

Job Opportunities and Industrial Transformation in Taiwan, 1978-2012

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Abstract

In this paper, I document the trends in the distribution of employment opportunities in Taiwan, and examine three possible explanations of recent deterioration of the labor market, including China impact, party politics and industrial transformation. Applying the relative distribution method (Handcock and Morris 1999) on data from the 1978-2012 Manpower Survey, I find that (1) the median wage of all jobs increased from 1978 to 1995 and then stagnated; (2) the wage distributions of jobs polarized in the 1980s and the 2000s, with a relatively stable period in between; (3) the higher-paying jobs decreased and the lower-paying jobs increased since 2000; (4) young workers faced decreasing number of higher-paying jobs and increasing number of lower-paying jobs, while the reverse is true for the middle-aged workers. These findings are more consistent with the industrial transformation hypothesis, and the young workers were more sensitive to the transformation of labor market.

Introduction

The increasing competition by the development of technology and globalization changes the opportunity structure and the needs of labor in the labor market. In order to deal with the fast flows of information, capital and chances, employers shift the risks to the employees through flexible employment which reduces the welfare of employment. Of course, Taiwan is not excluded from this global trend: the earnings of workers decrease and working condition is also getting worse. For example, the unemployment rate has increased from 1.5% in 1990 to 5.2% in 2010 and further the earnings of labor market new entrants have declined since 2000. Additionally, the rise in price, including food and housing, deteriorates people's life conditions. People face difficulties from both exacerbating labor market and soaring prices.

Three possible explanations to reason why the employment opportunity becomes worse include neoliberalism (China impact), party politics, and industrial transformation. First of all, neoliberalism introduces the conglomeration dominating the resources to the whole market. The conglomeration mobilizes the capital from country to country, and builds the factories in the developing countries to avoid the regulation and to decrease the cost of production. As a result, on the one hand, the job opportunities of the manufactory in the developed counties will disappear; on the other hand, workers in the developing countries work under the conditions of low payment and long work hours (Chomsky and McChesney 2011). In Taiwan, neoliberal policies deregulate the market, including employment flexibility and trade liberalization. Labor market flexibility leads to the increase of the job insecurity and job instability and the expansion of informal employment. Moreover, deregulation of trade induces the increasing dependence on international trade, in Taiwan, especially with mainland China (Lin et al. 2011). Since 1993, the foreign direct investment in Taiwan has moved and highly centralized to mainland China. And the consequences

of increasing dependence on trade with mainland China include higher poverty rate and higher unemployment rate (Lin et al. 2011). Therefore, overdependence on mainland China will worsen the labor market in Taiwan and may trigger the crisis of sovereignty, for example, the sun flower movement in March opposed the passing of the Cross-Strait Agreement on Trade in Services which may damage the job opportunities, social justice and democracy in Taiwan.

Furthermore, because of the importance of China impacts, the recent deterioration of labor market and the stagnation of economy were attributed to the KMT (Kuomintang) government which inclines to open toward mainland China. Since the KMT regained power in 2008, the Taiwan President Ma Ying-jeou reopened the path of cross-strait trades, such as ECFA (The Economic Cooperation Framework Agreement) and the Cross-Strait Agreement on Trade in Services. This inclination toward mainland China will increase the dependence on mainland China, reduce people's job opportunities and constrain the economic development.

In addition to the neoliberal concerns for economic benefit, industrial transformation also changes the structure of labor market. Industrialization provides people more job opportunities in the factories instead of farm, and causes the whole occupational structure upgrade. Hence, people in the industrial society have more opportunities to cross the class boundaries and experience upward mobility (Blau and Duncan 1967). In Taiwan, small and medium enterprise appears and workers have chances to become bosses in the process of industrialization in order to satisfy the need of export trade. However, in the post-industrial society, flexible production has replaced with mass production. Routine and labor-intensive jobs were substituted by the technology and computers and hence the low-skilled workers lost their jobs. Moreover, the employment structure becomes polarized (Autor et al. 2003; Goos and Manning 2007), more and more people work in the profession/ high-skilled sectors

and face-to-face/ low-skilled jobs rather than the middle works. Wilson (1997) points out that the industrial transformation makes the firms close or move to other places and then leads to the increase of unemployment rate for the black men living in the inner cities. Yu(2009) states that post-industrialization in Taiwan creates the needs of white-collar workers which brings women more job opportunities and further increases women's labor participation.

