

Evaluation of the Relation between Rate of Paying of Wages and Capital Productivity on food SMEs in Khorasan Razavi Province (1996 - 2012)

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ABSTRACT

In this article, we have studied the relation of wages and capital productivity in 250 factories of food SMEs in Khorasan Razavi province, and we focused on using of machinery of them, the results shows, there is positive relation between them it means the wages is independent variable and the capital productivity is depended to it, there for if SMEs managers increase 1 % of wages of employees, they can be expected to increase 1.6 % of their capital productivity.

KEYWORDS

Wages, Capital productivity, SMEs

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Introduction

Today has been told “The Customer Comes Second: Put Your People First (Rosenbluth & Ferrin, 2002) instead of “right is for customers” (Ismail, Domil, & Isa, 2014) and wages are the main sources of living for the employees, makes the biggest part of his income and its very effected to his behavior in the working .we believe if employees become satisfy , they can be satisfy to customers otherwise you can not to be expected to be satisfy your customers . Machinery and investments of factories also are the most important property of managers and owners that can be impressible directly from behavior of employees, if they operate them well you can expect to machinery productivity go up.

The definition of SMEs

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The importance of small and medium-sized businesses in the economy in terms of the way that small and medium sized businesses make up a large percentage of the total number of industries. For example, approximately 19 million units (equivalent to 99.8 of existing businesses) in Europe are small and medium businesses in Job Creation in America journal site (Structural Business Statistics & Global Business Activities, 2003)

The definition of small and medium industries in the countries and regions of the world is different in fact, economic conditions and industrial prevailing in each country, representing small and medium industries. Some of the criteria that generally define small industries and Medium used, including number of employees, amount of capital, the volume Finance, total sales volume and production capacity. But the most common criteria for defining SMEs are the standard of number of employees. A literature review in relation to industry, the scale of the Used to define SMEs in different countries. However, there is no an especial definition for SMEs in Iran. However, This study was carried out according to the inquiry, including firms With 49 employees or less. Statistics show that the largest share of value added is for factories with more than of 150 employees and more of that , and the lowest it has been in the business of 100 to 149 employees and medium industries (50 – 149) employees has also negligible shar Ministry of Industry, Mine and Trade.

Entrepreneurship by SMEs

According to the announcement by Iran small industries and industrial parks organozation (ISIPO), most of those entrepreneurs, who have established their businesses for the first time, start with small and medium enterprises toward reducing their investment risk and assessing the market conditions in Iran small industries and industrial parks organization. And in case of success, they increase the volume of their production. This way, they enter to larger economic fields. Hence, the availability of a platform can result in the development of small and medium enterprises as a factor influencing the role of entrepreneurship. Especially the young educated generation in the country, who possess abilities and higher potential for new ideas in different manufacturing fields, can rely on the government support of small and medium enterprises and make investments with greater confidence.. In Iran, by studying the design tips (manufacturing samples) presented by experts, ISIPO has been able to provide huge assistance to investors by placing those samples in their internet site.

Role of SMEs in creation of new job opportunities

One of the main advantages of SMEs is their unique talent in establishing the link between agricultural and industrial production. In both field, SMEs play significant role. They have significant share in producing agricultural products, machinery and necessary tools for their use in agriculture sector.

In the middle of 1960s, the western economists following their theories of economic growth, have stated that “small and medium enterprises” as “a factor of job creation” can be considered a favorable solution to challenge the increasing unemployment in less developed countries. Since the late 1960s and early 1970s, this theory has been discussed in different professional layers of the UN and gained approval in United nation Industrial development organization.

According to the latest survey on the per capita investment costs per employee (job) in SMEs is above 300 million rials, while for creating a job in large industries the average cost is about 100 million rials. Moreover, access to fast employment is possible only through small and medium enterprises; there are too many researches in development countries about these advantages of SMEs (Moradtalab, 2001).

The role of SMEs in economy of Iran

Since, according to the Ministry of Industry, Mine and Trade by the end of 1392 the number of industrial sites in the country less than 50 workers operating license of 83 thousand units, a share of 91.5% of the total number of units allocated to the industrial exploitation license, However, the share of these units 24.4 and 41.2 respectively of the capital and the creation of industrial units per cent (Ismail, et al., 2014).

