Salary fluctuation theory

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Introduction:

In this paper, based on my previous price theory, I will put forward my own labor market price determination theory, I will discuss the determination of price under different situations.

1. Background

In the conventional economic science, scientists believe that the labor market can automatically make itself go into an equilibrium state and full employment. So everyone will have a job and there will not be any short of demand. This view is based on the Say's law, which claims that the supply will create its own demand [1]. However, this claim has been proven totally wrong in the great depression. In this paper, I will put forward my own labor market price determination theory.

In the labor market, the supply is job seekers in that market, the demand is the companies which hire people and pay salary to their employee. In our whole discuss inside this paper, to make the problem easy to address, we will assume that there won't be inflation and only variable here are demand, quantity demanded, supply, quantity supplied and salary price, ceteris paribus. And we discuss our problem in a partial market, where there are many companies that compete with each other to find job seekers, there are many job seekers compete with each other to find jobs offered by the companies, but what to clarify here is that the partial means we only discuss toward one kind of job position, whether it is the lawyer position or the software engineer position, we doesn't care. We only discuss one kind of position, another thing I want to clarify is that every job seeker is capable of doing this kind of job.

2. Relationship between labor market supply and demand

Toward one kind of job position, we could know that if the number of job position offered by the companies are more than the number of job seekers, we could know that the job seeker is in highly demanded, so we could know that all the job seekers can be employed and the number of job seekers will determine the real number of job positions or real number of employment. Just like in the Say's law, supply creates its own demand[1], here the labor market supply creates its own labor market demand. What if the other way around, what if the number of job seekers are more than the number of job positions that are offered? We could confer the number of employment will be determined by the number of job positions that are offered, so we have the labor market demand will determine the real number of employment in the labor market. So we can know that between the labor market supply and demand, the smaller one will determine the other one and the real number of employment.

To summarize:

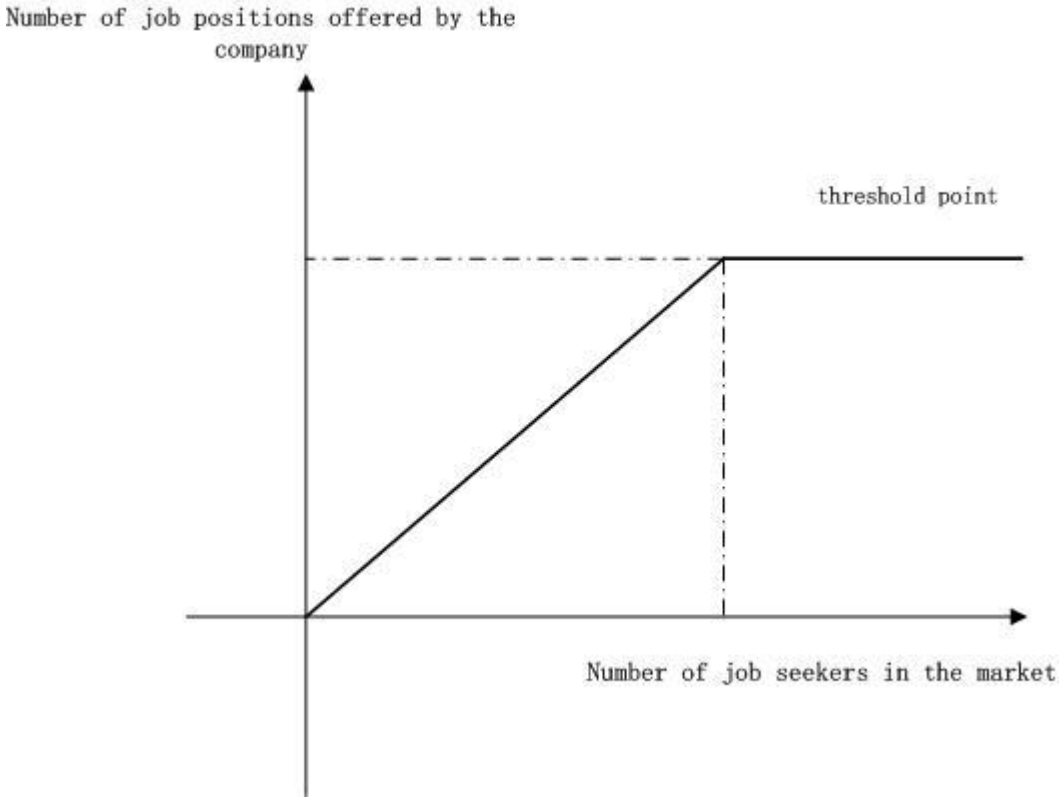
If the labor market supply is smaller, it will determine the real number of labor market employment; If the labor market demand is smaller, it will determine the real number of labor market employment. If the labor market supply is higher, there will by unemployment, if the labor market demand is higher, there will be full employment.