Eventually, industrial transformation might have diverse effects for different group of people. The traditional jobs in manufactory with relatively higher payment will be slowly eliminate from the labor market, while the new jobs in service industry tend to abundantly emerge in the labor market. The former will not appeal and recruit new entrants in the labor market, whereas the later absorbs the young workers and the disadvantageous workers in the labor market. As a result, the young workers are more likely to be affected by the changes in the employment structure.

Therefore, in this study, I would like to document the trends in the distribution of employment opportunities in Taiwan, and to examine three possible explanations of recent deterioration of the labor market. Moreover, I further study the trends in the distribution of employment structure for the workers from different life stages.

Data and Method

Data and Variables

Data come from the Manpower Survey in 1978 to 2012. Each Manpower Survey includes a multistage stratified sample of the household and people in the household aged more than 15 years old are included in the sample. The sample examined here consists of people with full-time and paid jobs, which refers to working at least 35 hours per week. I take wage (monthly earnings/ working hours) as income variable and deflated by the Consumer Product Index (CPI).

Method

In this study, I introduce job approach (Wright and Dwyer 2003) rather than directly accounting individual wage to estimate the distribution of job opportunities. The analytic unit in the job approach is “job”, which is composed of occupation and industry, and the index of job quality is wage of the job. After calculating the median wage of each job by year and ranking the jobs by the median wage, we can distinguish good jobs and bad jobs in the labor market by the job rank.

Furthermore, I apply the relative distribution method (Handcock and Morris 1999) to capture the dynamic of the differences in the distribution of good job and bad jobs overtime. Using this method, we can get the relative distribution ($g_t(r)$) through comparing the differences between the comparison distribution ($f_t(y)$) and the reference distribution ($f_o(y)$) and further decompose the differences into the location shift ($\frac{f_{oL}(y)}{f_o(y)}$) and the shape shift ($\frac{f_t(y)}{f_{oL}(y)}$). The location shift refers to the changes in the median of jobs' wages and the shape shift captures whether the job opportunity becomes more polarized than the reference group: more people at the top and the bottom of the scale and fewer in the middle.

$$g_t(r) = \frac{f_t(y)}{f_o(y)}, \quad 0 < r \leq 1 \quad (1)$$

$$g_t(r) = \frac{f_t(y)}{f_o(y)} = \frac{f_{oL}(y)}{f_o(y)} \times \frac{f_t(y)}{f_{oL}(y)} \quad (2)$$

Additionally, we can further measure the distributional polarization, median relative polarization index (MRP), which helps us understand whether one distribution is more unequal than another.

$$MRP_t = 4 \int_0^1 \left| r - \frac{1}{2} \right| \times g_t(r) dr - 1, \quad -1 < r \leq 1 \quad (3)$$

MRP ranges from -1 to 1. Given the location shift, a value of zero represents no differences in the distributional shape; positive values represent more polarization and

negative values represent less polarization. Furthermore, we can trace the polarization comes from the increase of good jobs (the upper polarization index) or bad jobs (the lower polarization index).

$$\text{MRP}_t = \frac{1}{2}\text{LRP}_t + \frac{1}{2}\text{URP}_t \quad (4)$$

In the preliminary analyses, I take the distribution of job opportunity in 1978 as the reference year for calculating the whole series, and compare the distribution of following years with the distribution of reference year. And further, I decompose the workers into three age groups to examine whether the trends in the distributions of job opportunities are different among the workers in different life stages.

