

**RELATIVES VALUATION OF  
KCE ELECTRONICS PUBLIC COMPANY LIMITED**



**A THEMATIC PAPER SUBMITTED IN PARTIAL  
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KCE ELECTRONICS PUBLIC COMPANY LIMITED**

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**RELATIVES VALUATION OF KCE ELECTRONICS PUBLIC COMPANY LIMITED**

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**ABSTRACT**

This thematic paper involves relative valuation on KCE ELECTRONICS Public Company Limited which indicates the value of the company and investment decision making. I used the concept of relative valuation model which determine a company's intrinsic worth based on its estimated future free cash flows discounted to their present value. Investors may use relative valuation models when determining whether a company's stock is a good buy. The result of the valuation of KCE ELECTRONICS Public Company Limited gathers information from economic, industry and competitor analysis. It shows the fair value of KCE's was lower than market value (the current price as of 27 October 2014) so the stock is "undervalue". Then it is recommended to "BUY".

KEY WORDS: valuation, relative, printed circuit board (PCB), undervalue

47 pages

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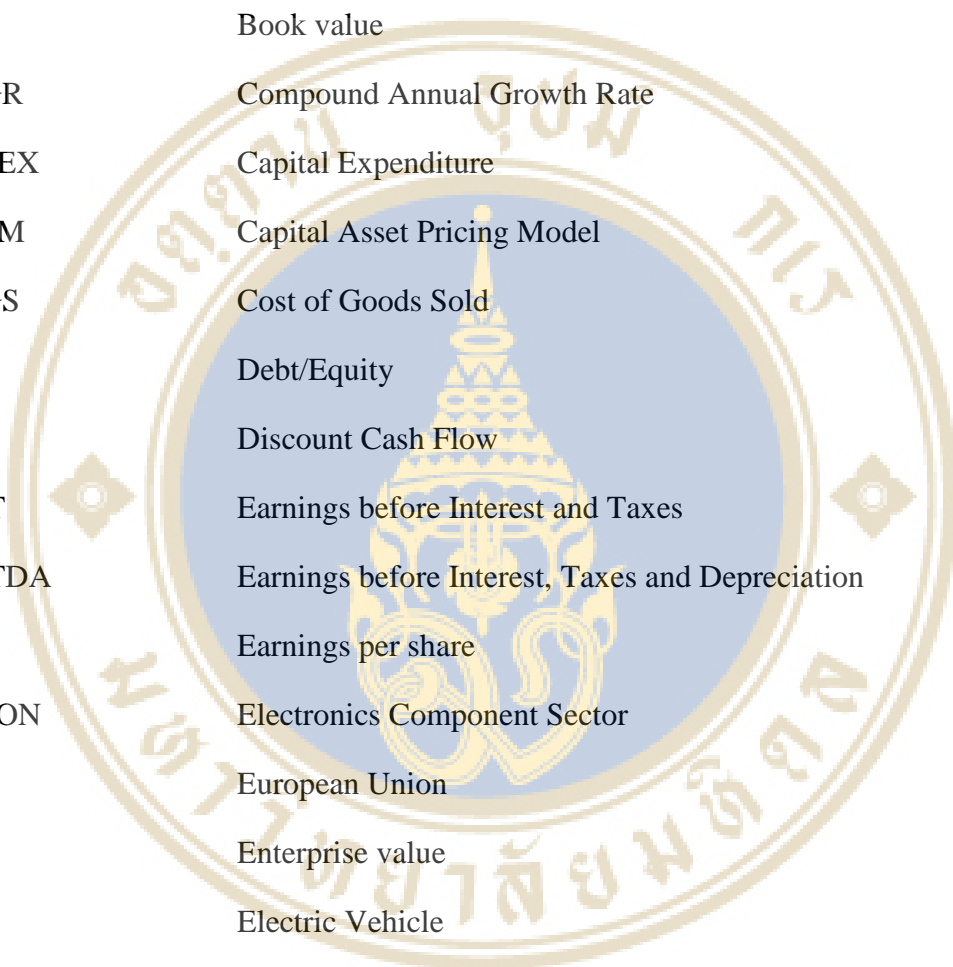


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## LIST OF ABBREVIATIONS



AEC	Asean Economic Community
BV	Book value
CAGR	Compound Annual Growth Rate
CAPEX	Capital Expenditure
CAPM	Capital Asset Pricing Model
COGS	Cost of Goods Sold
D/E	Debt/Equity
DCF	Discount Cash Flow
EBIT	Earnings before Interest and Taxes
EBITDA	Earnings before Interest, Taxes and Depreciation
EPS	Earnings per share
ETRON	Electronics Component Sector
EU	European Union
EV	Enterprise value
EV	Electric Vehicle
FCFF	Free Cash Flow to Firm
FATO	Fixed Assets Turnover Ratio
IBD	Interest Bearing Debt
Kd	Cost of Debt
Ke	Cost of Equity
NOPAT	Net Operating Profit after Taxes

