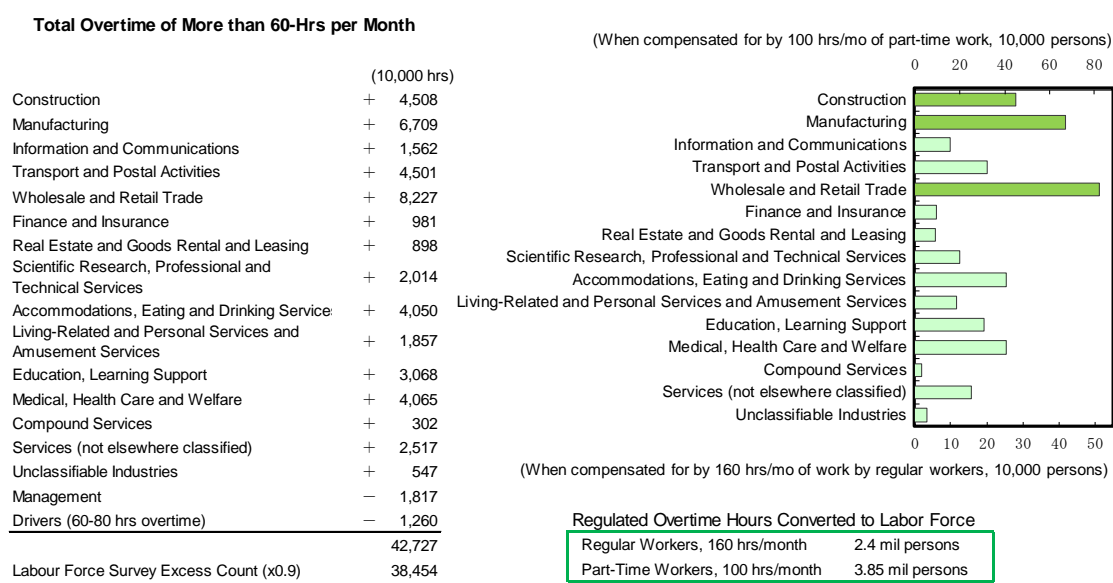
Alternative Strategy (1)-1: Increase overtime hours of existing regular employees (this idea has been frustrated by new regulations³)

First of all, it would be difficult at this time to try increasing the overtime hours of existing regular employees. According to the new ruling which has been introduced in order to resolve the problem of overwork (Regulation with Penalties on the Limitation of Number of Overtime Hours Worked), the maximum number of overtime hours allowable will be 45 hours per month or 360 hours per year (this may be revised to 720 hours per year pending agreement between labor and management). DIR estimates that total overtime hours of around four billion hours per year will be cut as a result of the new ruling.

³ If the scope of the discretionary labor system is further expanded (in other words if unpaid overtime is legalized) this would mean that corporations can work their regular employees as much as they want, and the contents of this section will be nullified.

Moreover, the idea of making use of unpaid overtime (off-the-clock work performed by workers), being that it has been rampant in the past, may also end in failure. Based on the responses of workers on a labor force survey regarding working hours, we see that unpaid overtime (found by subtracting the responses of corporations regarding working hours on the Monthly Labor Survey) has actually been on the decline sometime after 2010 (Chart 6). With the shortage of labor becoming more serious, Japanese employees have become more self-confident than in past years, so that companies attempting to exploit workers may find their bad reputation spread rapidly on social networks and other modern means of communication⁴. There have even been cases where a company has been forced to cease operations. Meanwhile, with corporate earnings in favorable condition, there are few corporations willing to take the legal risk that would be involved in forcing employees to put in overtime without pay rather than cutting costs.

