

Chapter 5 The Impact of New Economy on Female Labor Force Participation

The fact that the economy has become more knowledge-based than ever before is also influencing female labor force participation. The impact of the knowledge-based economy on female labor force will be discussed in this chapter. At the same time, development of atypical work is prosperous in the new economy. The atypical employment, such as telecommuting, part-time work, and dispatched work, are more flexible than the traditional work.¹⁵¹⁶ Since females are the dominant employees in part-time and dispatched work, advantages and disadvantages of part-time and dispatched work are discussed here.

5.1 Knowledge-based Economy and Female Labor Force Participation

Successful development of the knowledge-based economy in United States has affected other countries, such as member countries of the European Union, OECD, and APEC, all of whom have promoted knowledge-based economies.¹⁷ These governments expect to enhance economic growth rates and competitiveness, and lower unemployment rates. In this section, the development of knowledge-based economy is first introduced. Then, the influence from knowledge-based economy to female labor force participation is analyzed.

5.1.1 Knowledge-based Economy

¹⁵ Atypical employment, which is different from traditional pattern of employment, is also called non-standard employment or contingent employment.

¹⁶ Telecommuting is a work arrangement in which employees have more flexibility in working location and time. Instead of commuting to the center place of work daily; the employees can work through telecommunication links.

¹⁷ Asia-Pacific Economic Cooperation (APEC) is a forum for facilitating the regional economy, cooperation, trade and investment in the Asia-Pacific region.

According to the definition of OECD (1996), knowledge-based economies are directly based on the production, distribution, and use of knowledge and information. In 2000, OECD and World Bank redefined knowledge-based economies from the viewpoint of effectively using knowledge, and stressed the importance of applying knowledge as the factor of production. According to the new definition, a knowledge-based economy is the economic pattern which views the accumulation of human capital and knowledge as the main factors of production. And, it is the economy which is mainly driven by knowledge-intensive industries. In simple words, knowledge has become an important factor for economic development and growth. Therefore, knowledge leads people to paying attention to the role of information, technology, and learning in economic performance.

As an element of investment and production, the importance of knowledge in contemporary economies has exceeded other factors, such as land and capital. And different from other factors, knowledge has been considered as non-rival and non-exclusive. In other words, it means that knowledge is not as scarce as other resources, and could be recognized as one of quasi-public goods. Moreover, products of knowledge-intensive industries are different from the general standardized products; most of them are not standardized and some of them are formless and weightless. Furthermore, the creation and communication of knowledge are influenced by personal or societal knowledge stocks (Liu and Dong, 2001). Development of information, communication and technologies, the key indicator used to measure the degree of an economy being a knowledge-based economy, also tells the importance of knowledge creation, transformation, and value-addition.

When getting transformed into knowledge-based economies, OECD economies experienced huge investment in high-technologies, growing high-technology industries, and increase of highly skilled labors. OECD has paid much attention to development of

knowledge-based economy, and APEC too has recognized the importance of knowledge-based economy to the future and is largely promoting it. Huge investments in technology, research, education, and training suggest an increasing focus on the promotion of knowledge.

In the context of the recent development of knowledge-based economy in the world, the United States provides the clearest picture. Information, communication, and technology (ICT) industries were considered as the core industries for the United States to develop its knowledge-based economy. Under the advantageous environment and government policies, the ICT industry increased its share among all industries from 5.8% in 1990 to 7.8% in 1998. And, the ICT industries had created 5.16 million job opportunities for the labor market in 1998, which had given 1.15 million more job opportunities than in 1990 (Council for Economic Planning and Development, Executive Yuan, 2001). And, the annual wage of ICT worker is higher than the average of all industries.

Along with the development of knowledge-based economy in United States, economic growth rate jumped to more than 3.1% by 1999. Compared with the economic growth rate in 1991, it had increased by 2.9 percentage points. At the same time, unemployment rate in United States had decreased by 3.2 percentage points, which had declined from 7.4% in 1992 to 4.2% in 1999 (Council for Economic Planning and Development, Executive Yuan, 2001). The increasing economic growth rate and decreasing unemployment rate in United States had drawn other countries' attention to the influence of knowledge-based economy. Then, in order to perk up the domestic economy and competitiveness, other countries promoted the development of knowledge-based economy.