The share of industrial employment is 3 million and 370 thousand of this amount, the share of small industries one million and 470 thousand people, about 45 percent of small businesses will be in employment (Birch, 1998) Small Industries share in value added 8.16% , output value 17% and exports 10% (Tahmasebi, Feike, Soltani, Ramroudi, & Ha, 2005).

The share of SMEs in GDP during 1992-2012 years

According to the studies carried out by Nily (2006) on the industrial development strategy (based on government request), the calculated share of small & medium enterprises was 25% , while the figure for large organizations was 75 % of the total added value of industry. Due to the availability of the data regarding the share of added value of industry in the total GDP of country issued by the central bank, the share of small and medium enterprises in GDP can be estimated. (Figure 1)

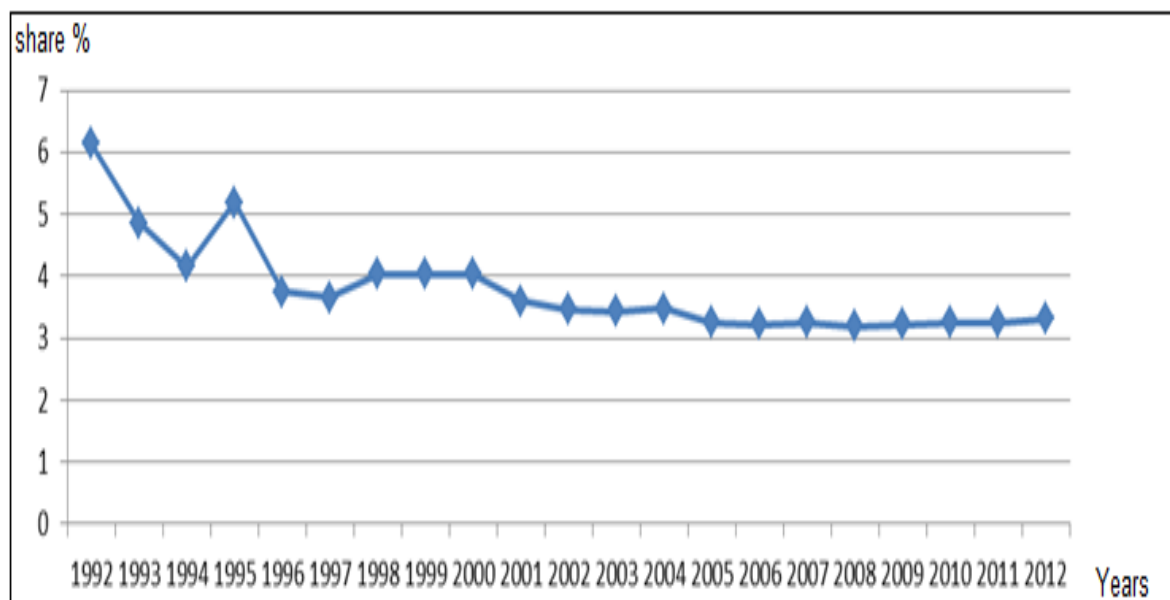


Figure 1. The share of SMEs in GDP during 1992-2012 years

As we see there a lot investments and building to industrial cities but there are not good efficiency of using them specially in SMEs area, then we want to see what is reason , its clearly there are a lot of reasons in this field so we can study only the role of wages in productivity of machinery and instruments , first let us to see the trend of capital productivity in 1996 up 2012.

The trend of capital productivity during 1996-2012

Capital productivity also has a negative trend during of period , as we see it was coming down from number of 5.2 to 4.9 at 2012.the figure of has shown that.