3. Graph toward the relationship between labor market supply and demand

In my following discussion, we assume that no other factor will influence the labor market demand quantity d, so it will remain the same during my discussion.

Given a demand quantity d (d>0) (Companies in the market offered d positions), we can have the following graph:

Figure 1. Number of Employment

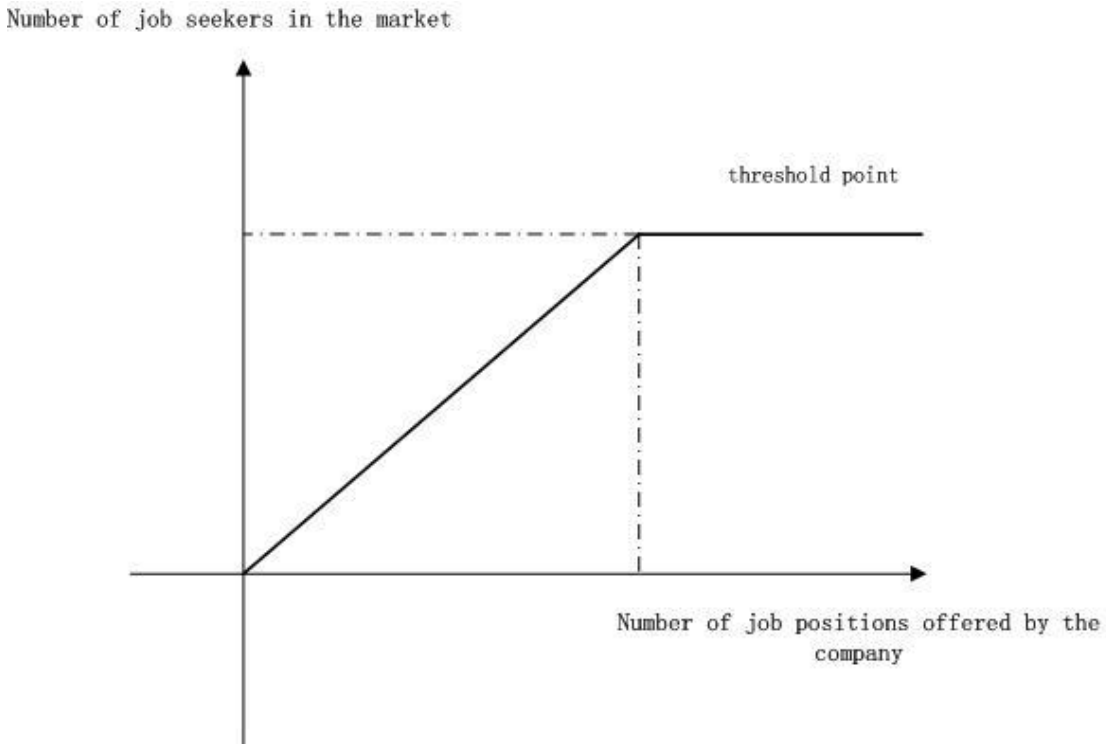


When companies offered d positions (d>0), we increase the number of job seekers starting from zero. As the job seekers volume is the lower value, it will determine the real number of employment. The number of the job seekers increases, real number of employment will also increase. After the number of the job seekers surpasses the value d, the demand will become the lower value, it will determine the real number of employment. So the real number of employment will remain to be d even if the number of the job seekers continues increasing.

Here part 1, before the supply quantity reaches the d, the labor market supply will determine the demand, there will be full employment. After the supply quantity exceeds d, the labor market demand will determine the supply, there will be unemployment.

In my following discussion, we assume that no other factor will influence the number of job seekers s.
Given a job seeker quantity s (s>0), we can have the following graph:

Figure 2. Number of Employment



When there is s number of job seekers in the labor market, we increase the job demand quantity starting from zero. As the demand volume is the lower value, it will determine the employment volume. The number of jobs offered increases, the real employment quantity will also increase. After the number of jobs offered surpasses the value s, the supply will become the lower value, it will determine the employment volume. So the employment volume will remain to be s even if the quantity of job offered continues increasing.