In Taiwan, knowledge-intensive industries have continuously grown since 1990, and this indicates that the economy has stepped into the era of knowledge-based

economy. In 1996, production of knowledge-intensive industries in Taiwan accounted for 40.6% of GDP (Chen and Liu, 2001). Several years later, *A Plan to Develop Knowledge-based Economy in Taiwan* (Council for Economic Planning and Development, Executive Yuan, 2001) proposed the mission to catch up with the developed countries in ten years. The proposal suggested that in ten years, the expenditure on R&D will rise to 3% of GDP, technology progress will contribute at least 75% of economic growth, production value of knowledge-intensive industries will be more than 60 per cent of GDP, spending on education will be 7% of GDP, and, broadband networks availability will expand and user fees will decrease to levels in United States.

5.1.2 The Influence on Female Labor Force Participation

In the industrialization era, physical strength was the main consideration for employers to employ a labor. Therefore, the labor market was less advantageous for females, but more beneficial for males. Different from the industrialization period, the key consideration to employ a labor in knowledge-based economy is the labor's capability of creation and application of knowledge. So, gender discrimination and segregation in the labor market is expected to become less prevalent. Female labor force participation rate is expected to grow along with the government's policy of promoting knowledge-based economy.

Because knowledge-based economy treats knowledge and information as the basis of economic activities, under the knowledge-based economy, highly skill labors are more and more in demand and have more employment opportunities. In contrast, low skill labors have fewer job opportunities and even face unemployment (Wang, 2001). Meanwhile, high skill labors often earn higher wages and on the contrary, wages of low skill labors often tend to experience negative growth. Labors that have high skills

are also treated as the core labor forces, and companies hire these high skill workers for full-time jobs with stable wages and steady promotions. On the other hand, low skill workers, who are categorized as non-core labor forces, would face unstable employment.

Because these low skill labors are easily substituted, companies tend to purchase the labor force as commodities from dispatched agencies, instead of offering them life-long employment. Therefore, these non-core labor forces are much different from the core labor forces, and could not have been given the same treatment as core labor forces (Sennett, 1998). Lin and Hsu (2001) have suggested that the main problem that could come along with knowledge-based economy could be increase of unemployment and a more unstable labor market. Moreover, the structure of unemployment, as well as the unemployment rate itself, would cause income disequilibrium to worsen (Wei, 2002).

According to the definition of OECD in 1999, knowledge-intensive manufacturing industries contain high technology and mid-high technology industries. Knowledge-intensive industries include aerospace, computer and office automation, pharmacy, telecommunications and semiconductor, scientific instruments, automobile, electrical engineering, chemical, other transportation vehicles, and machinery industries. Knowledge-intensive services include transportation, warehouse and telecommunications, business services, social and personal services, and financial, insurance and real estate services.

In the era of knowledge-based economy, not only high technology industries but also services would be well developed. Going a step further, Wen (2001) had pointed out that creative jobs in service industries could develop well in knowledge-based economy. A female labor who either knows how to create, communicate, and apply the knowledge or has high professional skills could have a very good career in the

knowledge-based economy. Moreover, since female labors have largely been employed in the service sector, development of the service industry in knowledge-based economy is advantageous for female labor force participation.

Chen (2002) suggested that along with the growth of knowledge-intensive service industries, development of knowledge-based economy is expected to positively influence employment prospects of female labors. Chen also explained that the positive influence is due to some service industries, such as social and personal services, which are different from the traditional pattern. Therefore, the gender-role attitudes in these industries are more modern. Moreover, some of the knowledge-intensive service industries are also certificate-intensive, which means that the level of educational attainment, instead of on-the-job training, becomes the main consideration for employers while hiring workers. Thus, the situation will not be disadvantageous for female workers in these knowledge-intensive service industries, as also in the knowledge-based economy.

