

Transferring the Asset Allocation Model to the Labor Market

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Abstract

Future work environment will get more divers and flexible. Most of the fixed and secure employment set ups will not exist anymore. Therefore the question arise whether a more diversified job set up would give works the security that they need for their life. This paper develops a model based on the asset allocation theory for the labor market and tries to give a hint into the direction of giving people security while they work. The model is created in mathematical terms but also explained in a graphical way as well as through an example based on survey data.

Keywords: Work; Risk; Reduction; Allocation; Theory; Security

Introduction

In modern time the working world follows some dramatic changes. Not that work gets more flexible as ever before, also the number of jobs that we will have will increase. According to Gianga [1] blogger at the weblog “fast Company”, the economy of the future will see new models of employment. Already now 34% of the people in The United States are Freelancer, self-employed or contract workers. In the next 25 years so, will this proportion grow so that entrepreneurial work, part time employment and freelance work will be more the rule than the exception. This developing part time assignments in the job market chances to the work. However the traditional employment role is dying and with that also the security that a working contract gives the employee. According to this trend the paper wants to analyses whether multiple short term assignments can give the employee the same security then one fixed employee contract. Already Graham stated that “putting all eggs in one basket” is not a good strategy when it comes to reducing the risk of investments [2]. Furthermore the theory of asset allocation backs this up and is in this case used as analogy in order to explain the lower risk by allocating the assets [3].

Related research

Many current research papers have looked on the principles of asset allocation and came up with various statistical methods to make a good portfolio selection in order to reduce the risk of the overall portfolio. Pioneer and one of the main influencers is Swensen [4]. The new step that this paper takes is to combine this classical research field from financial theory to the labor market which tend to show a much higher dynamic in the future then it was some decades ago. According to Giang there will be new platforms develop to work as a trading place for labor work. Job security is since some years an issue that changes in the corporate world [5]. This makes the labor market faster changing and flexible so that both companies and employees can profit from that. Research from Diaz-Serrano and O’Neil [6] showed that there is a correlation between the risk aversion of employees and the risk of being unemployment. These results tend to show that also in the labor market is the same relation between risk and the success as in financial markets since employees who tend to be less risk averse had a lower risk of unemployment. This development in the direction of the financial markets makes it interesting to see whether also other principles of the financial marked could hold true for the new faced labor market. In his fundamental work Portfolio selection Markowitz explained the basics for selecting an optimal portfolio. He described furthermore which effect asset allocation has on the overall risk and return of the portfolio. Further studies by Meucci, Pedersen, Sharpe, Campbell and Viceira [7-10] use the basic research of Markowitz and develop more detailed models based of his findings.

Method

All the data used in this paper is secondary. That means that beside examples to the theoretically developed models, the data was collected for other research. In order to develop the model, theory and formulas from portfolio theory and asset allocation, it is used in order to quantify the risk that is given in certain jobs. The collected data was used to test the constructed model and prove the assumptions that lead to the analogy between then financial market and the developing labor market.

Analysis and model development

First the econometric model that is used in this study will be based on approaches from asset allocation. The first part of the model contains the probability of the risk of firing that can occur while working in a certain job. This weights the salary given by a job.

The result is the formula 1:

$$E = p_1 * s_1 + \dots + p_n * s_n \quad (1)$$

To make this model work some assumptions need to be made for the salary. This shows the expected failure of all the jobs in the analysis. However this shows not the effect that occurs throughout the allocation of risk. Since theory has shown that two assets with the same risk have in total lower risk then only one asset with that risk if the event of failure does not occur at same time of this assets. This is aligning with mathematical theory of probabilities. The variance of failure needs to be calculated because the portfolio with lowest risk does not need to have the lowest variance. This formula as well as the standard deviation allow the investor and in this case the employee to measure the dispersion of the selected jobs.

$$V = p_1 (s_1 - E)^2 + \dots + p_n (s_n - E)^2 \quad (2)$$

Following this approach, the standard deviation of the last formula needs to be calculated to show the impact that an allocation of the jobs has on the value of failure. This is presented in the formula

$$\delta = \sqrt{V} = \sqrt{\sum_1^n p_n (s_n - E)^2} \quad (3)$$

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When putting numbers into the model the results show clearly that the risk of getting laid off is lower when working on more jobs than putting all on one job.

Example: When having two jobs with the same risk of failure (getting fired) and the same salary per hour, the application of the model shows following result:

Both Jobs (A and B) should have a risk of getting fired of 60% and a salary per timestamp from 400. When doing only one of the jobs for the doubled time, this would result in valuing the risk with 480. When doing instead job A and B for each one timeframe the overall risk gets valued by 339 which is a decrease of 29% throughout the allocation.

Results

The model and the test of it by using a simple example shows that having multiple jobs helps to reduce the risk and or leverages the outcome by having the same risk. However there are certain critics which limit this model. The model holds only true if the different jobs and with that the risk of getting fired is independent from each other. Furthermore the ability to use this effect is limited by the number of jobs that can be taken without losing efficiency, also limiting could be that such jobs are not available since most employees in central Europe are till now focused on full time employment. This factor of efficiency is also the main point why this way of work could be limited.

Multiple jobs can lead according to current research to a higher stress level of employees and with that the risk of health problems and poverty [11].

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