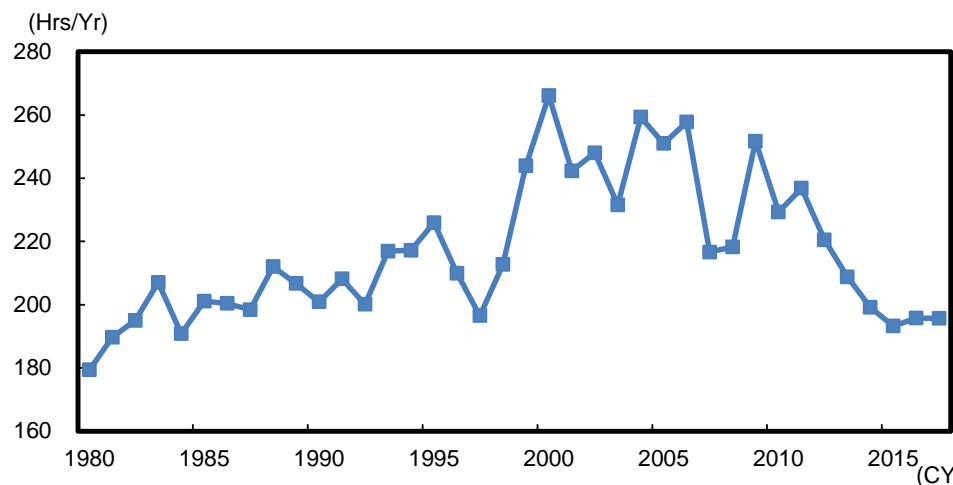
Estimated Effects of Overtime Regulations **Chart 5**



Overtime Pay -8.5 tril yen/yr = Downward Pressure of 3% on Employee Compensation

Source: Ministry of Internal Affairs and Communications, Ministry of Health, Labour and Welfare; compiled by DIR.
 Note: The term "Management" refers to all jobs with a managerial function. The term "Drivers" includes operation of all kinds of transport equipment and machinery. This includes the operation of trains and airplanes. According to labor force surveys, there is a chance that in the case of many of these jobs, unpaid overtime and break time may in some cases be counted as work time. Therefore 10% is subtracted from the estimate with reference to the difference between the labor force survey and the monthly labor survey.

Estimate of Unpaid (Voluntary) Overtime **Chart 6**



Source: Ministry of Internal Affairs and Communications, Ministry of Health, Labour and Welfare; compiled by DIR.

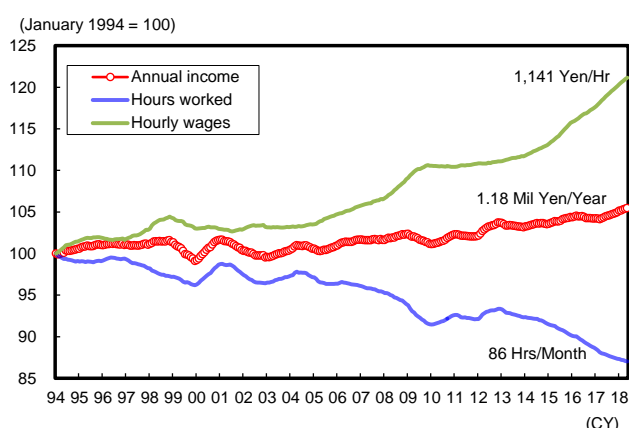
⁴ Social networks are such a ubiquitous part of life these days, even the President of the United States announces important policies and personnel decisions on social networks .

Alternative Strategy (1)-2: Increase work hours of part-timers and non-regular employees by changing status to that of regular workers

Getting part-timers and non-regular employees to work longer hours could also be tricky business. This is because of what is referred to in Japan as “the 1.3 million yen wall”. This is the maximum annual income a married woman can make and still be eligible for the marital deduction on Japan’s income tax. Most corporations also place the maximum level of a woman’s income for spouse allowance eligibility somewhere between 1.03 and 1.5 million yen, and the same standard is used for eligibility for social insurance provided to employees by corporations. These standards give part-time workers in Japan the incentive to keep their annual earnings at a certain level. Annual income for part-timers in Japan has in fact remained unchanged at around the above mentioned level for more than twenty-years. And yet during this same twenty-year time period the hourly wage of part-timers has grown by 20%. And for the same reason, work hours per employee for part-timers has declined, thereby offsetting whatever gains have been made in terms of hourly wage.