## LIST OF ABBREVIATIONS (cont.)



NOWC	Net Operating Working Capital
P/E	Price/Earnings
PCB	Printed Circuit Board
PPE	Property, Plant and Equipment
Rf	Risk free Rate
ROA	Return on Assets
ROE	Return on Equity
SET	Stock Exchange of Thailand
SG&A	Selling, General and Administrative Expense
SQ.FT.	Square Feet
SQ.M.	Square Meter
TATO	Total Assets Turnover Ratio
TLM	Thai Laminate Manufacturer
TV	Terminal Value
WACC	Weight Average Cost of Capital
WC	Working Capital
YOY	Year on Year

## CHAPTER I VALUATIONS

### 1.1 Highlights

#### **Initiating Coverage with BUY Rating:**

Reaching target price of THB 54.15 at the end of 2014, the upside gain is very high, 21.27%, reflected by the bright future prospect of the company's significant growth in production capacity. Even though the price has been driven up too far during the recent 52 weeks, there're still more upside. Also, we strongly believe that the growth opportunity in both company itself and market for electronic components will be a key driver of KCE stock price.

#### **KCE switched its focus to the new target market, which was a big opportunity:**

KCE's main product, printed circuit board (PCB), is the major component of all hybrid and full-electric vehicles. During the four recent years, the overall automobile-electronics industry has expanded at the rate of 5 to 6%. Moreover, 62% of market share of this market segment belongs to top-ten biggest players of PCBs manufacturers for automobiles only. Since KCE is currently the 6th largest company in the world PCBs manufacturers of automobile industry, this opportunity will directly contribute the overall business of the firm.

#### **By having the 43% revenue growth in 2013 due to recovery from national water flood in 2011:**

The production capacity of KCE had been reverted to its optimum level, which led to 9.9% of net profit margin growth in 2013. Obviously, the demand for the company's main product, PCB, is very high, proven by 94% operating level of capacity utilization for the firm's two major plants production capacity in that year,

2013. In addition, customer base of KCE has continuously increased as a result of more new customers. By announcing a big investment plan in production line, THB 4,645m. in three-phase project planned to complete in beginning of 2015, 2016, 2017 respectively, the production capacity will be doubled after all three phases are completed. This is the key factor to boost the intrinsic value of the stock price.

**Despite concern over a slowdown in Europe's economic recovery:**

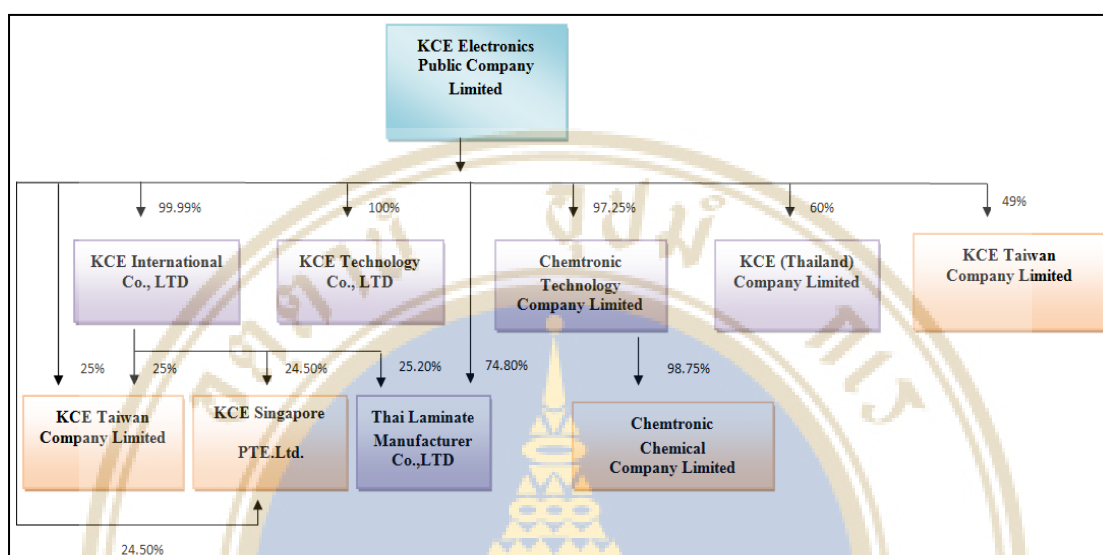
This factor will make a huge impact to the valuation because almost 60% of KCE's customers locate in European Union. With a small fluctuation of European economic, this will result in a big fluctuation to the firm's business.

**Table 1.1 Financial highlight**

<b>Financial Summary</b>						
<b>Fear Ended Dec 31</b>	<b>2011A</b>	<b>2012A</b>	<b>2013A</b>	<b>2014E</b>	<b>2015E</b>	<b>2016E</b>
Total Revenue (Bt,m)	7201	6478	9294	9302	11800	14165
EBITDA (Btm)	837	1383	1897	1526	1782	2191
Net Profit (Btm)	129	717	1182	962	1187	1382
Net Profit growth	-76.39%	455.64%	64.90%	-18.58%	23.36%	16.42%
EPS (Bt)	0.27	1.52	2.46	1.72	2.13	2.48
EPS growth	-76.45%	455.20%	62.19%	-29.88%	23.36%	16.42%
Dividend Yield (%)	9.42%	1.95%	1.41%	1.05%	1.30%	1.51%
ROA (%)***	2.52%	7.31%	10.07%	8.31%	8.71%	8.40%
ROE (%)	8.84%	25.65%	30.17%	19.75%	19.94%	20.10%
D/E ratio (x)	2.73	2.33	1.75	1.09	1.46	1.33