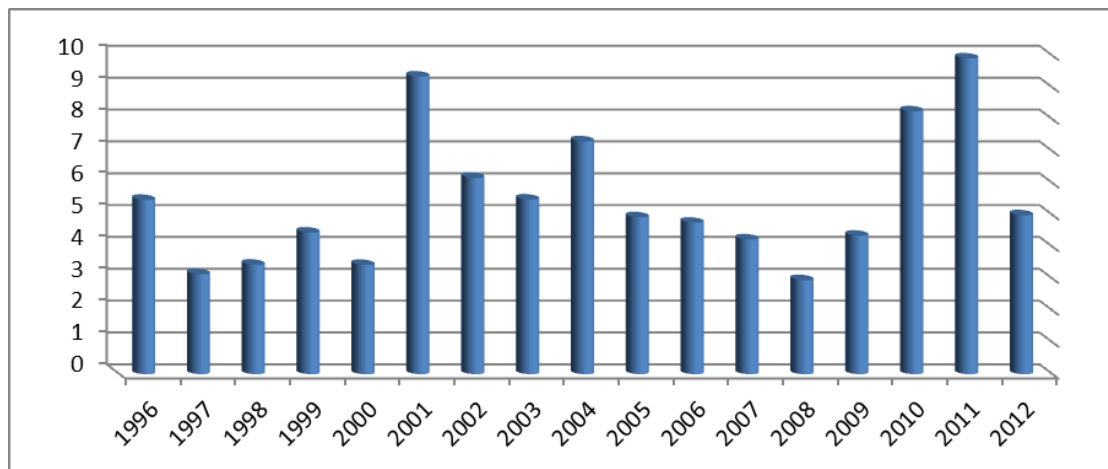


Figure 1 The trend of capital product during 1996-2012 periods

As we see there are a several fluctuation in that periods , average trend of those is also negative around - 2 % any way it can be have differences reasons for that but we can study the role of wages to creation of this problem.

Now we show the trend of paying salary to employees in that period:

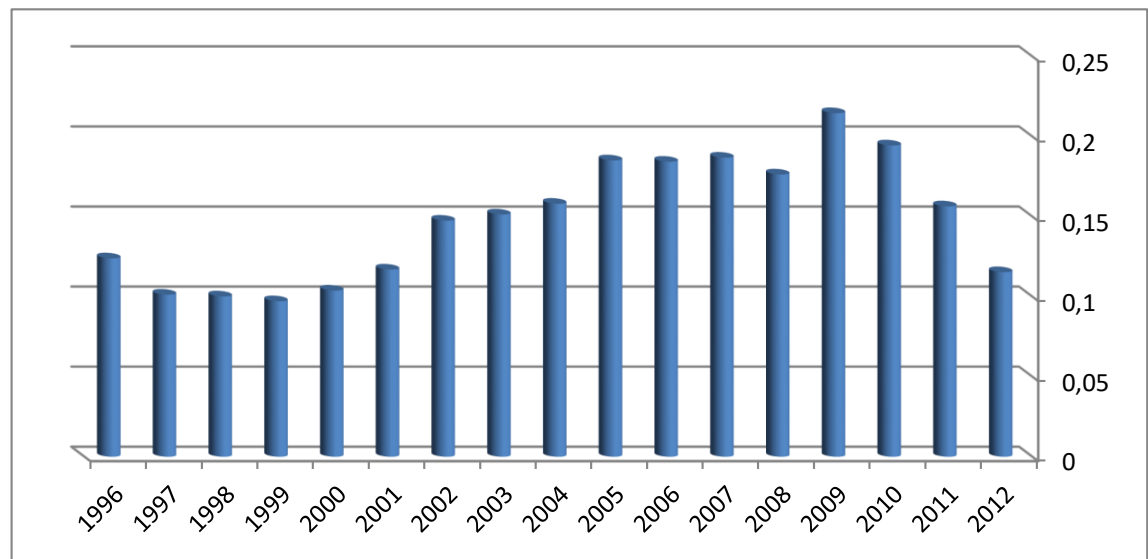


Figure 2 Average of wages¹ per worker during 1996-2012 periods

As we see the average of trend of paying is normal but because of inflation of economy , in fact it has become lower, we have had average 25% inflation in 1996 – 2012.

New investment of capital

This trend showed that we have had less investment for new machinery and as a result we have used less new technology.