Main Results

Figure1 represents the annual value of the location and shape entropies since 1978. The entropies for the location shift increased until 1995 and maintained stable in the following years. This pattern means that for all workers, the median wage of the jobs climbed from 1978 to 1995 and then stagnated. Figure2 further shows the annual the polarization indices, which indicate the changes of the shape of the distribution. The polarization indices (MRP) represent the overall increase or decrease inequality of the distribution of good jobs and bad jobs, and show that, in general, the distributions of job opportunity polarized in the 1980s and the 2000s, with a relatively stable period in between, and higher-paying jobs decreased and the lower-paying jobs increased since 2000. For the most period, the lower index and the upper index are positive and the lower index is the larger of the two, indicating that downgrading in the job quality was more pronounced than upgrading. Finally, the most interesting part is that opportunities of good jobs had decreased below the reference year since 2004, when the DDP gained the power. It represents that the worsened working conditions

for all workers started from the time of the DDP government and lasts in the time of KMT government, not just because of the inclination toward mainland China of the KMT government though it brings the crisis of democracy.

Furthermore, Figure3 displays the annual the polarization indices for young workers. The results show that young workers faced decreasing number of higher-paying jobs and increasing number of lower-paying jobs, while the reverse is true for the middle-aged workers (further see Figure4 and Figure5). Because young people are more sensitive to the changes in the labor market, when the financial resources and job opportunities shift toward mainland China due to the neoliberal policies of the KMT government, young people will lose the opportunities of good jobs. Hence, only young people experience the damages of the neoliberal policies of the KMT government. That is possibly why young people reveal strong reactions to the passing of the Cross-Strait Agreement on Trade in Services and other trade agreement with mainland China.

Reference

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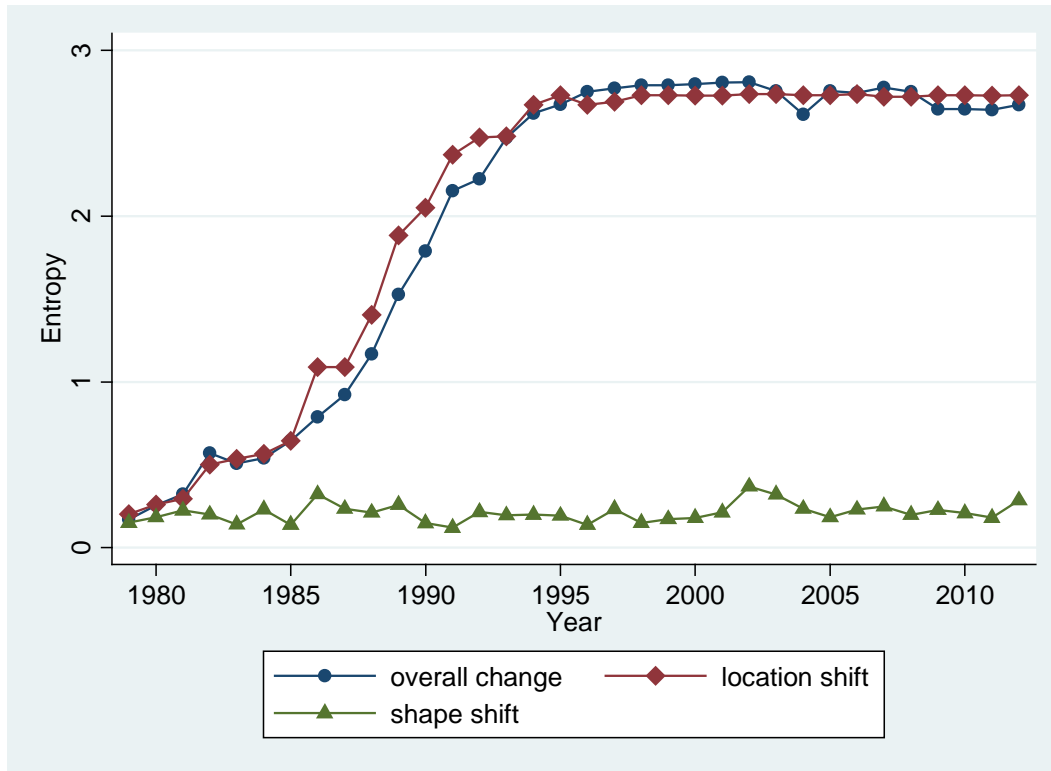