## 1.2 Business Description

### 1.2.1 Company Background



**Figure 1.1 KCE's structure and subsidiaries**

KCE Electronics Public Company Limited (KCE) was established in November 5, 1982 with an initial registered capital of THB 12 million. In 1988, KCE Electronics became a public company listed on the Stock Exchange of Thailand under the technology industry and electronics component sector, ETRON, and converted from a limited company to a Public Company Limited in December 1992. The registered capital is now THB 500 million, paid up THB 471.1 million. The core business is the production and distribution of printed circuit boards (PCBs), which are manufactured from an epoxy glass copper lead laminate, under the “KCE” trademark. In the initial stage, KCE produced only Double – sided PCB. After the development and technological advances, KCE is able to produce the Multilayer PCB, which is high quality and complex multilayer boards. PCB is an essential part of computer, telecommunication devices, commercial, automotive and electronics equipment (Note that: almost all of the PCBs products are produced for export).

In general, the production of PCBs essentially requires up-to-date and modern technology, special technique and accept industry standard. Therefore, the company has to continue developing quality control, production technology and worker skills. In 2012, the company has entered a joint venture to establish KCE Taiwan Co., Ltd., located in Taiwan. It is an overseas sourcing representative for raw materials and machinery for the company and its subsidiaries. Moreover, the company acquired Chemtronic Technology (Thailand) Co., Ltd., which is a PCB ink producer and PCB chemical recycling company. The benefits from the acquiring are not only a reduction in the waste disposal burden, but also the considerable gain from recycling used chemicals solution. As the increase in demand PCBs, the company plans to construct the new plant at LatKrabangto expand the production capacity at the beginning of the fourth quarter 2013. The new plant will have a capacity of 2 million sq.ft. per month, which is equal to the current group capacity. The 1st phase would be operated in the early of the fourth quarter and will generate a capacity of 700,000 sq.ft. per month. It was planned that 2nd phase and 3rd phase would be able to operate in 2015 and 2016 respectively. In addition, in order to support an increased in production, KCE also built a new plant, Thai Laminate Manufacturer Co., Ltd. This plant is aimed to supply the PCB raw materials, prepreg and laminate, to its parent company, so it will support a capacity expansion of the whole business.

### **1.2.2 KCE Group**

**K.C.E. International Co., Ltd.** located at Samutprakarn province. KCE Electronics Plc. holds 99.99% of total shares. Presently, its registered capital is Baht 100,000,000. It was formed with objectives to produce and distribute PCB which is double-sided PTH

**KCE Technology Co., Ltd.** located at Hi-Tech Industrial Estate. KCE Electronics Plc. holds 100% of total shares. Presently, its registered capital is Baht 1,600,000,000. It was formed with objectives to expand the capacity of PCB manufacturing which produce and distribute Multilayer PCB.

**KCE (Thailand) Co., Ltd.** located at LatKrabang, Bangkok. KCE Electronics Plc. holds 60% of total shares. Presently, its registered capital is Baht 3,600,000. It was formed with objectives to be the local distributor of PCBs in Thailand.

**Thai Laminate Manufacturer Co., Ltd.** located at LatKrabang, Bangkok. KCE Electronics Plc. holds 100% of total shares. Presently, its registered capital is Baht 250,000,000. It was formed with objectives to produce prepreg and laminate that is a major PCB raw material.

**Chemtronic Technology (Thailand) Co., Ltd.** located at Ayutthaya province. KCE Electronics Plc. holds 100% of total shares. Presently, its registered capital is Baht 48,000,000,000. It was formed with objectives to be a PCB ink producer and PCB chemical recycling company. The benefits from the investing in Chemtronic are not only a reduction in the waste disposal burden, but also the considerable gain from recycling used chemicals solution.

KCE also has sales offices in Singapore, Europe, America, Mexico, Japan, Korea, China and Thailand. It is offering full commercial and technical support to the customers worldwide. For the revenue structure, KCE has three segments, which are manufacturing and distributing of Printed Circuit Board, manufacturing and distributing of prepreg and laminate, and manufacturing and distributing of Chemical. In addition, each individual division provides the different products and services, and separates the management, which has different technology and marketing strategy.

KCE is currently 33.81% owned by the Ongkosit family. And, Mr Bancha Ongkosit who is a Chairman of the Executive Board holding 12.48% of KCE's issued shares.



### **1.3 Macro-Economic Analysis**

#### **Fluctuation in gold and copper prices:**

Price of gold and copper based on economic growth. Gold and copper which are compositions of laminate, copper foil, copper anode and gold salt are the raw materials for PCB production. Therefore, PCB products have a price risk depending on the market price of gold and copper. According to the Gold price, the price tends to drop to USD 1,251.90 per ounce as of July 2013, and has been decreasing by 1.7% to USD1230.8 per ounce in 2014. As an expected result of US FED economic stimulation program, the raw material prices would be affected by an inflation rate. Since gold is regarded as an inflation hedge, any indication that prices aren't rising, the situation has prompted investors to sell gold. Including, the European Central Bank had decided to pursue an increasingly accommodative policy to fight deflation, while China also has pursued its stimulus program to put its economy back on track. Therefore, these factors are likely to make the US dollar become stronger and weaken gold prices.