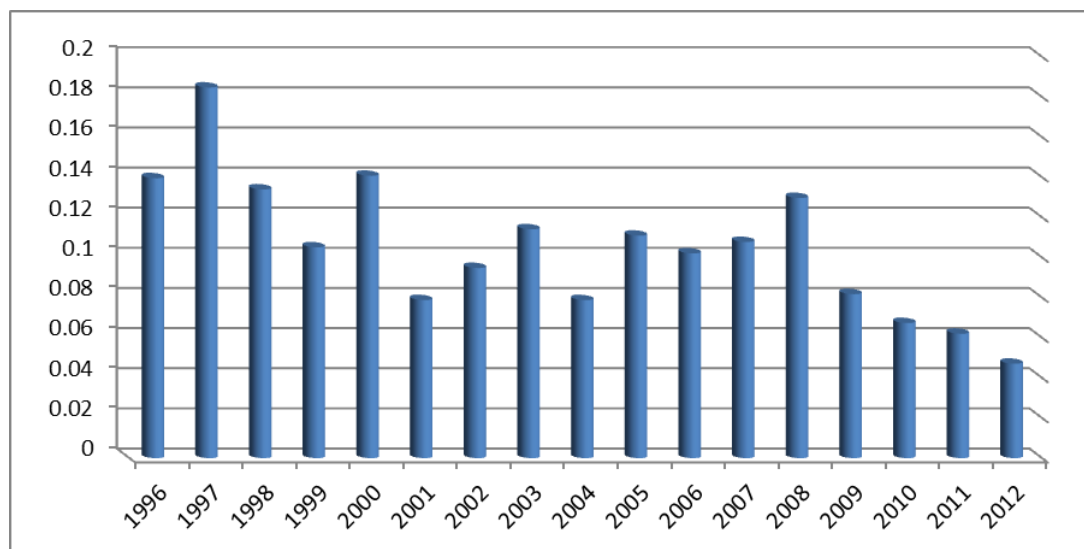


Figure 4. The trend of capital usage during the period under study²

¹ Amounts of wages are with million Rial

The role of influential factors in capital productivity trend

With respect to the factors affecting the capital productivity, the following factors are necessary to be mentioned: The required level of human resources/per unit of capital, the share of human capital per unit of capital, the share of wages per unit of capital.

These means the average labor used per unit of capital, average human capital per unit of capital, average paid wage per unit of capital influence on the productivity of capital.

The capital productivity may be calculated with a method similar to the human capital productivity using the formula 1 below. Hence toward illustrating the influential factors on capital productivity, the assumption is made that production function (formula 1) is first degree homogenous function and its components are divided by K:

$$APK = \frac{Y}{K} = F\left(\frac{L}{K}, \frac{W}{K}, \frac{H}{K}, t\right)$$

(1)

So the average labor used per unit of capital, average paying wages per unit of capital and average human resource per unit of capital and technical progress are affected to improving in capital productivity (Amini, 2002).

As example, the better technique of capital production, the greater the ratio of W/K will be, and the higher will be capital productivity. In the same manner, the better the technique of capital production, the capital productivity will be lower which is as a result of the diminishing return of capital. Therefore, the factors influencing capital productivity will be studied as described below:

Below, in figure 16, there is shown the average wage payment per unit of capital during 1996-2012, which seems was toward increasing incentives.

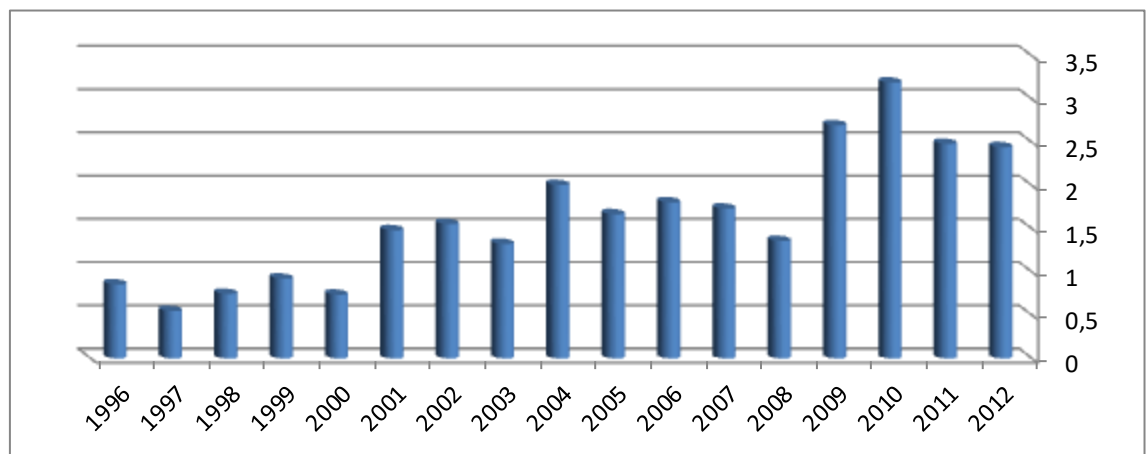


Figure 3 The ratio of wages payment per unit of capital

The similarities between the trend in this figure and the trend of capital productivity figure can be noticed by a careful comparison of the said figures. In addition, the average capital productivity growth during the periods under study was about 4%, which is close to the average growth of the wages to capital ratio that is about 5%. Hence, it is of significance.