Figure1. Entropies for Location and Shape by Year for All Workers

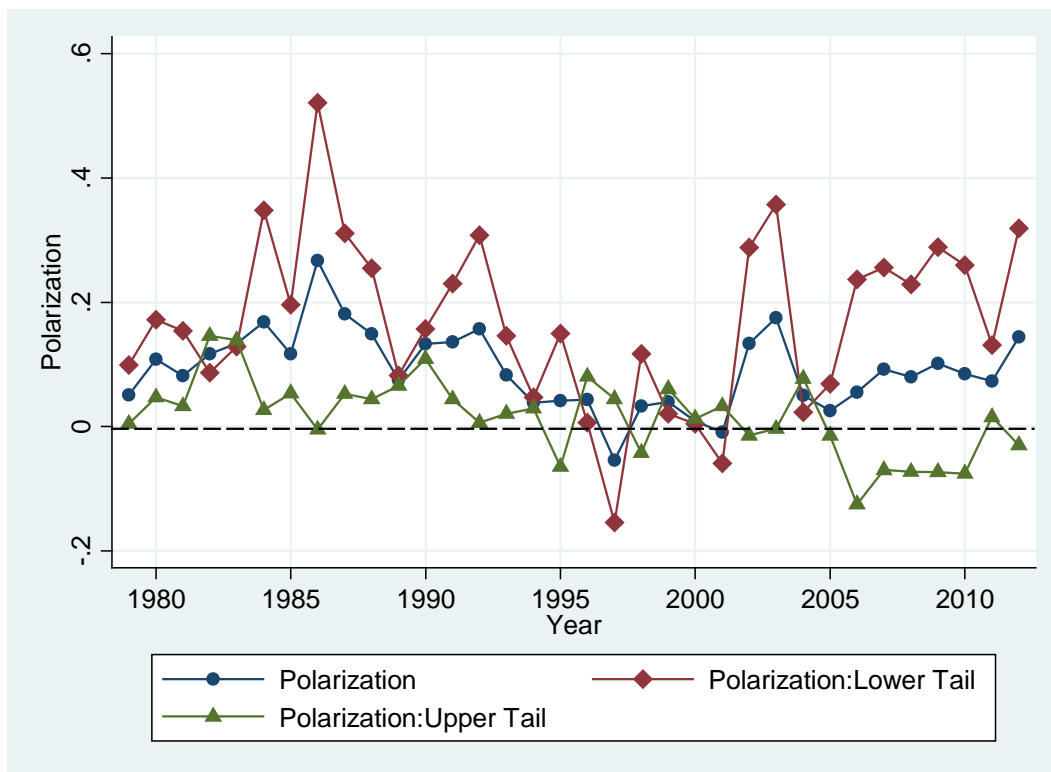


Figure2. Polarization Indices by Year for All Workers

