

## Economic policy impact on competitiveness and efficiency of textile industry in central java

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### Abstract

The purpose of this research was to determine the competitiveness and efficiency as well as assessing the impact of economic policies on the performance of the textile industry in Central Java. The competitiveness methods use a RCA, TSI, and IIT Indexes. The policy impacts use Policy Analysis Matrix and sensitivity analysis. The results show that the textile industry in Central Java had only a comparative advantage, but not competitive one. The lower protection level made the textile industry was vulnerable to both internal and external shocks. In general economic efficiency was still lower, so it had lower effect on the productivity and competitiveness level.

### Abstrak

Tujuan penelitian ini adalah untuk mengetahui daya saing dan efisiensi serta menilai dampak kebijakan ekonomi terhadap kinerja industri tekstil di Jawa Tengah. Untuk melakukan analisis daya saing menggunakan Indeks RCA, TSI, dan IIT. Sedangkan dampak kebijakan menggunakan metode Policy Analysis Matrix dan analisis sensitivitas. Hasil penelitian menunjukkan bahwa industri tekstil di Jawa Tengah baru memiliki keunggulan komparatif saja dan belum memiliki keunggulan kompetitif. Rendahnya tingkat proteksi membuat industri ini rentan terhadap gejolak persaingan baik secara internal maupun eksternal. Secara umum efisiensi ekonomi masih rendah, sehingga memiliki dampaknya terhadap tingkat produktivitas dan daya saing masih rendah.

### Introduction

Complicated problems in the textile industry in Indonesia become obstacles for having highly competitive and efficient industry. According to the Indonesian Textile Association (API) share of Indonesian textile industry in domestic market was still lower, eventhough in terms of quality the local products were still much better. The lower share was due to the competitive price of imported products than the local ones. To increase the market share, the purchasing power of the domestic people must rise so that they will buy the better quality products. Furthermore, the government

should promote the sense of belonging to domestic products.

According to the Department of Industry Republic of Indonesia, the textile sector was threatened to compete with other ASEAN countries. The existing internal problems and competition pressures will impede for development of textile industry in Indonesia. The effect of rising labor wages and electricity basic tariffs in 2012 had pushed industry relocation to prevent the further loses. On other side, the export performance of textile industry was also lower in 2013 due to government policy of relaxing import facility for export purpose in 2011.

The purpose of this article is to explain the impact of economic policies on the performance of textile industry in Central Java, in terms of its competitiveness and efficiency. The competitiveness of the textile industry in Central Java will increase if the productivity and efficiency of the textile industry increase. According Saptana (2010) the basic element of company or nation's competitiveness is efficiency and productivity. The sources of productivity are from technological change, technical efficiency and economies of scale.

According to Zakaria (2009) the competitiveness can be enhanced by technological progress. Competitiveness is created through government intervene and competition. Esterhuizen et al. (2008) defined competitiveness "as the ability of a sector, industry or firm to compete successfully in order to achieve sustainable growth within the global environment while earning at least the opportunity cost of returns on resources employed". Refer to this definition the competitiveness can be defined as the ability of industry in creating added value, efficiency and productivity in a sustainable ways.

A commodity with comparative advantage has also an economic efficiency. However in progress the definition of comparative advantage deviates to the definition of competitive advantage. The competitive advantage is a measure of competitiveness. The competitive advantage is often interpreted as the result of a combination of market distortions and comparative advantage. According Saptana (2010), the distortions source from (1) government policies, either directly such as tariffs or indirectly such as regulations; (2) market distortions due to market imperfections such as monopoly or monopsony. Therefore, the issue of government policy distortions and market distortions are interesting to be examined in this article.

Market failures referred in this article occurs if the market fails to provide a com-

petitive price and efficient outcomes. If the government policies lead to a monopoly and monopsony or a greater negative externality, then these market failures can be interpreted as a failure or distortion of government policy. If government policy is distorted, it means that government policy is ineffective and inefficient. Nevertheless, the existence of this distortion can actually lead to the establishment of a competitive advantage.

In this article, the essences of the competitiveness are efficiency and productivity. The source of productivity is from a change in technology or technical efficiency, economies of scale and economies of scope. In other words, the increase in productivity can be achieved through the technical efficiency, economic efficiency, scope of operations and technological change. The more efficient is the economy then the higher is the productivity so that the stronger is the competitiveness.