Copper is also the main raw material representing 10-13% to the product price. The price of copper had increased during Q1 2010, but came down towards the end of Q2 2011 continuously. For the price of copper, it also tends to decrease following the gold price. For the mining industry, a rebound from the recession was swift largely due to demand for resources from rapid growing nations, China and India. Also, with the world GDP tends to recover, it affects the price of gold and copper to be lowered. Thereby, the changes in price of gold and copper directly impact the cost of raw material of PCB production, especially, laminate, the main raw material in PCB production. Therefore, if laminate price is high, the PCB price also high as well.

#### **Change in Exchange Rate:**

Bath Appreciation Affects the Export Business. As most of company's products are aimed of exports, more than 85%, the baht volatility will affect the firm business. Also, changing in exchange rate has a significant effect on revenue and cost of production as various foreign currencies have been involved in the firm's business.



Since the exchange rates are directly related to the purchase of raw materials and sale of the products. Sales are mainly in two currencies, 75% in USD and 20% in Euro, while 50% of its cost is recorded in USD. The ramping up of KCE's capacity as well as THB depreciation against both USD and Euro would result in higher sales and better gross profit margin. Therefore, every 1% depreciation in THB, KCE's operating profit will increase by 5%. For the recent recovery trend of Thailand GDP, it makes higher cost of production. However, KCE always performs hedging on foreign currency to avoid currency fluctuation.

#### **Impact from Asean Economic Community (AEC):**

Positive Impact from AEC would contribute Asean economy. With the implementation of tax-free scheme for AEC members, this will stimulates the AEC investors to trade their products for import and export. Moreover, the foreign investors tend to increase investment across AEC countries as a result of Asean economic growth. In KCE's point of view, AEC would gain benefit from a good opportunity in expanding its PCBs market into Asean region, since the benefit from tax is presented across AEC countries. Especially, Malaysia and Indonesia are the countries with having big automotive and electronics industries. These industries require PCBs as the major components of their products. In our expectation, with import and export tax-free scheme, these countries would seek for more PCBs raw materials supplied by the manufacturers of AEC members. Thus, this will be a good opportunity for KCE to expand its PCBs market. However, concerning a free-movement of seven professions across AEC countries. Thailand may face shortages in these seven professions if Thais are lured by higher salaries in other countries. Specifically, for engineering profession, KCE would be impacted, since this kind of liberalization can freely switch to work in other AEC countries with better income.

## 1.4 Industry Analysis

### Electronics Industry:

The Electronics Industry Has Grown Steadily. Global electronics industry is one of the biggest industries, which is divided into many sectors such as telecommunication electronics, computing electronics, consumer electronics, industrial electronics, automotive electronics and etc. In overall, the electronics industry is intensive competition and steady growth. For the growth in the industry, this was resulted from rapid technological change, relatively short product cycle and pricing and profitability pressures. The electronics market consumers are changing into new products, which are made for frequent basis such as new consumer-related robots, Android running on Windows PCs, new digital cameras and smarter digital video recorders. As serve the evolution of existing products, the consumers are willing to fulfil and update the new technology as their preferences. Also, the features that they want are converging. Therefore, the new technology may be considered as a developing segment within the electronics consuming market and lead to an increase in revenues. Moreover, electronics are used everywhere and every time, in homes, cars and offices. Therefore, the electronics market is a huge mature market.

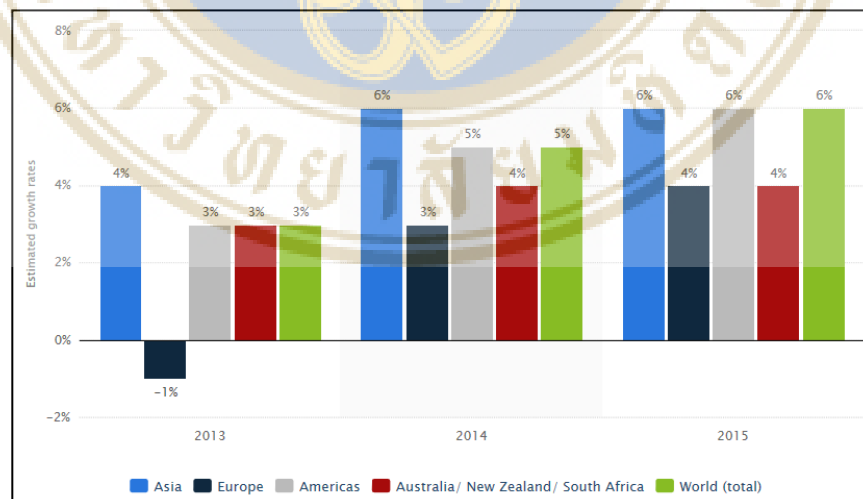


Figure 1.2 Estimated growth rates for the global electronics industry 2013 - 2015

### **Printed Circuit Board Industry:**

For Printed circuit board growth in Asia, according to the global market trend of electronics component, the world PCB output is projected to reach USD63.5bn in 2017 (from USD55.7bn in 2013), since the demand of electronics products has grown up.