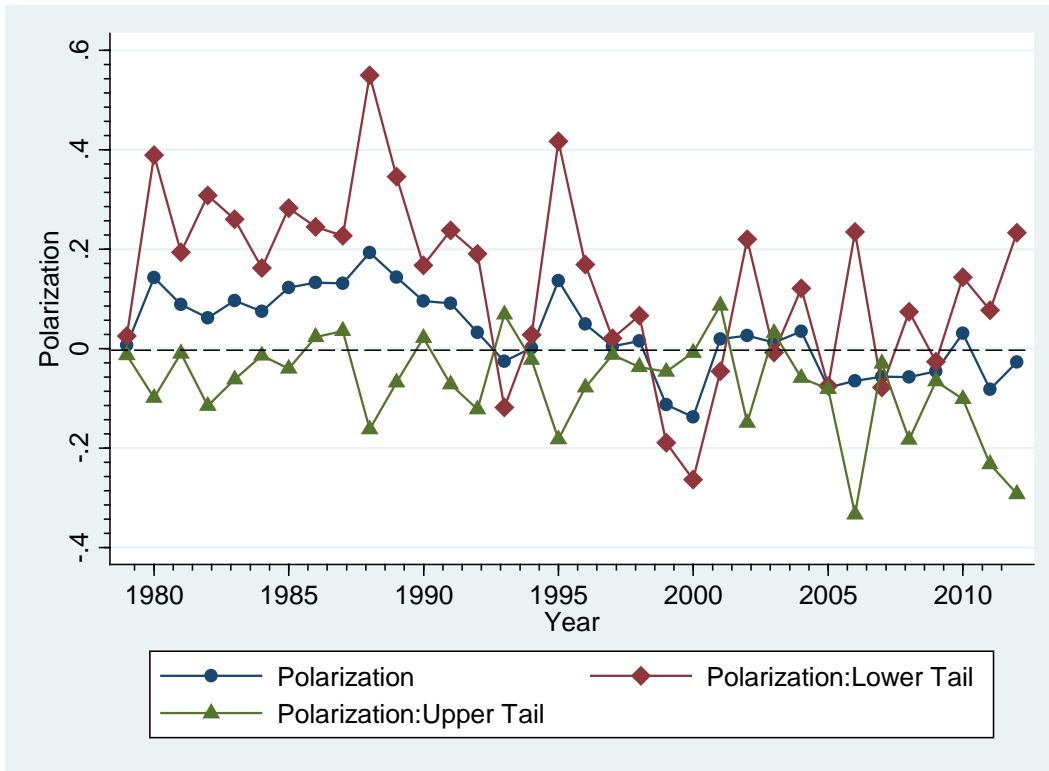


Figure3. Polarization Indices by Year for Young Workers (less than 30 years old)