The history of developed countries in the world showed that the success of economic development was largely determined by the success of establishing industrial competitiveness. If the industry has higher productivity, the competitiveness of the industry is getting better and ultimately it improves the competitiveness of that nation.

One determinant of competitiveness is the capacity of the human resource. Indonesia was well known for having comparative advantage only because of cheaper labor abundant absorbed by the textile industry. To change the comparative advantage into competitive advantage is necessarily to increase the skills of human resources, the potential of local natural resources as well as a dynamic strategic environment. According Gonarsyah (2007) there are two factors that determine comparative advantage, namely (1) static advantage which consists of natural resources, human resources and strategic location, and (2) learning advantage that consists of education and training as well as local knowledge, dan research capacity that

produces new innovation. This article aims to analyze the competitiveness and efficiency of the textile industry and the impact government policy in terms of wage or input price incentive and output to the textile industry in Central Java.

Principle of comparative advantage says that the exporting countries have higher productivity levels than the importing coun-

try. Goods will flow out of the country with higher productivity to the lower productivity ones. Currently Indonesia has a growing dependence on imported products that potentially raise current account deficit which in turn depreciates the exchange rate (Gaspersz, 2014). According Gaspersz, competitiveness of ASEAN countries were determined by 10 indicators presented in Table 1.

**Table 1:** Position of Competitiveness of ASEAN Countries

No	Indicators	Rank Position (1 = highest; 10 = lowest)									
		Singapore	Brunai	Thailand	Malaysia	Vietnam	Philippines	Cambodia	Indonesia	Lao	Myanmar
1	Global Competitiveness Index, 2013-2014	1	3	4	2	7	6	9	5	8	10
2	Logistic Performance Index, 2014	1	n.a.	3	2	4	6	7	5	8	9
3	Global Innovation Index 2013	1	4	3	2	5	7	8	6	n.a.	n.a.
4	Business Ease Index, 2014	1	4	3	2	5	6	8	7	9	10
5	Worldwide Governance Indicator Ave Index, 2012	1	2	4	3	5	6	8	7	10	9
6	Corruption Perception Index, 2012	1	2	5	3	7	4	10	6	8	9
7	Corporate Tax, 2014	1	5	2	8	5	10	2	8	7	2
8	Labor Productivity, 2012	2	1	4	3	7	6	9	5	8	10
9	Interest Rate, 2014	1	7	3	4	8	5	2	9	6	10
10	Minimum Wage	9	n.a.	5	8	4	6	1	7	2	3

Source: Gaspersz, 2014

Specifically the global competitiveness index. World Economic Forum in the Report The Global Competitiveness Report 2013-2014 posted Indonesia rank in 38th out of 148 countries or rank 5th among the ASEAN countries. The competitiveness of ASEAN countries are: (1) Singapore (ranked 2 out of 148 countries), (2) Malaysia (24), (3) Brunei (26), (4) Thailand (37), (5) Indonesia (38), (6) Philippines (59), (7) Vietnam (70), (8) Laos (81), (9) Cambodia (88), and (10) Myanmar (139).

Based on the level of labor productivity, measured by gross domestic product per worker, Indonesia ranked 5th among the ASEAN countries. The first position was achieved by Brunei Darussalam with the GDP per worker was amount to US\$ 92,300/worker, (2) Singapore (US\$ 92,000/worker), (3) Malaysia (US\$ 33,300/worker), (4) Thailand (USD\$ 15,400/worker), (5) Indonesia (US\$ 9,500/worker), (6) Philippines (US\$ 9,200/worker), (7) Vietnam (US\$ 5,500/worker), (8) Laos (US\$ 5000/worker), (9) Cambodia (US\$ 3,600/worker), and (10) Myanmar (US\$ 3,400/worker).

## Methods

There are many methods used to measure the competitiveness, efficiency and impact of economic policies such as Porter diamond theory, Revealed Comparative Advantage (RCA) index, Trade Specialization Index (TSI), Intra Industry Trade (IIT) Index, General Index of Efficiency, Policy Analysis Matrix (PAM) and sensitive analysis (Cho, 2003; Pearson, et.al, 2005). An effective policy can alter the behavior of producers and consumers in improving their competitiveness so that is able to create new outcomes in an economy. This impact can be explained through PAM and sensitivity analysis. Meanwhile, RCA index analysis, ISP and IIT can be used to measure the level of competitiveness. This research use textile industry data of ISIC 32 (especially 321 and 322) and for further

analysis used ISIC 5 digits starting from 3211 for yarn spinning industry up to ISIC 32210 for garment.