### **The Majority Growth Takes Place in China by 48%:**

In detail, The PCB production in China has grown and market share has been increasing continuously due to the government stimulation scheme and lower production cost. Thus, China is an attractive market for PCB products, since the electronics manufacturers around the world have searched for lower cost of raw materials. As a result, the giant countries of PCBs manufacturer, such as American, Taiwan, and Japan, had relocated their production plants to China. Moreover, with massive orders, Chinese PCB manufacturers benefit from economic of scale as well. However, this is the source of intense price competition for PCB product. In the future, China is going to be Asia's largest PCB manufacturer, with approximately 48% market share. Also, Taiwan and Korea are the second-largest with 14% market share, and followed by Japan with 9% market share (decrease from 11%).

In Thailand, most PCBs products are mainly served for telecommunication, computers, and electronics industry. Unfortunately, price competitions of PCBs, as raw materials, in these industries are quite intense.

In US and Europe, recently, there has been a present in decline trend of PCBs outputs reflected by the higher cost of production. Moreover, generally, the PCBs manufacturer in US and Europe pay more attention on quality of the outputs rather than quantity (i.e. high technology and precise production process). In addition, the target markets for both of them are defensive and specific, which are military products and medical devices.

As a conclusion, for any PCBs manufacturers with old fashion production process and heavy relying on imported raw material, they will be actually impacted by the world most powerful PCBs manufacturer, China, in the matter of cost saving. Also, since modern production technologies contribute to lower cost, less deflection in products, as well as higher quality, it would be impossible to survive for any PCBs

manufacturers who're unable to develop themselves into the modern competitive market. Also, for the current leaders in the market, there is a big challenge for them to maintain their leading positions.

### **Automotive Industry:**

Trends in hybrid and electric car market are upturn. The automotive industry is a very large sector, proven by 2 trillion USD working capital and 5 billion USD revenue for the whole market. Thus, the market of automobile sectoring in electronics is moderately competitive. According to a projection by Nikkei, a Japanese stock market index, the automotive industry has improved during 2013 and is expected to improve further due to an expansion in the global passenger car market. As a result, there will be higher demand of fuel in the future. From the late 20<sup>th</sup> century until now, demand of fuel had significantly increased, while supply became more and more limited. Therefore, oil price has been globally increasing over the recent years. Alternatively, in order to ease this problem, there has been an increased focus on the development of hybrid and electric cars. Fortunately, PCBs is an essential component for these types of vehicles, so this situation will advantage PCBs market. Moreover, embracing the smarter cars, these cars' connections to internet will be facilitated either directly via embedded 4G radios or through shared smart phone connections. For PCBs, as the major component, there is the positive outlook for PCBs in the automotive electronics manufacturing industry.

## **1.5 Competition Analysis**

### **1.5.1 Competition Opportunities**

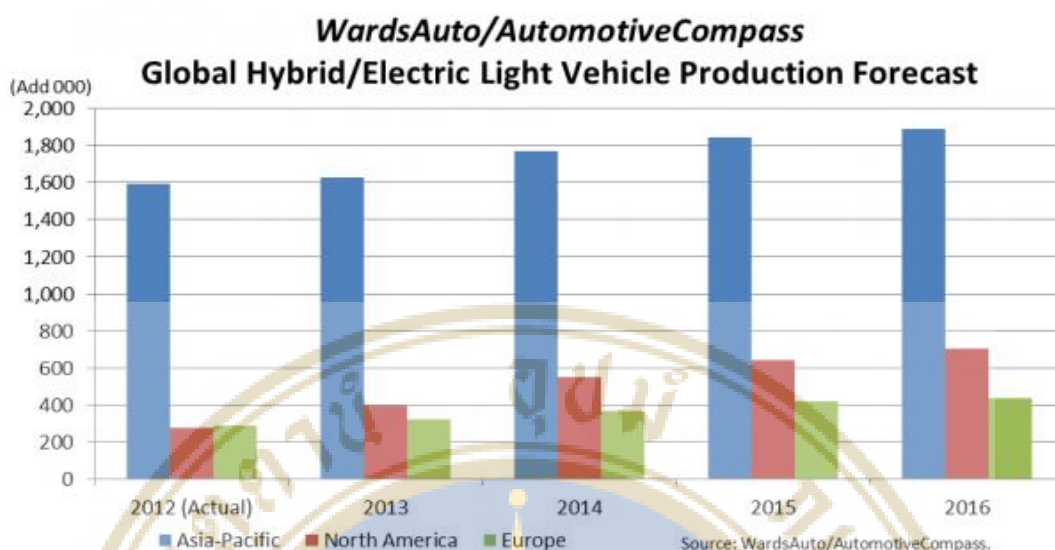
#### **Lower raw material cost:**

Since KCE has invested in Thai Laminate Manufacture Co., Ltd. (TLM) as subsidiary, this company produces Laminate and supplies all materials to other PCB plants of KCE. Therefore, by having TLM as its subsidiary, KCE will benefit from cost saving as the firm's able to control the cost of raw materials and certain the availability of key raw materials. Moreover, KCE can optimize the usage of materials.

Whereas, the competitors have to order or import the raw materials from suppliers, so KCE's competitors may have lower competitive advantage in cost control than KCE.