Here part 1, before the job demand quantity reaches the s, the demand will determine the supply, there will be unemployment. After the demand quantity exceeds s, the supply will determine the demand, there will be full employment.

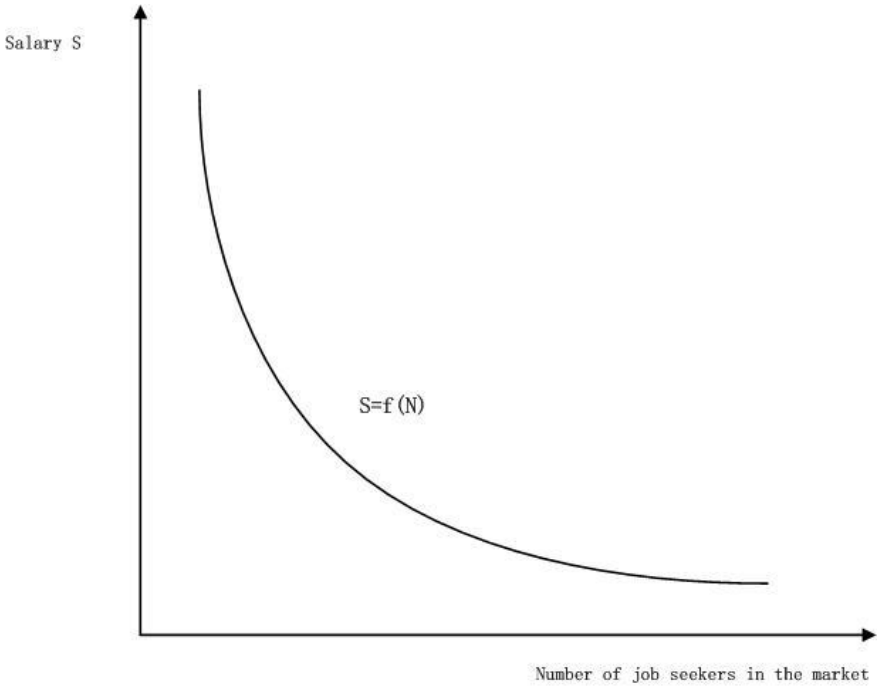
4. Salary-supply relationship theory

From the real world, we can easily notice that if there are more job seekers toward one kind of job, then the salary paid to each job seeker is low; if it is hard to find any one that can do the job, then the pay to this job is very high. So we can know that the relationship between the labor market supply and salary is a decreasing function, we assume it to be salary(S) = f(number of job seekers (N)):

$$S=f(N)$$

We have the following salary-labor market supply quantity relationship graph:

Figure 3. Salary-labor market supply relationship

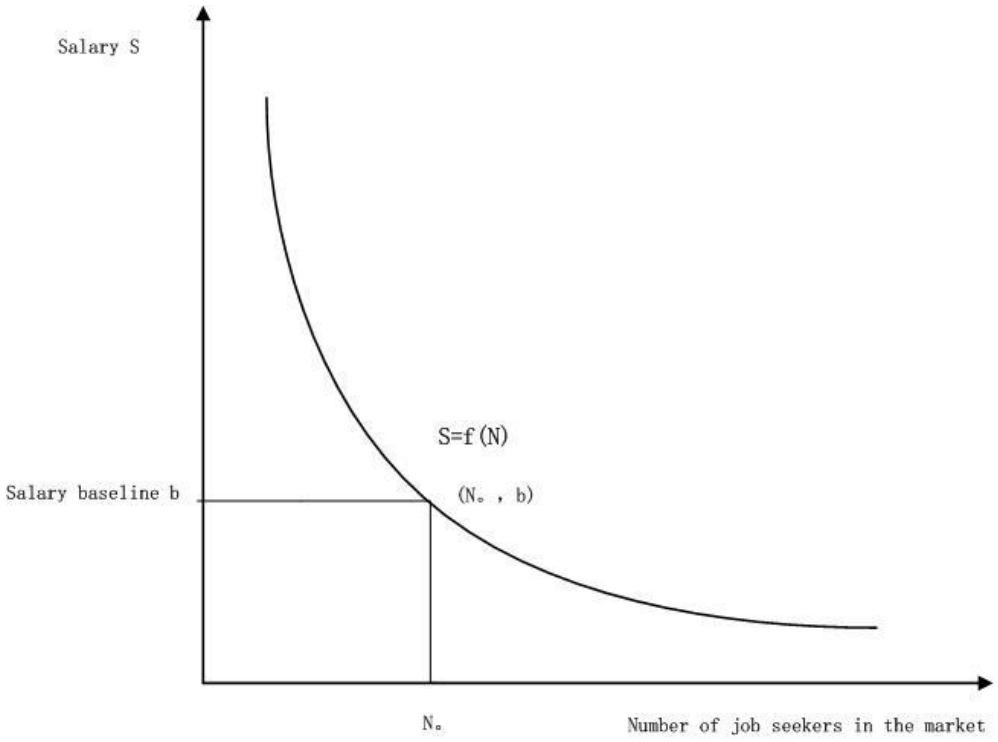


We could easily know that if the number of job seekers increase, the salary will be decreasing.