## Revealed comparative advantage (RCA)

RCA is a method to determine the comparative advantage of certain commodities. In other words RCA will identify whether a country is as exporter or importer. In this study, RCA is used to measure the level of export competitiveness of textile industry in Central Java in comparison to national textile industry. The formula of RCA is as follow (Tambunan 2004):

$$RCA = \frac{X_{ij}/X_{it}}{W_{ij}/W_{it}}$$

Where :

RCA is Revealed Comparative Advantage of Textile Industry in Central Java

$X_{ij}$  is the export value of textile and textile product in Central Java

$X_{it}$  is the export value of total commodity in Central Java

$W_{ij}$  is the export value of textile and textile product in Indonesia

$W_{it}$  is the total export value of all Indonesia commodities

The values of RCA range from zero to infinity. If RCA is less than 1 or close to 0, then the lower is the competitiveness of that commodity. If RCA is greater than 1 then the stronger is the competitiveness. Furthermore, using the RCA index is useful for relative comparison purpose. RCA index is the ratio between RCA at year t and RCA at year (t-1). If the RCA index is greater than 1, it means that the textile industry has increasing competitiveness. If the RCA index is less than 1, the competitiveness of the textile industry is declining.

## Trade specialization index (ISP)

The competitiveness of a commodity can also be calculated by Specialization Trade Index (TSI). Based on value of TSI index, an industry can be identified whether as an

exporter or importer. TSI values ranges from 0 to 1. The TSI = 0 means that imports equal to exports. While the TSI = 1 means that there is no import of that industry. If the TSI value  $\geq 0.5$ , then an industry is as an net exporter and if the value of the TSI  $< 0.5$  to close to 0, then an industry is as net importers. TSI can be formulated as follows (Tambunan, 2004).

$$TSI = \frac{(X_{ia} - M_{ia})}{(X_{ia} + X_{ia})}$$

Where:

X is value of exports,

M is the value of imports, and

*i* is index of a specific industry or commodity.

### Intra-industry trade (IIT)

IIT index is to describe the level of trade integration of a product within a particular economy. High value of IIT index indicates a two-ways trade. Suppose Central Java export and at the same time it also import of the same category product/industry. If the IIT values are lower it indicates that trade linkages tend to be one-way, export or import only. IIT formula commonly use method of Grubel-Lloyd Index (Lubis, 2013 and Kucukefe, 2011):

$$IIT = \frac{\sum(X + M) - \sum(X - M)}{\sum(X + M)} \times 100$$

or

$$IIT = 1 - \frac{\sum(X - M)}{\sum(X + M)} \times 100$$

where

IIT is index of Intra Industry Trade

X is exports value and

M is the value of imports.

### Efficiency analysis

To measure the level of efficiency used the analysis model from Cho (2000) as follows.

$$\overline{GI}_{ij} = \frac{\sum_{i=1}^n \left(1 - \frac{TC_{ij}}{TP_{ij}}\right)^n}{n} \times 100$$

Where:

GI is a general index of the efficiency of the textile industry, one is the absolute numbers,

TC is the total cost,

TP is the total production,

*ij* is index of the textile industry in the region of Central Java, and

*n* is the time period, in this research used 12 years during 2000-2012.

In addition this research also used efficiency measurement for competitiveness of the domestic demand. The formula of this model is Cho (2000) as follows.

$$Fd_{ij} = \frac{\sum_{i=1}^n (1 - X_{ij}/P_{ij})}{n}$$

where:

1 is the absolute number,

X is export value,

P is value of production,

*n* is the number of years of analysis and

$Fd_{ij}$  is the index of average domestic demand for the industry.

### Policy impact analysis

The impact of economic policies on the performance of the textile industry can be evaluated by the method of Policy Analysis Matrix (PAM), which is often used in the analysis in the agricultural sector, (Pearson et al., 2005). PAM produces two core indicators measuring competitiveness, namely Private Cost Ratio (PCR) which is an indicator of competitive advantage which demonstrates the ability of the system to pay the cost of domestic resources and remain competitive in market price; and Domestic Resource Cost Ratio (DRCR) is an indicator of comparative advantage showing the number of domestic resources saved to produce one unit of foreign exchange (Pearson et al., 2005).