**Incorporate with many car brands:**

With moderate competition in automotive electronics sector, the company is facing the competition from local, regional and large international providers of PCBs. However, as product liability and responsive customer service as well as support, the company is able to compete with others competitors. Moreover, sales to the automotive industry have improved during 2013 and are expected to improve further in 2014 due to an improvement in the global passenger car market. In Europe, Asia, and the North America, obviously, these regions have already shown a positive prospect for light vehicle sales. High market growth of this segment would be mainly in North America, but Asia-Pacific region will continue to dominate global hybrid/EV production, especially in Japan. Hence, KCE gets the benefit from the vehicle sales growth as KCE's PCBs are incorporated in many car brands such as Mercedes, BMW, Volkswagen, Toyota, GM, Fiat/Chrysler and Ford. Thereby, KCE growth will increase following the light vehicle sales growth as well. In terms of volume, Toyota is expected to be able to maintain the biggest hybrid/EV gainers in the next three years. Other projected leaders include BMW, General Motors, Honda and Nissan. KCE is among the top five automotive PCB suppliers globally, among the top 50 of all PCB manufacturers globally and one of the largest in Southeast Asia. The company has sales offices worldwide and five factories throughout Thailand.



**Figure 1.3 Global light Vehicle Growth by region**

**KCE has the largest PPE comparing with other PCBs manufacturers:**

Being the owner of five factories (in Thailand) makes KCE become the biggest PCBs manufacturer in Thailand with a huge investment in property, plant and equipment. Today, the PCBs output is about 186,000 square meters per month with almost full utilizing its production capacity. Moreover, currently in the process of establishing a new factory next to its headquarters in LatKrabang, Bangkok, the production floor will be over 500,000 sqft and once all phases are completed, the PCBs production capacity will reach 2,000,000 sqft/month. For the first phase, it will add 700,000 sqft/month of capacity and be completed in 3Q14. The second and the third phases will be completed in year 2015 and 2016 respectively. With the completion of construction of KCE's fourth PCB production facility later in 2014, KCE will be ideally positioned to capitalize on the projected growth in PCB demand in the forthcoming years. To support the increased production requirements, KCE Group's laminate factory, Thai Laminate Manufacturer, will also embark on an expansion of its laminate production capacity.



### 1.5.2 Comparison to Major Competitor

**Domestic Competitor:** KCE is the only PCBs manufacturer who is listed in SET. Also, KCE is the single biggest PCBs manufacturer in Thailand without having any relative size of domestic competitors. Although, there are other private PCBs manufacturers, the size of their total assets and revenues are relatively small compare to KCE. For example, Circuit Electronics Industry co.,ltd. is one of the private manufacturers, but approximate revenue of the company was only 31million THB in 2011.

**Foreign Competitor:** Describe the fact that 75% of KCE revenue in 2013 came from export sale of PCBs to automotive industry. Including, KCE was the 6<sup>th</sup> largest PCBs suppliers of worldwide automotive industry in 2013. Therefore, it would be better to compare KCE with one of the top 10 suppliers in PCBs automotive industry

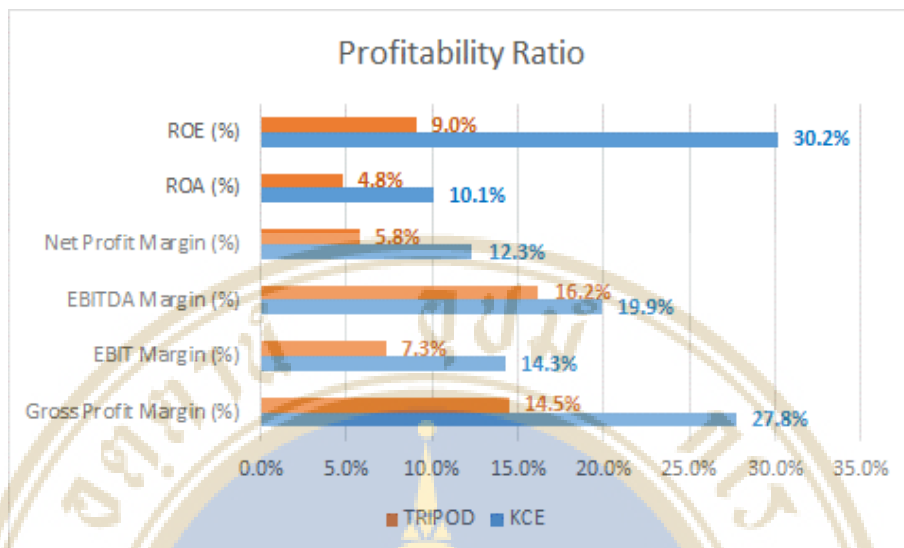
**Table 1.2 Top 10 PCB automotive makers**

RANK	MAKER	COUNTRY	REVENUE (\$M)
1	CMK	Japan	488
2	Chin Poon	Taiwan	472
3	Meiko	Japan	381
4	Viasystems	US	353
5	Nippon Mektron	Japan	260
6	KCE	Thailand	210
7	Tripod	Taiwan	160
8	AT&S	Austria	150
9	Elna	Japan	110
10	Unitech	Taiwan	102
Top 10 Total			2686

Tripod Company, Taiwan PCBs manufacturer, is taken to compare with KCE, since both of them were direct competitor in top 10 worldwide PCBs automotive makers. As 6<sup>th</sup> ranking for KCE and 7<sup>th</sup> ranking for Tripod, the competition analysis between these two companies is appropriate due to close amount of PCBs automotive revenue in 2013.