5. People's base requirement toward salary

We all know that every job seekers have a base requirement for salary, we assume it to be value b. If the salary is under the baseline value b, then people could not make a living or could not even survive. If this base could not be contented, job seekers will try to find another job or go into another kind of industry. Of course everyone have different standard toward the baseline for salary, but here to simplify our discussion, we assume the everyone has the same requirement for the salary baseline. We assume it to be value b. We can mark it in the Figure 3, so we have the figure 4 as follows:

Figure 4. Salary baseline

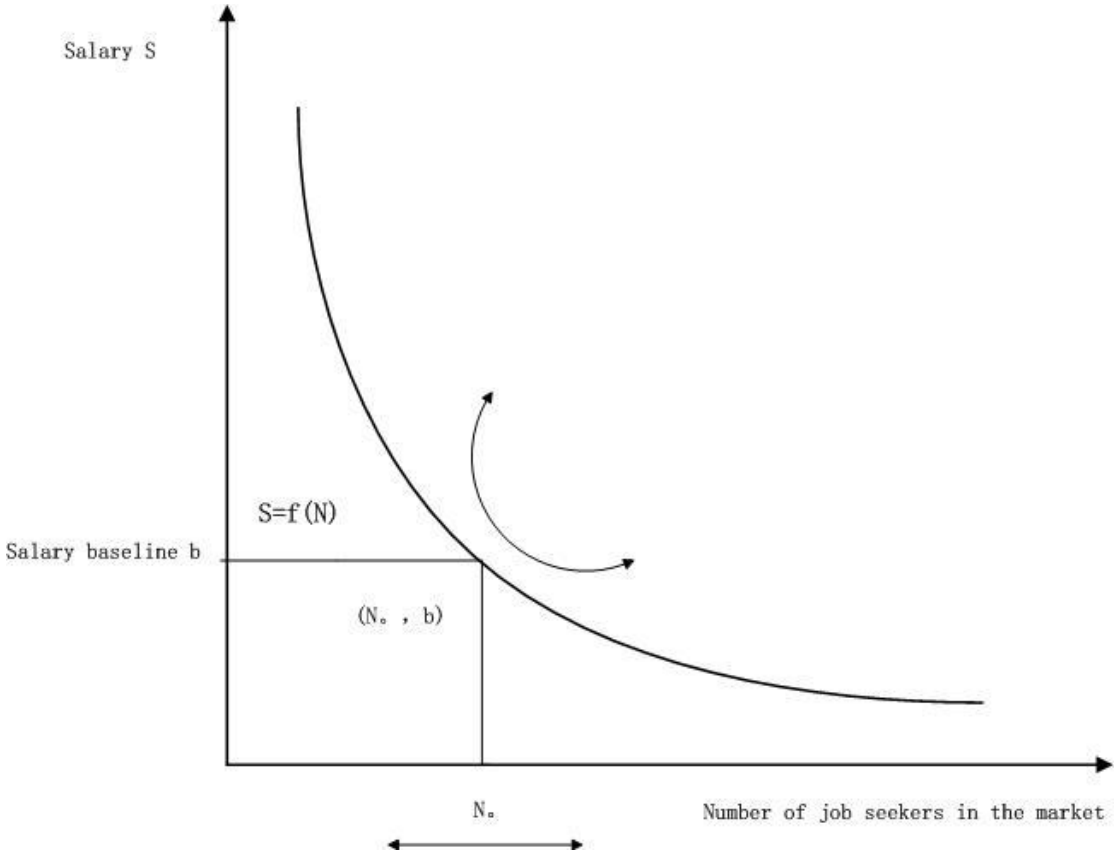


From our previous discussion, we know that if the salary is below the baseline b, people will never do this kind of job any more if they have other choices.