The economic policies to be concerned in this article are price policy and wage policy. PAM is able to show the impact of individual and collective policy of pricing policies and domestic sectors. PAM also provide base line in formation which is

important for the benefit and cost analysis for investment activities in the field of textile industry. The method of PAM can help policy decision making both at central and regional levels to examine the central issue of the impact of government policy on the textile industry, especially in Central Java Province.

With the PAM method could help to answer the question of whether the textile industry in Central Java is on the level of competitiveness at the current prices, wages, and the. Whether, industry players, especially workers can obtain the benefits of those policies. The differences of private profits before and after the policy shows the impact/influence on competitiveness policy changes at the actual market price and the wage rate.

The use of the PAM analysis method in this study more details can be seen in Table 2 about PAM matrix. The first row of the PAM matrix is the calculations with market price of the textile industry, which is the actual price received or paid by industrial companies. The second line is the calculation of the social value (shadow price), i.e. the price which describes the social value or actual economic value of the resource allocation both input and output. In this research, the private price can be called the actual price or market price. Meanwhile, the social price can be called as well as efficiency price.

Some important indicators of the PAM results can be grouped as follows. (1) analysis of the profit can be seen from the private profitability ( $D = A - (B + C)$ ), and

social profitability ( $H = E - (F + G)$ ); (2) analysis of the efficiency of financial and economic efficiency; (3) policy analysis namely output policy, input policy and input-output policy.

## Result and Discussion

### Competitiveness analysis

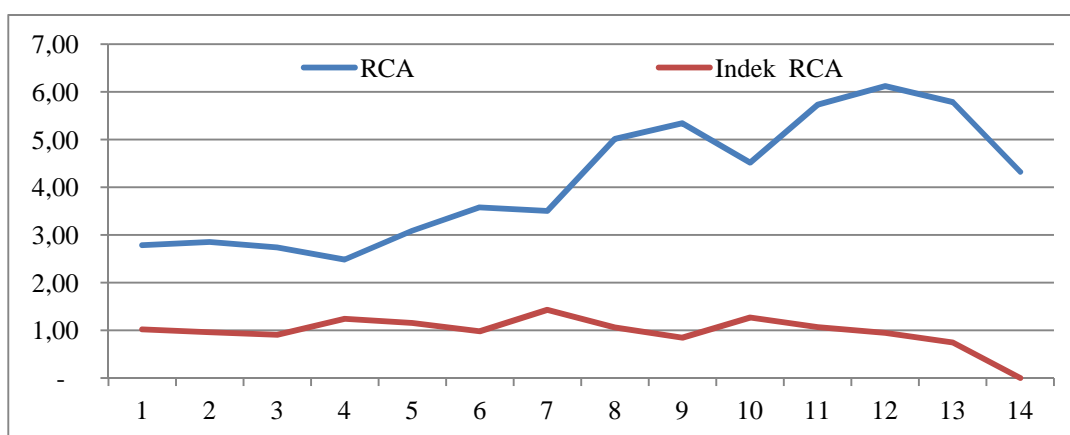
Based competitiveness analysis, the textile industry in Central Java can be said that this industry only has comparative advantage but not competitive advantage yet. Based on the RCA analysis that is more than 1, it can be stated have the textile industry in Central Java have stronger competitiveness. However, if seen from the index value of RCA, the competitiveness of the textile industry in Central Java are even decreasing especially in the last three years since 2010 to 2013. There were trends in market share continuing to decline. According Sunarno (2008) the discriminatory textile quota policy should be abolished so that the market share of textile become larger through international competition.

Based on the TSI index in Table 3, it can be seen that all the TSI values are below 0.5. It can be said that Central Java and Indonesia tend to be importer on textile commodity. It indicates that the competitiveness of textile industry is getting lower. According Thuborn, (2010) in 2007 the overall value of Indonesian textile exports amount was only US \$ 9.73 billion, which ranks 12 for the export of textiles and ranks 8 for garment export.