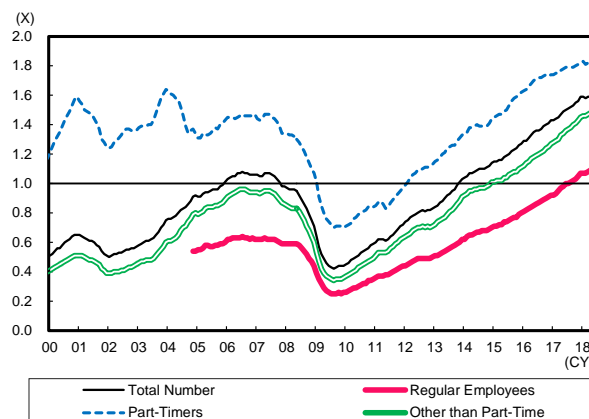
In a similar vein, increasing the number of part-time employees does not result in increasing work-time per employee. Hence Japanese corporations, taking a somewhat passive approach, have begun to increase the number of regular employees. The active job openings-to-applicants ratio for regular workers has continued to grow gradually, with the figure exceeding the 1x level as of June 2017, and it has continued to grow since then.

Employment Status of Part-Time Workers Chart 7



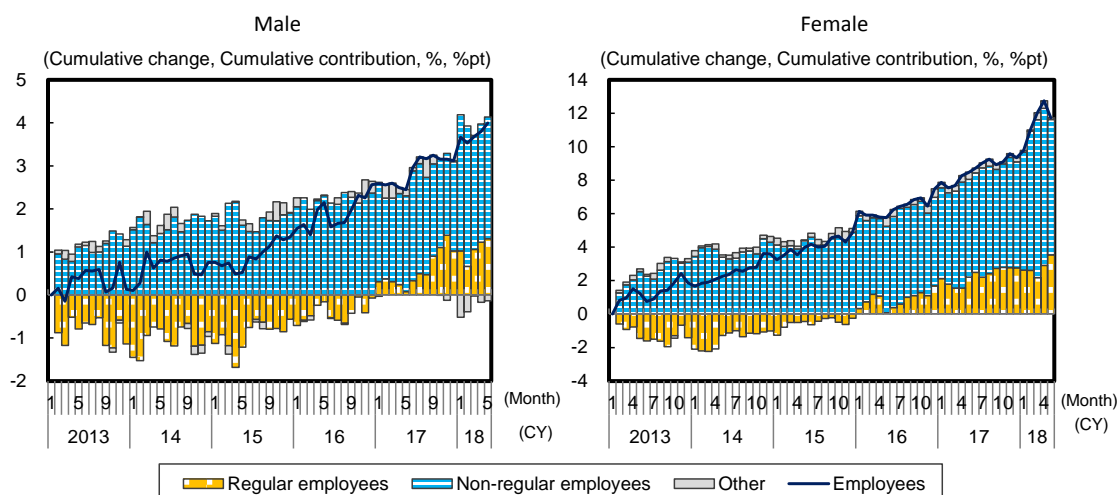
Source: Ministry of Health, Labour and Welfare; compiled by DIR.
Note: 12-month cumulative value / moving average value.

Active Job Openings-to-Applicants Ratio by Type of Employment Chart 8



Source: Ministry of Health, Labour and Welfare; compiled by DIR.
Note: Values are seasonally adjusted.

Factor Analysis of Employed Population Chart 9



Source: Ministry of Internal Affairs and Communications; compiled by DIR.
Note: Seasonally adjusted by DIR.

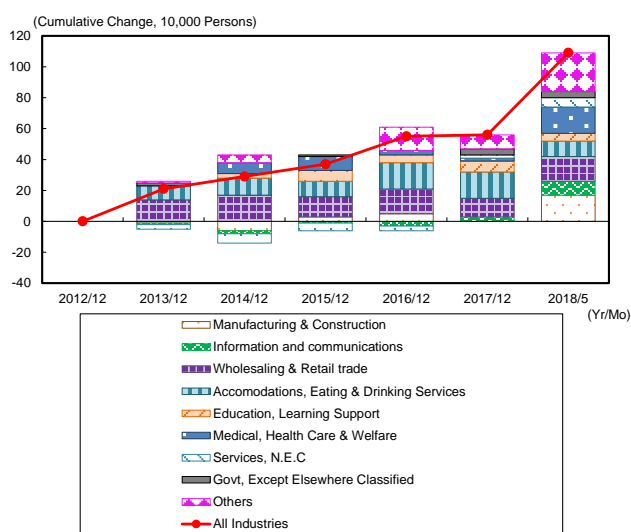
Alternative Strategy (2): Utilizing people falling outside the M-shaped curve

In recent months a new development has been observed. This is the discovery of a potential supply of labor in completely different groups than have been utilized until this time. As is shown in Chart 10 and 11, the employed population in the 15-24 age group and the 65 and over age group, both of which had exhibited low labor participation rates in the past (in other words, these groups were located outside the slope of the M-curve), is now beginning to grow dramatically in the area of non-regular employment.