5.2 Part-time Work and Female Labor Force Participation

According to the 81st Session of the International Labor Conference in 1994, ILO proposed that the definition of part-time worker is an employed person whose normal working hours are less than those of comparable full-time workers.¹⁸ However, the definitions of full-time work and part-time work did not reach an international agreement. Without an official definition, it is inconvenient to conduct household surveys. So, some countries tend to survey by asking the employees if they recognized themselves as doing part-time work. And, some countries tend to use the working hours as the distinction between full-time and part-time work (OECD, 2001).

¹⁸ The 81st Session adopted the Part-Time Work Convention (No. 175) and Recommendation (No. 182).

Various definitions of part-time work have existed in OECD member countries also. In OECD member countries, some countries suggest that a work is considered as part-time by the worker's perception, and some suggest that it is working hours less than general working hours (30 or 35 hours) during a week. Finally, OECD has defined that part-time work is working hours less than 30 hours per week, when it uses the term part-time in its own publications.

Part-time work has rapidly grown in developed countries and become increasingly commonplace in the European Union. In 2000, according to OECD non-weighted average of 29 member countries, the percentage of women working part time in total female employment had reached 25.8%. Meanwhile, the incidence of part-time work by males was 6.5% only. And the percentage of women in total part-time employment was 75.0%. In fact, females' share in part-time work is more than 90% in Luxembourg (OECD, 2002).

In European Union, the percentage of females working part-time in total female employment was 28.8% in 1992, then, it increased 4.7 percentage points to 33.5% in 2002. And, the incidence of male part-time workers increased from 4.2% in 1992 to 6.6% in 2002. Table 5-1 shows the percentage of part-time workers in total employment in some countries in 2006. 59.7% female workers and 15.8% male workers are part-time workers in the Netherlands. Indeed, due to effective enhancement of labor force participation rate, the Netherlands has been considered as the most successful model of a part-time economy (Lin, 2004). In Japan also there are rather high proportions, 40.9% of female workers, engaged in part-time work. However, the percentages of either female or male part-time workers in total employment in Taiwan were much lower than in other countries.

A study on part-time workers in Taiwan (Council of Labor Affairs, 2008) has revealed that part-time workers are more employed in the service sector. Moreover,

Table 5-1: The Percentage of Part-time Worker in Total Employment in Main Countries—2006

Unit: %

Country	Total	Female	Male
Australia	27.1	40.7	16.0
Canada	18.1	31.9	10.9
France	13.3	22.9	5.1
Germany	21.9	39.2	7.6
Japan	24.5	40.9	12.8
Korea	8.8	12.3	6.3
Netherlands	35.5	59.7	15.8
New Zealand	21.3	34.5	10.1
Norway	21.1	32.9	10.6
United Kingdom	23.4	38.8	9.9
United States	12.6	17.8	7.8
Taiwan	3.6	4.0	3.3

Note: Except Japan, the working time of part-time work in each country in this table is less than 30 hours.

In Japan, it is less than 35 hours.

Source: Organization for Economic Cooperation and Development (OECD), *OECD Employment Outlook 2007*, <http://www.oecd.org>.

Council of Labor Affairs (2008), *The Investigation on the Practical Employment Condition of Part-time Worker*, <http://www.cla.gov.tw>.

19.9% part-time workers are serving as cashiers, and 12.8% of them are employed as waiters or waitresses in restaurants. In European Union (Corral and Isusi, 2004), part-time work is particularly found in health, education and services sectors. Hotels/catering and retailing sectors also get the largest share of part-time employment, accounting for 28% and 23.1% respectively of total sectoral employment in 2002.

Fagan (2003) suggested that the rise of part-time work was contributed by intensified international competition, new production methods and forms of organization, rising unemployment, increase of female participation rates, and more

diverse working-time demands.