Considering the fact that the jobs seekers in the market they want to earn money, they are self-interestedly (This is the basic assumption of modern economy).
If company's demand for this kind of job is L and it is a constant value during our discussion, ceteris paribus. We have that the point in the curve will move like this:

1) The initial supply quantity is 0. We could conclude that this position offers very high salary, then the job seekers will devoted themselves into this industry, so the number of job seekers in this industry will increase.
2) The number of job seekers is increasing, during the process, the salary for each of this kind of job position is decreasing. The salary is decreasing.
3) After the number of job seekers quantity is above N。, we have that the average salary of this kind of job is below b, the salary is very low for job seekers to make a living. So sellers will not seek this kind of job position. The supply quantity will go down.
4) Then the number of job seekers will decrease to some value below N。.
5) When the quantity decreases to some vey low value, the salary for each position is vey high. This job is very profitable. Then job seekers will devoted themselves into this industry.

Figure 5. The salary fluctuation process



The conclusion is that the number of job seekers will fluctuate along the horizontal axis near point (N。, 0). Then we can infer that the price will fluctuate along the vertical axis (0, b).

In real life, different people have different judge toward the base salary. And the standard for base salary for the same people would also change, so every moment, there are people who seek to jump to another position which is higher paid. Besides, salary itself is not the only factor that influence the job seekers' motivation to leave the current industry, other factors could be welfare, benefits, interest and so on.

To clarify, the (N。, b) is not the equilibrium point. The number of job seekers will not stop at N。. If the increase of the supply quantity is too rapid, the supply quantity will naturally exceed this value N。. If the supply quantity stops at this value, as this is the baseline for people, some people will also leave this industry, so the number of job seekers will decrease.

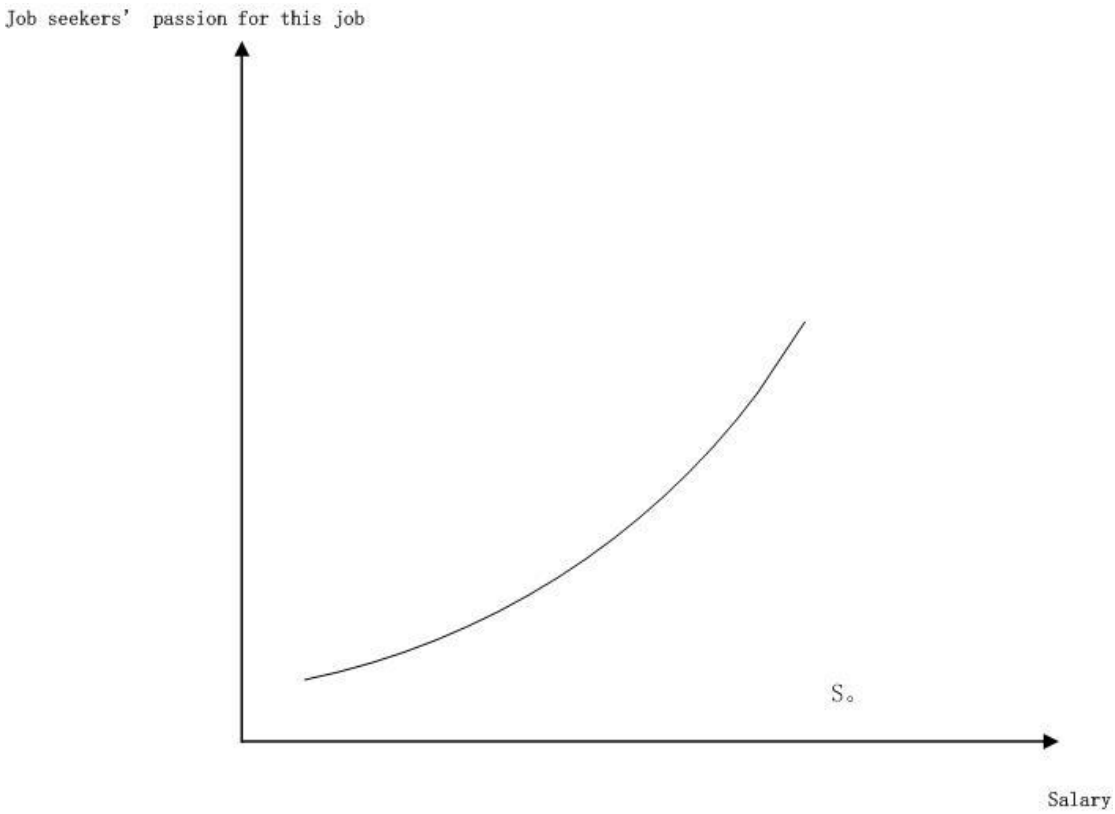
6. Other issues

a) Because the modern society has developed the contract, employee and industry will sign the contract after the industry hires the employee, so during the time of employment, the salary will remain the same. That is why the salary won't be changed for employee that is hired. But because the baseline for the salary would change, so it is likely that the employee will argue with his or her boss to get

higher paid or jump to another industry.

b) Because some companies they are big companies or monopoly companies, they can determine the salary and number of positions for the job position they offered. What would happen if they determine the job position salary and number of positions directly?