Efficiency ratios, concerning on Gross Profit Margin, Net Profit Margin, ROA, and ROE, KCE's performances were better than Tripod in every dimension of profitability.

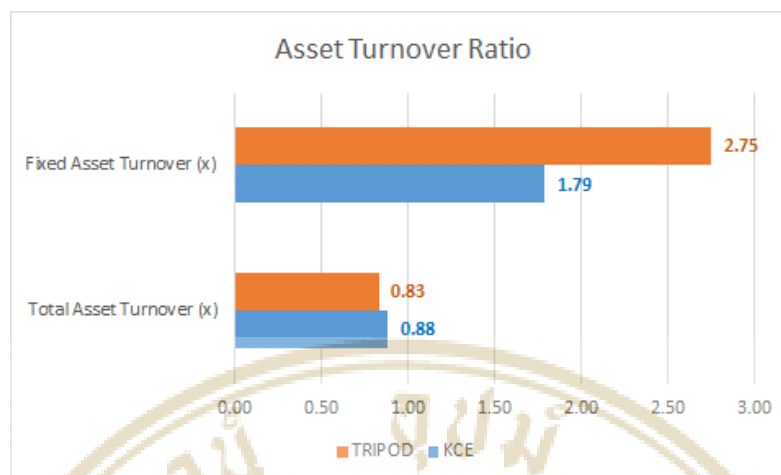
They were reflected from KCE's better managements of COGs, Selling and administrative expenses, and income tax



**Figure 1.4 KCE and TRIPOD Profitability Ratios**

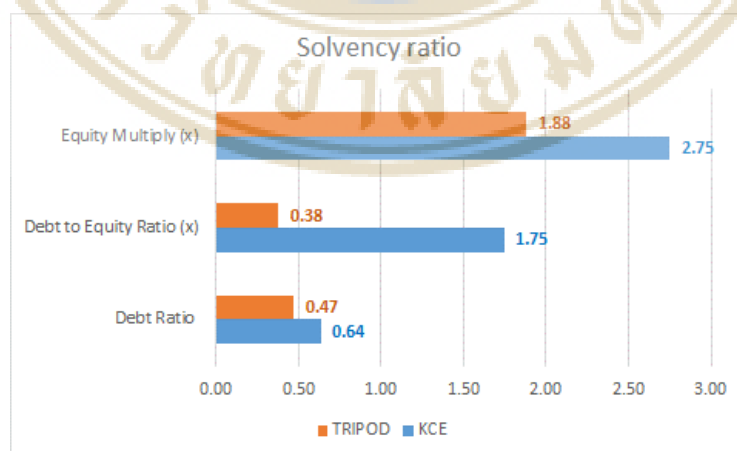
However, for Fixed Asset Turnover ratio, the most important key determinant factor in electronics component production industry, this ratio of KCE was lower than Tripod. Therefore, it implied that KCE requires higher amount of fixed asset to generate one unit of sale compare to Tripod. As a result, in order to generate more sales, KCE had to invest in PPE more than Tripod and required more capital. KCE might lose competitive advantage if the firm could not finance high amount of required capital expenditure.





**Figure 1.5 KCE and TRIPOD Asset Turnover Ratios**

Higher solvency and interest coverage ratio than close competitor, Tripod, made KCE riskier in term of credit risk. Therefore, the WACC of KCE would be higher due to higher risk than competitor. Also, extremely lower interest coverage ratio than competitor and industry average directly impacted the credit rating of KCE if the firm planned to issue debenture or corporate bond in the future. Moreover, the country credit rating of Taiwan (A+) is higher than Thailand (BBB+), so if KCE needed to be financed by foreign financial institute, the financial cost will be higher as well. As a result, KCE's enterprise value, EV, and other parameters related to WACC will be affected by higher cost of capital.



**Figure 1.6 KCE and TRIPOD Asset Solvency Ratios**

## 1.6 Investment Summary

### **KCE focus on Automotive and high-tech product:**

KCE focuses on high-tech products, which provide higher gross margin together with simultaneous expanding customer base. From continuous growth in automobile industry, KCE considers this industry as their future opportunities. Although the competition in this industry is somewhat intense, an increase in demand of high-tech PCBs products to support production of innovative automobiles (i.e. hybrid and electronic car) would be a good contribution for KCE. Concerning the world's megatrend of innovation, more customers are going to point out their attentions on more complex, higher quality and smaller size of the product. Now, KCE is ready to catch up, gains advantage, and follows the world's megatrend of innovation.

### **KCE increase their capacity as expand the facility:**

Due to high demand of PCBs, KCE decided to expand its facility to support more production capacity. The company has invested THB4.6bn to expand 185,000 sq.m. per month production capacity of PCBs by building another facility in LatKrabang Industrial Estate. From this expansion, KCE will be able to meet increasing orders from both existing and new customers. At full capacity of new installed plant, the company will be able to grow its revenue by 25.5% per annum on average.