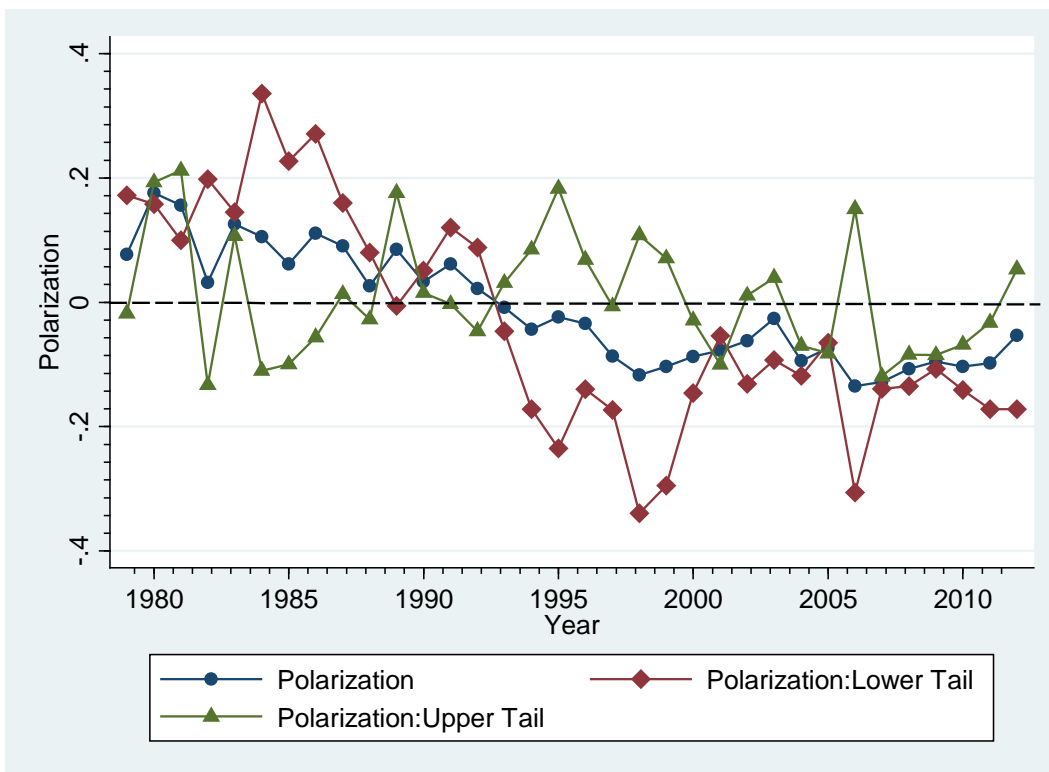


Figure4. Polarization Indices by Year for Middle-aged Workers (31 to 45 years old)

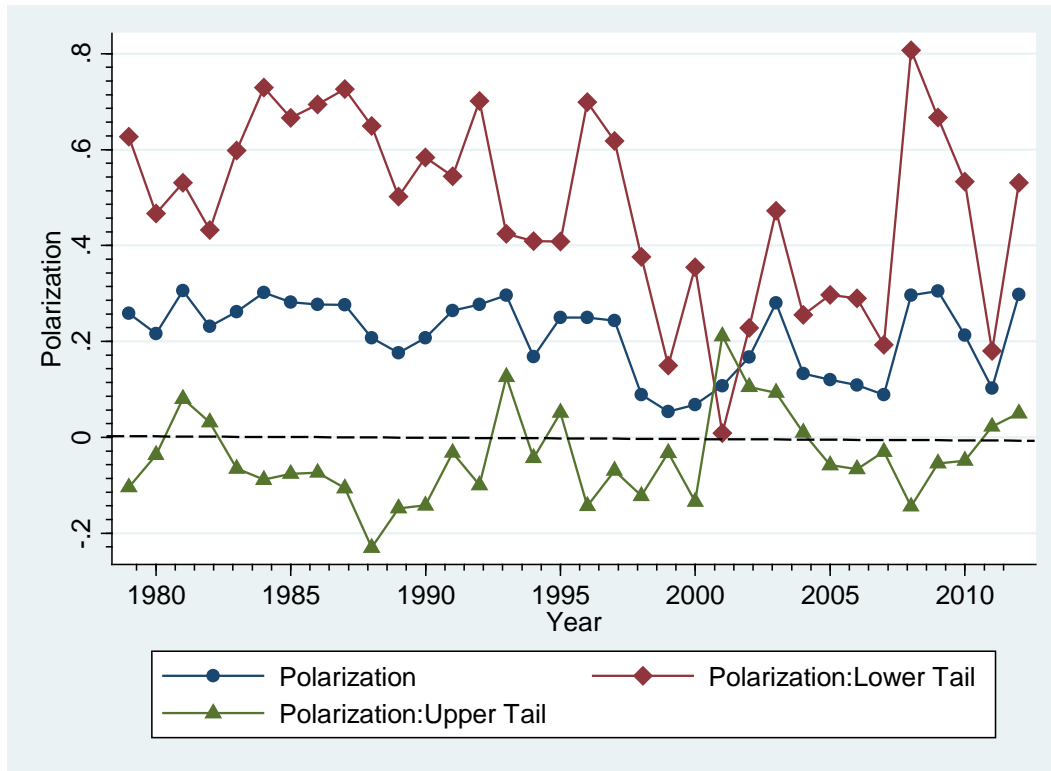


Figure5. Polarization Indices by Year for Senior Workers (more than 45 years old)