**Table 2:** Policy Analyzis Matrix

Component	Income	Cost		Profit
		Tradeble Input	Non Tradeble Input	
Private Price	A	B	C	$D = (A - B - C)$
Social Price	E	F	G	$H = (E - F - G)$
Divergence	$I = (A - E)$	$J = (B - F)$	$K = (C - G)$	$L = (I - J - K = D - H)$

Source: Pearson, at.al, 2005



**Figure 1:** Revealed Comparative Advantage of Textile Industry

**Table 3:** Value RCA, RCA index, TSI and IIT

Year	RCA	RCA Index	TSI Indonesia	TSI Central Java	IIT Indonesia	IIT Central Java
2000	2,79	1,0224	0,425	0,33	26,14	51,72
2001	2,85	0,9607	0,423	0,33	26,63	51,13
2002	2,74	0,9064	0,413	0,32	29,68	52,95
2003	2,48	1,2441	0,392	0,32	35,62	52,27
2004	3,09	1,1576	0,432	0,32	23,87	53,37
2005	3,50	0,9797	0,440	0,39	21,43	36,63
2006	5,02	1,4323	0,442	0,43	20,76	24,53
2007	5,34	1,0649	0,431	0,38	24,39	39,58
2008	4,51	0,8452	0,293	0,24	58,57	67,76
2009	5,73	1,2695	0,327	0,29	51,52	59,67
2010	6,12	1,0671	0,276	0,26	61,97	64,03
2011	5,78	0,9454	0,246	0,23	67,45	70,94
2012	4,32	0,7474	0,227	0,22	70,70	71,20
Average	<b>4,17</b>	<b>1,0500</b>	<b>0,370</b>	<b>0,31</b>	<b>39,90</b>	<b>53,52</b>

Source: Indonesia Statistics, calculated

While the result of IIT index indicates the integration between the national textile products and textile products in Central Java Indonesia was still lower. On average the IIT index for Central Java is 53.52 IIT, while for average of Indonesian IIT is only 39.90. The result implies that Central Java have little surplus of trade compared to the national level. Thus, based on the competitiveness analysis measured by RCA index, ISP and ITT it can be stated consistently that textile in Central Java has declining trade integration and tends to become importer of that products.

### Efficiency analysis

Based on the efficiency analysis results of it is obtained that each GI value for the textile and textile product was 13.51%, for textile only is 12.52% and for the textile products such as garment or apparel is 17.89%. It implies that the textile industry is not efficient. The textile industry is less efficient that the textile products industry. those inefficiency happened if we compare with export market share. However the different story tells that textile industry in Central Java has higher efficiency for the domestic market share. It can be evaluated from the Fdij value of 97.98% for the national textile industry and 99.96% for the textile industry of Central Java.

**Table 4:** Value of Technical Efficiency of Textile and Textile Product in Central Java

Sub Sector	2005	2006	2007	2008	2009	2010	2011	2012	Average
Spinning	0,93	0,96	0,91	0,77	0,76	0,87	0,93	0,88	0,88
Textile	0,97	0,83	0,85	0,87	0,98	0,96	0,87	0,89	0,90
Crochet	0,84	0,87	0,93	0,97	0,99	0,85	0,92	0,90	0,91
Garment	0,98	0,99	0,98	0,99	0,96	0,97	0,97	0,98	0,98
Average	0,93	0,91	0,91	0,90	0,92	0,92	0,91	0,92	

Source: BPS (calculated)

Meanwhile, from the technical analysis in Table 4, it shows that textile industry in Central Java has a good level of efficiency, because the average value of technical efficiency was more than 88%. It means that the textile industry only reach technical efficiency and yet economies of scale. The industry also have lower index of productivity level due to lower technological change. Based on these results, the textile industry in Central Java does not have strong competitiveness.

#### Policy impact analysis

The results of PAM method can be grouped into three different indicators, namely; a) profit analysis, b) efficiency analysis both financial and economic efficiency, and c) policy analysis, both for output policy, input policy and input output policy. The calculation result of analysis with PAM method can be seen in Table 5 at the first line (a).

a) Based on the profit analysis it can be seen two indicators, namely; private profitability (PP), and social profitability (SP). (1) The value of private profitability is as an indicator of competitiveness of the commodity based on technology, the value of output, input costs and transfer policies. The research obtained the PP value was Rp169,152 billion which was greater than zero ( $PP > 0$ ). That is, textile industry in Central Java is able to make a financial profit so that the textile industry is able to expand, *ceteris paribus*. (2) The social profitability is an indicator of comparative advantage of textile industry in Central Java. It is based on conditions if there is no di-

vergence, either because of government policy distortions or market distortions. The obtained value of social profit was Rp165,834 billion or  $SP > 0$ . It means that textile industry in Central Java is able to obtain social profit so that having a good comparative advantage.