Moreover, determinants of demand and supply for female part-time labor are analyzed. Firms demand for part-time workers may be coming from three motives. The first one is that part-time jobs would let a firm better match labor to a changing workload. The second motive is that firms would get cheaper and more flexible labor by creating part-time positions. The third one arises from firms' wish to retain productive female labors that face household chores temporarily, or coming from firm's labor needs which are still unmet.

On the other hand, supply of female part-time labor is attributed to the gender-roles model. Therefore, compared with full-time jobs, part-time jobs are more preferred by married females, mothers of young kids, lower-educated females, and wealthy females (Jaumotte, 2003b). Also, the tax and social security systems may or may not reward part-time jobs, and that may influence the working-time decisions of individuals (Bielenski et al., 2002).

In 2008, Council of Labor Affairs of Executive Yuan published the results of an investigation on part-time workers in Taiwan. With multiple choices in the survey, part-time workers stated the three main reasons why they choose part-time work. The most chosen reason by females was flexible working-time (47.0%), being interested in the job (21.6%), and being unavailable for full-time work due to family factors (21.3%). For males, the three main reasons to be part-time workers are flexible working-time (48.5%), part-time job is simpler (24.0%), and being interested in the work (23.8%). Family factors explained only 5.5% of all the determinants for male part-time workers, which is much less than the ratio of females who took up part-time work because of family compulsions. Clearly, the family factor is much more relevant in case of females than males.

Part-time employment no doubt offers workers the opportunity to strike a balance

between the time they would like to devote to work and the time they want to devote to other activities. Moreover, it offers workers, especially female workers, a good way to combine employment and the responsibilities of caring for family members. Thus, workers have more choices and aren't forced to make a choice only between full-time work and unemployment. Furthermore, it allows employers to have better flexibility to match workers and workloads and have greater productivity (Bollé, 1997; OECD, 2002).

Although part-time employment offers advantages, there still exist several disadvantages also. It seems that part-time jobs are more possible to be found in lower-paid jobs, and offer inferior opportunities for career advancement, less certain job tenure, less job-related training, less occupational benefits, and a higher presence of temporary employment contracts. In some countries, part-time workers have restricted access to social protection benefits and rights (Corral and Isusi, 2004). In addition, some part-timers are involuntarily part-time workers, due to lack of full-time employment opportunities, which causes the increasing of underemployment. Under these disadvantages, Bollé (1997) suggested that the promotion of part-time work is likely to bring worse consequences in terms of both social and economic perspectives, especially for women and other workers who are already at a disadvantageous situation in the labor market.

5.3 Dispatched Work and Female Labor Force Participation

Due to the changing economic environment, atypical employment has been increasingly adopted by firms. The atypical employment breaks the rules that workers have to work at the same workplace, with a designated time-period, and with a group of familiar co-workers. As the central patterns of atypical employment, not only part-time employment but also dispatched work is recently used by employers to achieve

flexibility and efficiency.

Dispatched work is also called as temporary agency work in Europe, and temporary help service, or temporary help employment in United States. Dispatched work involves dispatched work agencies, user enterprises, and dispatched workers. Between a dispatched work agency and a user enterprise, there exists a contract to dispatch agency workers. The work agency and the dispatched workers have employment relationship. In other words, it means that the work agency employs the dispatched worker. On the other hand, the user enterprise has the authority to supervise and give the dispatched worker directions, which indicates that there exists a working relationship between the user enterprise and the dispatched worker. As mentioned above, all these make dispatched work a triangular arrangement, and different from the typical employment (Chen, 2005).