The industry which accounts for the majority of this new activity is the service industry, which is known for being labor-intensive. It appears that the service industry has been able to discover this new source of labor not only because of an improved employment environment with direct improvements such as salary hikes, but also improvements in the indirect employment environment, such as the ability to choose one’s own work hours. At the same time, the service industry has also increased its utilization of foreigners.

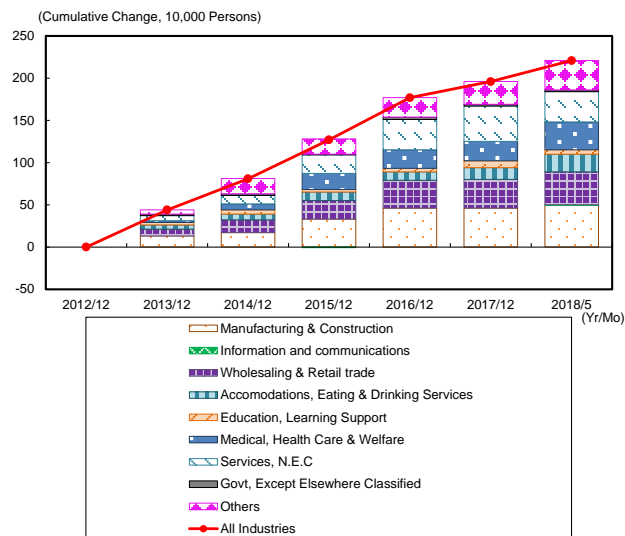
With the above development as the basis of our argument, we can now conclude that there is a possibility that the labor market can offset the shortage of manpower by going to new sources, such as changing the status of non-regular employees centering on women to that of regular employees, taking in young people and the elderly for short-term employment, and utilizing foreign workers.

Number of Employees in the 15-24 Age Group by Industry (Change over Time)
Chart 10



Source: Ministry of Internal Affairs and Communications; compiled by DIR.
Note: Increase after December 2012 is cumulative.

Number of Employees in the 65 and Over Age Group by Industry (Change over Time)
Chart 11



Source: Ministry of Internal Affairs and Communications; compiled by DIR.
Note: Increase after December 2012 is cumulative.

Flattening Wage Curve instead of labor costs grew partially for women and young people

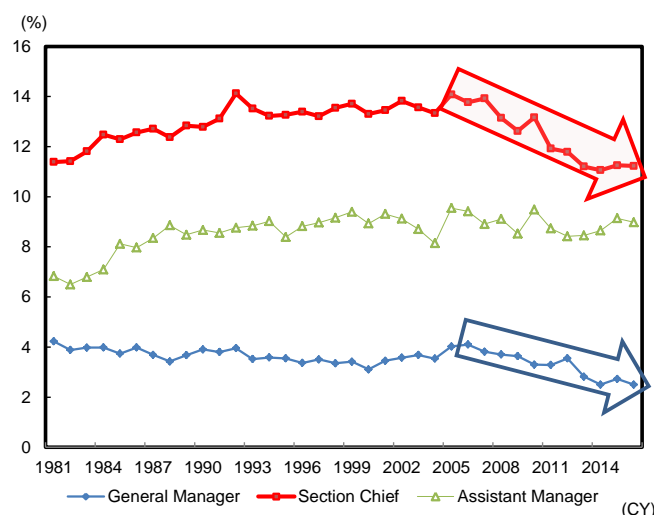
On the other hand, during this same transitional period, while labor costs grew partially for women and young people, this growth was offset by the tendency of Japanese corporations to prioritize the slowing down of salary increases, and the flattening of the wage curve. This very well may have kept down the wages of existing regular employees.

Chart 12 shows the wage curve amongst Japanese workers by birth year. The data confirms that the tendency to flatten the wage curve continues – while starting salaries have been raised over the years, the salaries of middle-aged regular employees have been forced downwards.

Chart 13 shows the flattening of the wage curve from a different angle. The tendency mentioned at the beginning of this section started during the latter part of the 2000's when the percentage of workers in their 40s moving into general manager and section chief positions began to decline. This decline has continued since that time. We can see the same tendency amongst workers in their 50s. In other words, the data suggests that corporations may have developed the tendency to delay advancement of workers in their 40s and 50s to management positions, while at the same time cutting back on the number of employees who are promoted.