Figure 16 is for illustrating the significance of labor motivation increase in the proper use of capital. Therefore, three factors have crucial roles in increasing capital productivity compared to the labor productivity. The factors are as follows:

1. Ensuring the required level of human resources to use available manufacturing facilities and equipment's, or higher L/K ratio that results in productivity growth.
2. Employing training resources or higher share of human capital per unit of capital.
3. Allocation of optimal wage rate for human capital or higher share of wages per unit of capital as incentives to promote efficient use of available capital resources.

The studding of relations of variables

Now we see the table of (ADF) testing:

Table 1 ADF testing ³

Variables	Intercept of ADF	trend of ADF	result
LnLP	-0.52	-4.02 ⁰	Static
LnHC	-0.69	-1.65	Non static
ΔLnHC	-4.36	-3.96 ⁰	static
LnW	-3.44	4.45	static
LnCP	-1.83	-2.77	Non static
ΔLnCP	-4.008	-9.14	Static
LnLK	-2.76	-3.30	Non static
ΔLnLK	-0.52	-6.99	Static

³ Calculated with Microfit soft ware

LnTFP	-0.75	-14.57	Static
LnKL	-2.76	-3.30	Non static
ΔLnKL	-0.52	-6.99	Static
Lninf	0.28	-2.98	Non static
ΔLninf	-6.54	-4.72	Static

This table explains that differences of effected factors to differences of productivity in period of research and we can see also the relations of wages to capital productivity. It is clear that LnW and LnCP are static in this table.

Now here we have shown the calculating of function of long run and short run of coefficients for relation of wages and capital productivity.

Results of estimating long and short run coefficients of second model, the dependent variable is capital productivity

Table 2. Estimation of coefficients the results of the estimation of long-term and short-term coefficients for the second model Dependent variable: capital productivity

Estimating the long run coefficients			Estimating the short run coefficients		
Variables	coefficient	T-statistics	T-statistics	Variables	coefficient
LHC	0.28	3.80	Δ LHC	0.05	1.13
LLK	1.60		Δ LLK	1.29	20.71
15.77			Δ C	-3.06	-14.36
C	- 3.77	-	Δ D2000	0.25	4.24
12.62			Δ T	-0.07	-6.44
D2000	- 0.30	4.02			
T	-0.09	-			
6.94					
R ² = 0.99			F = 186.78		

The results of estimating the long-run and short term coefficients for the role of wages and the ratio to the capital assets in the capital productivity were presented in table 6. The obtained results indicate that, in long run, the influence of wages to capital assets (W/K) on the capital productivity is positive and significant with a value of number 1.60 respectively.

With regard to short run, though the human capital has positive impact on capital productivity, but it is not statistically significant. On the other hand, the ratio of labor to capital, even in short run has positive and significant influence on capital productivity. Moreover it is statistically significant too.

The coefficient of time trend is negative and significant. It is about (- 9) percent and explains the negative impact of other influential factors on capital productivity. The latters because of econometric reasons were not entered in this model. The values of coefficient of determination (0.99) and F statistic (186.78) also approve the scientific reliability of the estimated model. Now having the said values, the final model can be presented by the following equation:

$$LCP = -3/77 + 0/28 LHC + 1/60 LLK - 0/09 T + 0/3$$

In summary, by the results presented in this part, the positive effects of wages and capital productivity.

Conclusion

1) Because of depending of wages rate and efficiency of instruments and machinery in factories , there is a good opportunity for owners to improve their productivity with increase of wages instead of a lot of money for machinery and instrument and else ,this way has very advantageous. Our researches have shown, paying of wages should be with regard of purchasing power so without calculated of inflation, we cannot expect to achieve our goals. Using modern technology is necessary for improving of capital productivity, although we didn't study relation of that but it is important for next researches.

Disclosure statement

No potential conflict of interest was reported by the authors.

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