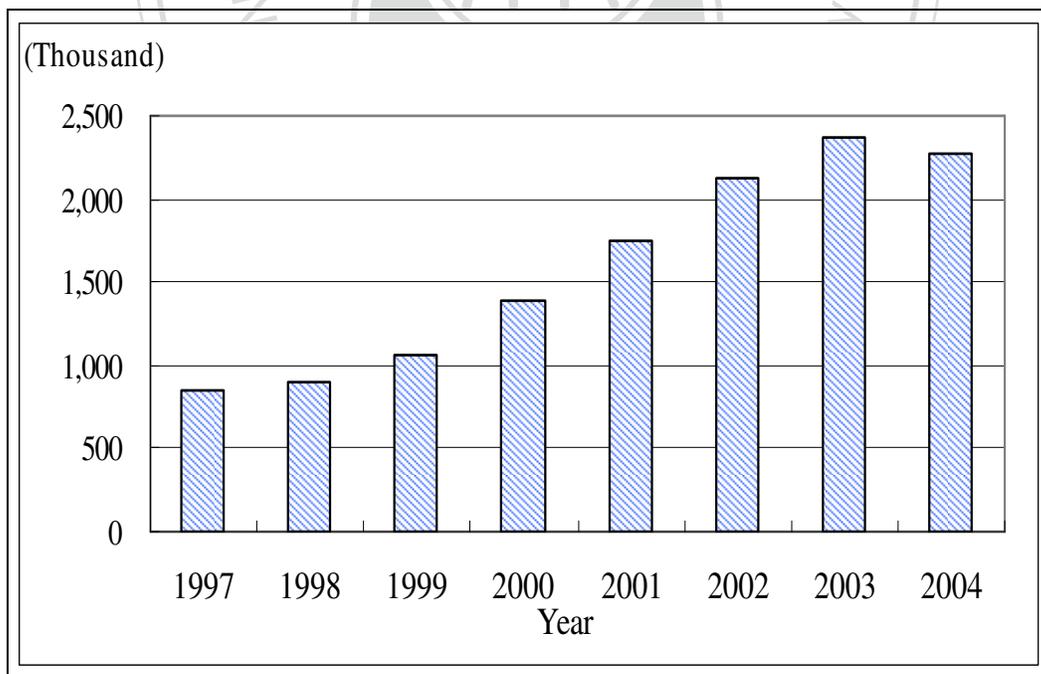
There are two types of dispatched work. One is registered type, and the other is regular type. In the registered type, the worker has to register in advance, and the dispatch agency only concludes an employment contract with the dispatch worker wherein the dispatch agency dispatches the worker to its client company. In the regular type, the dispatch agency hires the worker on a permanent basis, no matter it dispatches its worker to a client firm or not (Chang and Chen, 2006).

5.3.1 The Development of Dispatched Work

Because of rapid economic development, enterprises in United States had put great efforts on reducing costs and maximizing profits. In order to have the efficiency and flexibility to respond to the constantly changing markets, enterprises began to depend on arrangements of temporary workers, part-time workers, and outsourcing. Therefore, temporary work agencies have prosperously developed since 1980 (Chang, 2001).

According to Bureau of Labor Statistics, U.S.A., temporary work agencies had kept their annual growth rate at around 17% from 1993 to 1995, and 9% after 1995 (Chang, 2001). In addition, temporary help service was considered as a business which had a growth rate that ranked 4th in United States in 2003. Meanwhile, the population of temporary help service workers had reached about 3.5 million people. Moreover, temporary help service has also been forecast to provide 1.8 million jobs for the labor market from 2002 to 2012 (Lin, 2006).

According to Japan's Ministry of Health, Labor, and Welfare, temporary agency workers accounted for more than 1 million persons in 1999. In fiscal year 2000, population of dispatched worker increased 30% over fiscal year 1999. Moreover, the number of temporary agency workers in 2002 had exceeded 2 million. In 2004, population of temporary agency workers had reached approximately 2.3 million (Figure 5-1).



Source: Ministry of Health, Labour, and Welfare, Japan, <http://www-bm.mhlw.go.jp>.

Figure 5-1: The Population of Temporary Agency Worker in Japan

In order to enhance employment and economic growth, development of dispatched work has drawn much attention. Although dispatched work in Taiwan is not as well developed as the United States and Japan, there indeed exists an increasing trend of dispatched work in the labor market. From *A Survey on the Occupational Wage*, Council of Labor Affairs announced that there were 729 enterprises using dispatched workers among all the 9,264 investigated enterprises in 2005. The enterprises which have used dispatched worker had occupied 7.9% in 2005, and this proportion had increased 1.3 percentage points over the previous year.