b) Based on the analysis of financial efficiency and economic efficiency, it can be seen from the PCR indicators and DRCCR. (1) PCR is an indicator of ability of private profitability to pay the cost of domestic resource to maintain the competitiveness. The industry is competitive if the PCR value  $< 1$ . The smaller the value of PCR the higher the competitiveness, and vice versa. The PCR value was 0.5556 or less than 1 that means the textile industry in Central Java is not competitive enough because it closes to one. (2) Domestic Resource Cost Ratio (DRCCR) is as comparative advantage indicator. It show the number of domestic resources that can be saved to produce one unit of foreign exchange. The results show the value of DRCCR was 0.4768 or a smaller than one. It implies that textile industry has a comparative advantage and efficient. The smaller the DRCCR, the higher the comparative advantage. Based on the value of PCR and DRCCR, the textile industry in Central Java has a comparative advantage but not have a competitive advantage.

c) The policy impact analysis can be classified into:

(1) The output policy that can be seen from the two indicators, namely Transfer Output (TO) and nominal protection coefficient on



output (NPCO). Transfer output is the difference between financial revenue and social revenue. TO value  $> 0$  indicates a transfer output from public (consumers) to the industry (producers) and vice versa. TO value was Rp 82,633 billion. It means that there is no transfer of output from the public to the textile industry in Central Java.

Meanwhile, NPCO is an indicator of the level of government protection against domestic textile industry. NPCO value was 1.1653 that means there is the impact of government protection policies against the textile industry in Central Java, but the impact of the policy is lower. If the value NPCO  $> 1$  means there is no protection and the greater the value NPCO means higher impact of protection level towards the textile industry. Previously it has been explained that the fact that the textile industry in Indonesia is still vulnerable to the impact of globalization and the impact of AEC 2015. This indicates that the protection level is still lower.

(2) The input policy aims to make the textile industry can use existing resources optimally. This input policy can be seen from the input transfer indicator (TI) and the nominal protection coefficient on input (NPCI). The results were obtained TI value of Rp19.063 billion, shows that the IT value  $> 0$ , meaning that there is a transfer of cotton farmers to textile manufacturers, and the transfer of the textile industry to the garment, and there is a transfer of labor from the community as well to the textile industry. On the other hand, the results penelitian diperoleh NPCI value of 1.1041  $> 1$ , meaning there is no tradable input subsidy policy, because if the value NPCI  $< 1$ , will be declared no policy input subsidies. In fact, there is no government fertilizer subsidies to cotton farmers and also there is no subsidy to the textile and garment industry in Indonesia. According to Iwan Hermawan (2011) is the main raw material of textiles and textile fiber has the advantage that can not be fully replaced by non-cotton materials. One is easy to absorb

sweat or hygroscopic. Therefore, changes in world cotton prices affect changes in Indonesian textile production. According Istoj (2002) in Hermawan (2011) Indonesian textile industry is very dependent on the supplier and the buyer.

(3) The input-output policy aims to improve high output with optimum input use. Analysis of government policy on the input-output is basically a combination of policy input and output policy above. In PAM models, input-output policy can be seen from three indicators, namely; Effective protection coefficient (EPC), Net transfer (NT) and Profitability coefficient (PC) and the Subsidy Ratio to Producer (SRP).

EPC value is an indicator showing the degree of protection against output-input simultaneous tradable. The government's policy is still to be protective if the value of the EPC  $> 1$ . The larger the value of EPC, meaning the higher the impact of government protection against commodity products textile industry. The research results obtained EPC value of 1.2005  $> 1$ , meaning it can be stated there is little impact of government policies that can protect the existence of the textile industry. Results of this study are consistent with the values young NPCO close to one, so that the textile industry in Central Java, it can be stated is still very vulnerable to interference from other areas of the domestic textile industry, and the textile industry from the outside.

Additionally, in this study obtained NT value of Rp3.318 billion and the value is greater than zero. This means that the textile industry in Central Java is able to receive a net transfer really acceptable industry (manufacturers). Acquisition value of NT is a result of government policy that is applied to the input-output side.