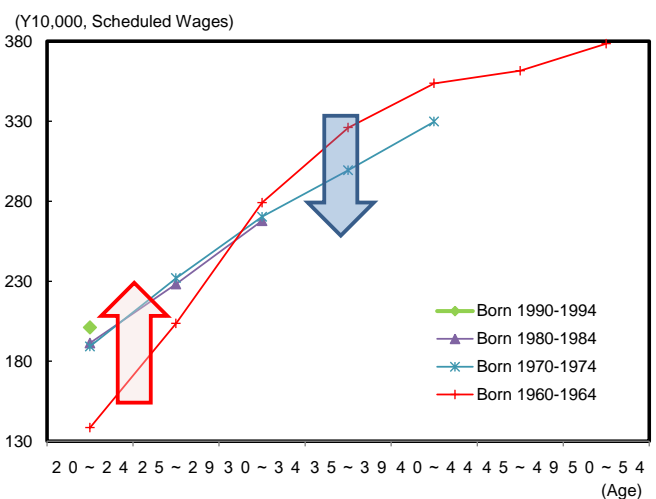
Workers in their 40s are members of Japan's second baby boom generation, while those in their 50s started their careers during Japan's bubble economy, hence these two groups account for a large portion of a corporation's overall personnel expenses. We can see here how corporations are attempting to cut back on personnel expenses by focusing on employees in the volume zone and delaying their promotion.

Proportion of Workers in their 40s in Managerial Positions Chart 12



Source: Ministry of Health, Labour and Welfare; compiled by DIR.

Wage Curve by Birth Year and Age Group Chart 13



Source: Ministry of Health, Labour and Welfare; compiled by DIR.

Has the Phillips curve lost its validity?

To sum up the arguments of the previous section, Japan has reached a new stage in the severity of its labor shortage problem. As a result, growth in wages can be observed in some statistical cohorts. However, as a result of having their regular salary increases suppressed, middle-aged men are finding that the growth rate in their salaries is extremely moderate in comparison to the overall trend despite the fact that the labor market has become increasingly tight.

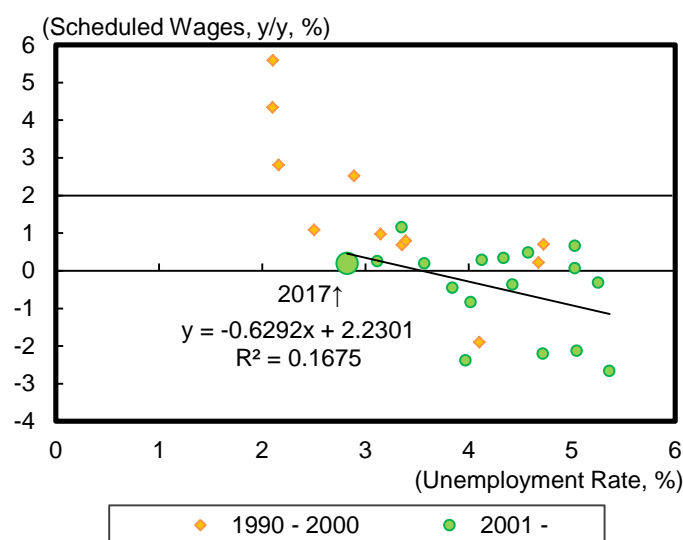
One of the more extreme arguments claims that this fact proves how the Phillips curve is no longer functioning normally, but this is jumping to conclusions. As is shown in Chart 15, when we perform a breakdown of the Phillips curve by decade, we find that its effectiveness is alive and well, even in the Japan of today. The problem is that the labor market is tight only in the younger age range, while the figure for the middle-aged slacks off considerably. In other words, a “generational mismatch” has occurred between the profile of human resources being sought (demand for labor) and the labor supply (the annual salary demanded by workers).

To clearly summarize the reasoning behind the claim that the Phillips curve has become dysfunctional, one can say that in its use in Japan there is room for argument on three points: (1) intercepts (which indicate the growth rate of wages in the natural rate of unemployment), (2) the slope, and (3) the X-axis.