5.3.2 The Characteristics of Dispatched Work

The major characteristics of dispatched work are introduced as follows:

1. In Taiwan, enterprises of larger scales have higher probabilities to use dispatched workers

According to the investigation on private enterprises in Taiwan, enterprises of larger scales have higher probabilities to use dispatched workers. In 2005, 35% of enterprises that had more than 500 staff were using dispatched workers. 24.5% of enterprises with 300 to 499 staff were using dispatched workers while the figures were 23.9%, 15.5%, and 8.7% for enterprises with 200 to 299, 100 to 199, and 50 to 99 staff respectively. On the other hand, there were only 1.7% companies with less than 30 staff that were using dispatched workers (Council of Labor Affairs, 2006).

2. Most user enterprises belonged to the finance and insurance industry

Among all the enterprises in Taiwan that were using dispatched workers in 2005, 28% belonged to the finance and insurance industry, 23.2% belonged to water, electricity, and fuel industry, and 23% belonged to the industry of medical and health services (Council of Labor Affairs, 2006). Chen (2005) also conducted an investigation on dispatched work. This investigation revealed that 32% of the user enterprises were in

finance, insurance, and real estate industry, and 29% were in business services industry. Therefore, he suggested that most of user enterprises were in the service industry, and this distribution is quite the same as the situation of dispatched workers in European Union. He also concluded that the service economy has been instrumental in development of dispatched work.

3. User enterprises use dispatched workers to reduce personnel costs and enhance flexibilities

There were several reasons for enterprises to use dispatched workers. According to answers to the questionnaire of *A Survey on the Occupational Wage* with multiple choices (Council of Labor Affairs, 2006), 49.9% user enterprises in Taiwan said that they wanted to reduce personnel management costs. Also, 49.9% user enterprises replied that they wanted to have more flexibility while matching the workers and the work load. 48% of them answered that they could find the right persons through dispatched work agencies. 11.9% of the enterprises chose “simplifying the procedure of hiring new staff” as one of the reasons. And, 9.2% reacted that they wanted to avoid labor disputes.

4. Most dispatched workers in Taiwan serve in the basic work

Looking at the occupations that the dispatched workers serve, it showed that in private enterprises in Taiwan in 2005, 17.1% served as clerical assistants and workers, 13.2% were machine operators, and 7% were cleaners. In public enterprises, it indicated that most of the dispatched workers served as cleaning workers, which accounted for 30.1% of dispatched workers. Then, 26.7% and 10.3% of dispatched workers served as machine operators and clerks respectively. According to the data above, most of the dispatched workers serve in the basic work.

5. Most registered dispatched workers in Japan serve as office equipment operators

In Japan, 32% of the dispatched workers were distributed in the manufacturing

industry in the fiscal year 2000. Therefore, the job type that the dispatched workers served was much different from Taiwan. In Japan, 44.8% of registered dispatched workers served as office equipment operators, 13.3% were engaged in the financial clerical field, and 7.6 were engaged in filing. Among regular-base dispatched workers, 34.1% of them served in software development, 28.0% in machine design, and 19.2% as office equipment operators (Japan Institute of Labour, 2002).

6. Females are the majority in dispatched work

In 2003, about 70% dispatched workers in Japan were females, and the others were males. In Japan, most of male dispatched workers served in software development and machine design. 32.9% of female dispatched workers worked as office equipment operators, and 27.7% of them had been assigned general clerical works (Lin, 2006).

In case of Taiwan, 75% of dispatched workers are females, and 25% are males. This reflects that females are the majority in dispatched work. Chen (2005) also said that this condition is quite the same as the situation in most industrialized countries, and is consistent with the development trend of the service economy.

7. Most dispatched workers are 21 to 39-years-old

About the age of dispatched workers in Taiwan, most of them are centered in the age group of 21 to 30, which accounts for 90% of the population of dispatched workers. The other 10% are in the age group of 31 to 40 (Chen, 2005).