Furthermore, based on the value of PC it is obtained that PC coefficient of 1.0200 or greater zero. This suggests that overall the impact of the government's economic policy is able to provide the insensitive to the textile industry. In addition, the

value of SRP of 0.0066 is greater than 0. The SRP is ratio of net transfer to the social value of revenue. It explains the proportion of shadow price revenue required if a subsidy or tax substituted the complete set of policy. The SRP value is positive, indicating that producers of textile receive a positive transfer or benefit rather than no government policy transfer.

### Sensitivity analysis

Sensitivity analysis is used to overcome the weaknesses of the PAM method which is static because it assumes single price only, whereas in fact the price is quite varied. Therefore, sensitivity analysis through simulation models is to anticipate any changes so that it is more dynamic. Results of the sensitivity analysis are resumed in Table 5.

In this research, there are eight scenarios or simulations in sensitivity analysis. Based on the simulation results the best three policy alternatives are respectively; (i) the policy option by rising labor wages and subsidies on machines will increase the value added of textile industry by 15%; (ii) the policy options by 20% subsidy on the machine only tools by 20% is as the second best alternative policy options. This kind of policy was ever done by

the government during 2013 for the textile industry in West Java; (iii) policy options by rising labor wage by 15%-20% is as the third-best policy option.

From the first best policy option, it is expected to be able to (i) improve the competitiveness since the PCR value shrinks; (ii) is able to improve the protection level either partially or simultaneously. It can be seen from the increases of NPCO and EPC, (iii) this policy options will not increase the production cost but it will reduce costs because of its SRP value remains positive and increases; (iv) this policy is able to increase the added value the best and the most fair. The value of the PCR fall from 0.5556 to 0.3746.

Moreover, the NPCI and EPC value is also higher. It implies that the textile industry is increasingly able to protect themselves, so it does not need any subsidies to improve its profitability. Overall this policy is able to provide the higher and bigger insensitive to textile industry. This is indicated by the increasing value of PC from 1.0200 to 2.1922; and the value of SRP from 0.0066 to 0.1993. This policy recommendations enable the textile industry to improve its condition simultaneously without incurring any additional production costs.

**Table 5:** PAM and Simulation Results

Hasil Analisis PAM dan Skenario Simulasi Kebijakan	Government Policy Impact Indicators						
	PCR <i>PCR&lt;1</i>	DRC <i>DRC&lt;1</i>	NPCO <i>NPCO&gt;1</i>	NPCI <i>NPCI&lt;1</i>	EPC <i>EPC&gt;1</i>	PC <i>PC&gt;0</i>	SRP +/-
a. Normal Condition (PAM before simulation)	0.5556	0.4768	1.1653	1.1041	1.2005	1.0200	0.0066
b. A 15% Wage Increase	0.5601	0.4768	1.6530	1.121	1.1908	1.0013	0.0004
c. A 25% Wage Increase	0.5631	0.4768	1.1653	1.1323	1.1843	0.9889	-0.0036
d. A 10% Subsidy on Profit	0.5556	0.4768	1.1653	1.1041	1.2005	1.0200	0.0073
e. A 20% Subsidy on Machines	0.5462	0.4768	1.2025	1.1041	1.2592	1.0909	0.0073
f. A 10% Fuel and Basic Electricity Increases	0.6043	0.4768	1.1652	1.2118	1.1382	0.8599	0.0073
g. A 10% Input Price Increase	1.1111	0.4768	1.1653	2.1117	0.6190	-0.1313	0.0073
h. A 10% Wage Increase, and Fuel and Basic Electricity Increases	0.6464	0.4768	1.1643	1.3383	1.0639	0.7182	0.0329
i. A 15% Wage Increase and Value Added	0.3746	0.4768	1.6219	1.2508	1.8361	2.1922	0.1993

Source: Indonesian Statistics (calculated)

## Conclusion

The textile and textile products industries in Central Java have not had yet competitive advantage. They only have the comparative advantage with lower protection level. So it is vulnerable from any competitors both from domestic and abroad. In addition, Central Java has tendency to become importer for the textil and textile products. The level of efficiency was still lower and the market share was only able to meet the domestic demand. The policy options to increase the labor wage and simultaneously subsidize on machineries potentially increase the higher competitiveness. The increasing wage is expected to increase the labor productivity while the subsidy is to increase production capacity and level of protection.

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