First of all, intercepts are formed by adaptive expectations, and are hence historically dependent, and restoration can take time (the hysteresis effect). Moreover, as long as the flattening of the wage curve persists (reduction of regular salary increases), the expectations of individuals faced with a wage hike will remain low. One of the other factors making up the intercept is the growth rate in labor productivity, and this factor does not rise or fall much in the short-term.

The Phillips Curve: Japanese Wages

Chart 14



Source: Ministry of Health, Labour and Welfare, Ministry of Internal Affairs and Communications; compiled by DIR.

Next is (2) the slope, which is a difficult subject to ignore due to the influence of international competition. As was mentioned earlier, this same factor exerted overwhelming influence between the latter part of the 1980s until around 2010. The generation which started its career during the latter part of the 1980s has gotten the hot-cold treatment from corporations. In great demand when they first entered the company, they are no longer wanted. The problem is that the skill set needed in today’s business world is different than what was needed when this generation first went to work.

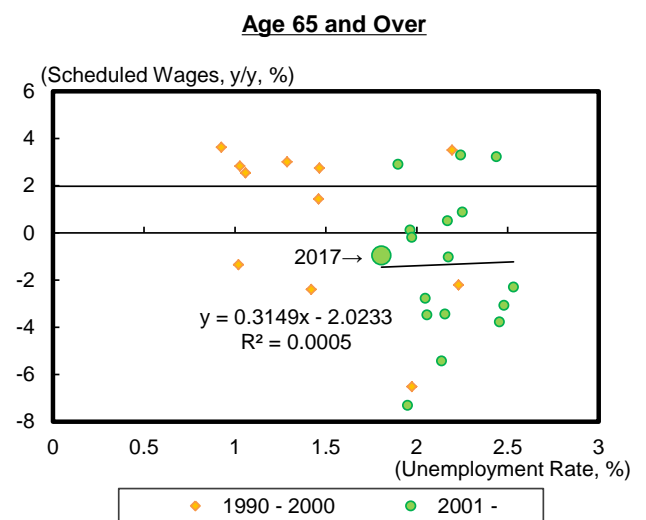
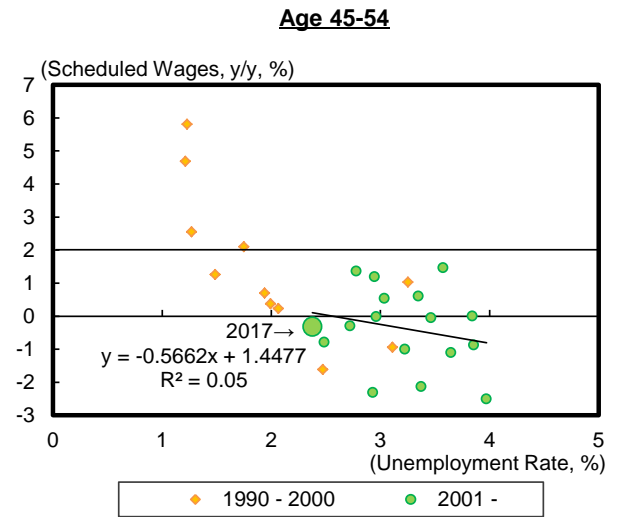
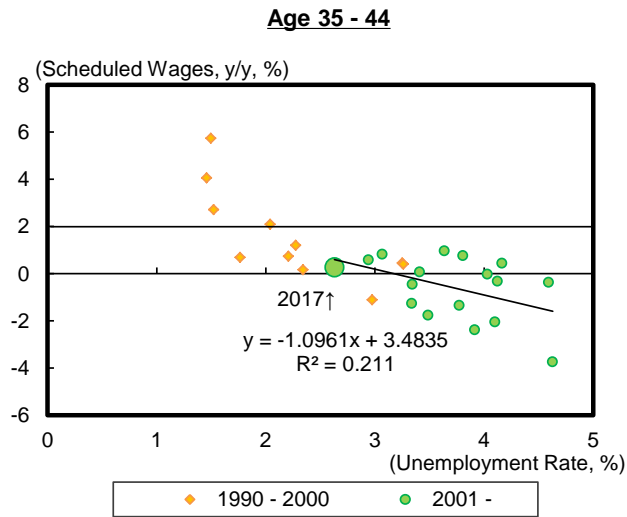
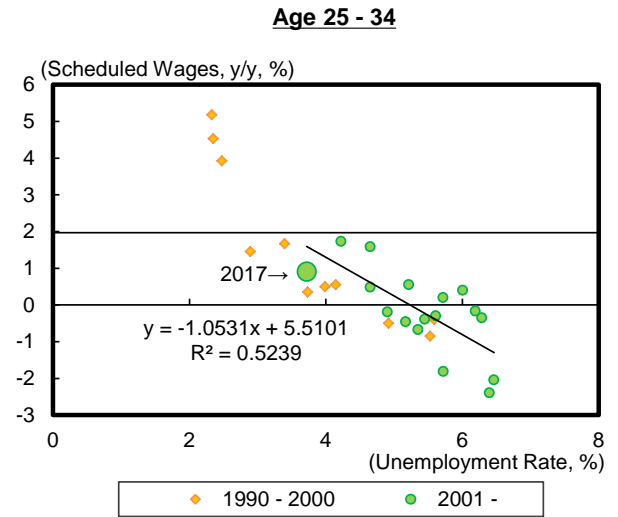
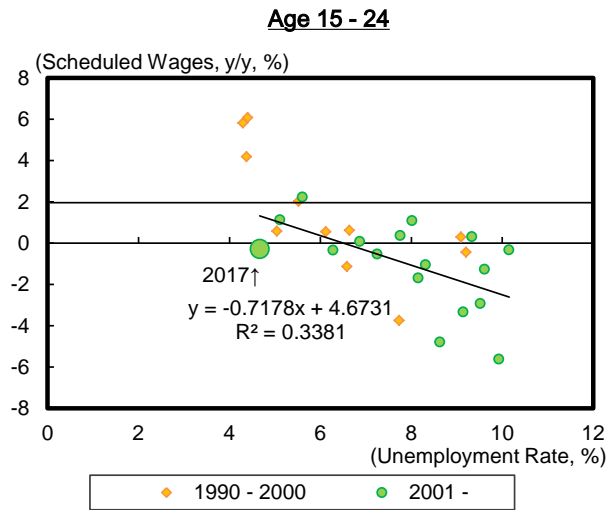
Our last factor is (3) the X-axis. This represents the unemployment rate, and the debate is endless regarding this issue. From the start, the validity of data regarding the unemployment rate is questionable. As was mentioned previously, the labor force participation rate has improved considerably in Japan in recent years. In other words, since potential labor supply is not included in the calculation of the unemployment rate, it is difficult to say that there is not much slack in the labor market simply because the unemployment rate is low. This argument holds not only for women, young people, and the elderly, but for another group which should not be ignored – that is the generation which gave up on looking for a job during the “employment ice age” that began during the late 1990s and has been in standby mode outside the labor market ever since⁵.