Figure 6. Job seeker passion-salary relation

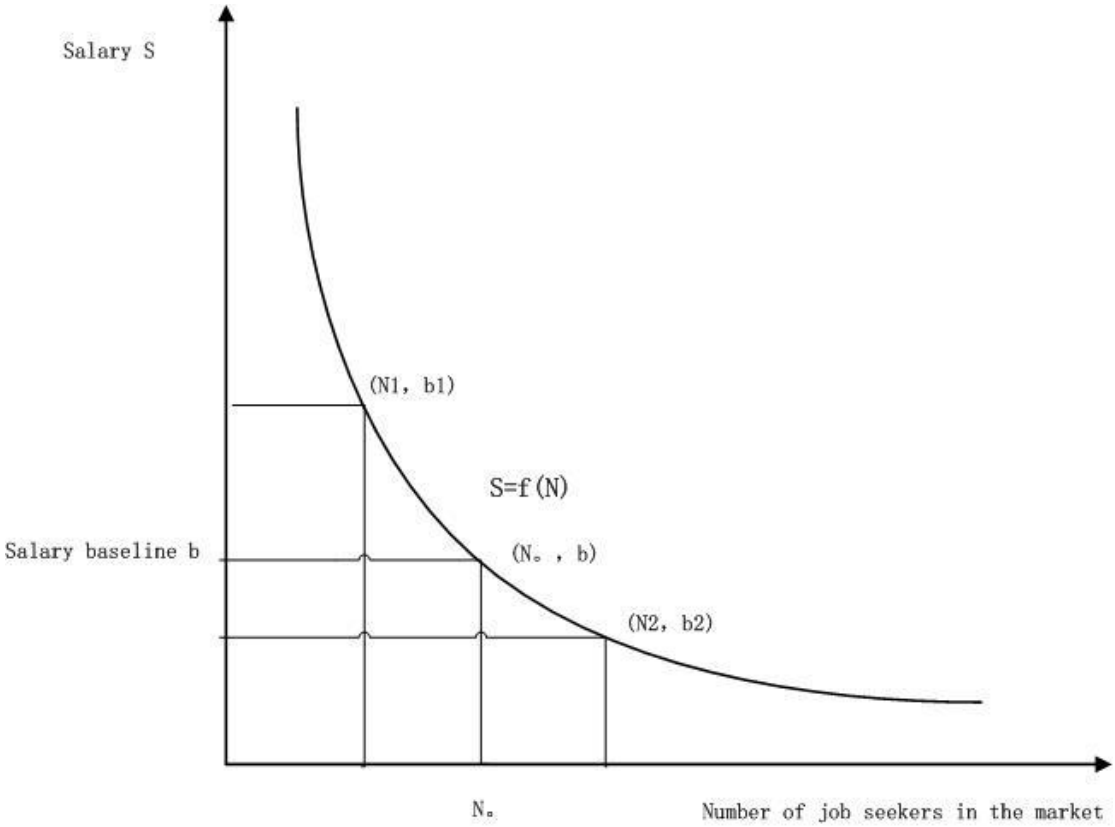


From the upper graph, we could know that if the salary is very high, job seekers have a high passion to devoted themselves to this industry, and vice versa.

So we could know that, if the salary is determined by the company at value b1, from the figure 7 we see b1 is a very high salary, then job seekers will have a high passion to get this job, there will be more job seekers seeking less positions, as the real employment quantity is determined by the lower value of the number of jobs offered by the company and the number of job seekers, it is likely that the quantity of job seekers is above the quantity of positions.

If the salary is determined by the company at value b2, from the figure 7 we could know that it is a very low value, it is not even enough to make a person to make a living in the world. Then people will ignore this job and try to find other one. Then the number of job seekers of this job could even decrease to 0. The real employment number will be the lower value of the number of jobs offered by the company and the real number of job seekers, it is likely that the quantity of positions is above the quantity of job seekers.

Figure 7. Situation where salary can be determined



[1] The general theory of employment, interest and money Keynes