Although most of the dispatched workers in Japan were 21 to 39-years-old, as in Taiwan, the proportion of each age group is much different. In 2004, 35.5% of dispatched workers in Japan were 20 to 29-years-old, and 37.7% were in the age group of 30-39. Moreover, 35.7% of female dispatched workers were 20 to 29-years-old, 41.9% were 30 to 39-years-old, and 14.7% were 40 to 49-years-old.

8. Most dispatched workers in Taiwan are junior college educated and most female dispatched workers in Japan are senior high school educated

Seeing the proportion of dispatched workers in Taiwan by level of educational attainment, 25% of them are senior high school or vocational school educated, 50% are junior college educated, and 25% are university graduates (Chen, 2005). Distribution of dispatched workers in Japan by educational level suggests that 34.9% of female dispatched workers in Japan were senior high school educated, 30.0% were graduates from professional schools or junior colleges, and 22.7% were university or higher graduates.

9. Most dispatched workers suggest that dispatch employment is helpful for their working experiences and seeking jobs

From dispatched workers' answers, more than 70% of dispatched workers have agreed that dispatch employment can enlarge their working experiences, and it is helpful for dispatched workers to get work in famous enterprises. Moreover, more than 60% dispatched workers have suggested that dispatch employment could decrease the cost and time of searching for a job, and it can help the workers to realize their interest at work (Chen, 2005).

In sum, dispatch employment is not only advantageous for user enterprises but also beneficial for the workers. Dispatch employment could lower personnel costs of user enterprises, offer user enterprises the flexibility to use human resources in tune with their needs, and simplify the recruiting procedure for user enterprises. Meanwhile, through the arrangement of dispatched work, labors can have fewer barriers while entering the labor market. Dispatched workers can also accumulate and broaden work experience through dispatched work. Also, dispatch employment works as a bridge for workers to find a permanent job.

Since most of the dispatched workers in Taiwan are females, growth of dispatch work is advantageous for enhancing female labor force participation rate and reducing female unemployment rate. Especially, it can help first-time job seekers and females

who exited from the labor market to find a suitable job as soon as possible, and avoid increase of discouraged workers. However, the types of jobs handled by dispatched workers in Taiwan are still of the basic level, and the industry is still under development, compared with some advanced countries. In United States, there is an increasing trend that more and more dispatched workers serve as professionals and as workers in information technology companies. Moreover, without clear and specific regulations in Taiwan, dispatched workers have less security and benefits than typical workers.

5.4 Summary

By lowering the entry barriers of the labor market for females, the knowledge-based economy provides better circumstances for female labor force participation. Also, the development of knowledge-intensive service industry is forecast to have a positive impact on female labor force participation since more and more female labors have participated in the service industry. However, the main problem, with the coming of knowledge-based economy, would be the unstable labor market and worsening income disequilibrium. Professionals or high skill labors are getting higher pay and better benefits while low skill workers are becoming easily replaceable in the knowledge-based economy.

Part-time employment is advantageous for female workers because it provides them the opportunity to strike a balance between work and other activities, such as caring for family members. Thus, workers would have more choices rather than being forced to make a choice between full-time work and unemployment. Although part-time work is advantageous for female labor force, it still has some disadvantages. Since part-time jobs are more possible to be found in lower-paid jobs, it offers lower opportunities for promotion and less occupational benefits. In addition, some of part-timers are involuntarily part-time workers, which would cause increasing incidence

of underemployment.

Temporary work agencies and dispatched work have developed well since 1980. Through the arrangement of dispatched work, labors can have fewer barriers while entering the labor market, and they can also accumulate and broaden their working experiences. Also, dispatch employment indirectly or directly helps the workers to find permanent jobs. However, the types of jobs of dispatched work in Taiwan are still of the basic level, and dispatched workers have less security and benefits in the absence of clear and specific regulations.

Development of knowledge-intensive service industries is advantageous for female labors. Also, the flexibility of part-time work and the savings of searching costs through arrangements of dispatched work are beneficial for improving female labor force participation. The disadvantages could be settled through some solutions, such as learning, training, and government regulations.