Meanwhile, exactly what the natural rate of unemployment ought to be remains an unknown factor. First there is the approach to calculating the natural rate of unemployment. If we stick with the argument that it should be the unemployment rate, which is the point where wage deflation and inflation diverge (in other words NAIRU – the non-accelerating inflation rate of unemployment), then all of the calculations based on performance values over the past twenty-years are completely meaningless. And of course, growth in wages has not been confirmed over the past twenty-years. Hence we must assume that the unemployment rate during this same time has actually exceeded NAIRU all this time. Finally, it was the first half of the 1990s when growth in wages was observed in Japan, and the unemployment rate was somewhere in the middle of the 2% level. But it is also possible that frictional unemployment declined in terms of social structure during this time.

To summarize the above arguments, perhaps the following tentative conclusion would be the most appropriate. There is not much of a chance that the situations surrounding factors (1) intercepts and (2) the slope will improve dramatically in the short-term. As for (3) the X-axis, the situation differs for different age groups. Chances are very good that the Phillips curve is beginning to work for the younger generation. On the other hand, for middle-aged and older people, it is possible that the natural rate of unemployment has not yet been reached. In order for all age groups to achieve wage inflation, it will first be necessary for the unemployment rate for the middle-aged and older age groups to decline (or more workers in these age groups will have to leave the labor market).

⁵ The situation in the US is even worse. For further detail, see the report mentioned in Note 2.

The Phillips Curve: Japanese Wages by Age-Group Chart 15



Source: Ministry of Health, Labour and Welfare, Ministry of Internal Affairs and Communications; compiled by DIR.