### **KCE is expected to pay high dividend:**

KCE pays dividend in respect of the company's operating result at each period. The operating profit increase as result of high economic of scale in production so the payment of dividend will increase following its growth. Moreover, KCE is a company in SETHD. SETHD shows and ranks the companies in SET, which pay high dividend. Especially for KCE high dividend payment is an essential strategy to stimulate investors to invest in the firm's stock. In the past, KCE used to pay dividend over net income by using excessive cash. In addition, treasury shares had been done during some years in the past together with dividend strategy as well.

**KCE can decrease its cost of goods sold:**

In 2013, KCE acquire Chemtonic Technology (Thailand) Co., Ltd. This acquired firm produces PCB ink and PCB chemical recycling. The facility can reduce the waste disposal burden. Thus, it reflects by decreasing in the cost of goods sold from 80% in 2011 to 72% in 2013. Also, proportion of COGs to sales is estimated closely to the presented number in 2013 (75% of sales). Decreasing in cost of goods sold is reflected from good management in the manufacturing operation, which enables high capacity utilization level and improves efficiency. In addition, better cost management is mainly supported by continuous cost control, achievement of targeted scrap and raw material and supplies cost reduction.

**Increase joint venture to support sale representative:**

In 2012, KCE entered a joint venture to establish KCE Taiwan Co., Ltd., located in Taiwan, which is an oversea sourcing representative for raw martial and machinery for company and subsidiary. Therefore, the company does not only reduces the cost of goods sold, but also increases product distribution channel. Moreover, the company has joint venture in Singapore and America as sale representative in oversea for distribution.

**Corporate Governance rating is very good:**

As a result of KCE's efforts, the Stock Exchange of Thailand and the Securities and Exchange Commission positioned KCE as "Very Good" in 2013. The rate is ranked by concerning the overall dimension of the company's transparent management. KCE focuses on clarity, fare treatment and full accountability to the shareholders. Moreover, the KCE board of directors perform their responsibility with loyalty and attention. As a result of very good corporate governance, the company has developed its operation and management continuously to maintain the trustworthy position.

## 1.7 Valuation

### 1.7.1 Trailing Indicators:

All trailing indicators are used to determine whether the current price of KCE is expensive or inexpensive comparing to its industry, index, and historical data.

**Trailing PER of KCE was ranked at 4<sup>th</sup> position in ETRON sector.**

On October 27, 2014, the market perception toward stock price of KCE was 11.35 times of its earning per share. KCE trailing's PER was the 4<sup>th</sup> position in the ETRON sector, while PER of the lowest four companies were undetermined (having negative earning). The conclusion toward the KCE's price on October 27, 2014, reflected from its peers in ETRON industry, was acceptable. (Neither overprice nor underprice). However, comparing to SET100 and ETRON (the two indices of KCE), the 12 months trailing PER of KCE was the lowest. Therefore, by comparing to both indices, it can imply that the price of KCE on October 27, 2014 was inexpensive.

### **The momentum indicator of KCE PER:**

At the end of 2014, the level of KCE's PER was lower than the median. Also, the number of PER almost reach the lower 2<sup>nd</sup> standard deviation. Therefore, the trailing PER at the end of the year comparing to the whole year indicated that the price of KCE at the end of the year was inexpensive.

### 1.7.2 Forward Indicators:

The forward indicators are used to determine the fair piece of KCE reflected by the future EPS, BV, and EBITDA.

### Forward PER multiple

It's a measure of the price-to-earnings ratio (P/E) using forecasted earnings for the P/E calculation. While the earnings used are just an estimate and are not as reliable as current earnings data, there is still benefit in estimated P/E analysis. The forecasted earnings used in the formula can either be for the next 12 months or for the next full-year fiscal period.

In order to determine the fair price of KCE, the PER multiple method is used. The process to determine the fair price from this multiple is performed by taking the forecasted 2014 future earnings of KCE's peers. In this case, forward PER of Delta electronic, HANA, and SVI company were used as the market indicator, since the three companies had similar size and product as KCE (compare apple to apple). Then, in order to determine the fair price, the full year future earning of KCE in 2014 will be taken to multiply with forward PER

Rather than taking forward PER from the peer group, the Justified PER from 2-state growth model is also used to determine the fair price of KCE. Finally, the target price from this model is THB 38.14.

**Table 1.3 Justified PER from 2-state growth model**

Justified P/E Ratio (2-states growth Model)	2014
abnormal growth (CAGR)	22.48%
Stable growth	4.65%
Dividend payout ratio (abnormal g period)	25.00%
Dividend payout ratio (stable g period)	50.00%
abnormal growth period	5
Ke (same between normal and abnormal g period)	9.22%
<b>Justified P/E</b>	<b>22.12</b>
<b>multiply by: EPS (2014)</b>	<b>1.72</b>
<b>Target Price</b>	<b>THB 38.14</b>

### Forward PBV multiple:

In order to determine the fair price of KCE, the PBV multiple method is used. The process to determine the fair price from this multiple is performed by taking the forecasted 2014 future book value per share of peer group. In this case, forward PBV of Delta electronic, HANA, and SVI company were used as the market indicator, since the three companies had similar size and product as KCE (compare apple to apple). Then, in order to determine the fair price, the full year forecasted book value per share of KCE in 2014 will be taken to multiply with forward PBV of the peer group.

The Justified PBV from 2-state growth model is also used to determine the fair price of KCE. Finally, the target price from this model is THB 41.22.

**Table 1.4 Justified PBV from 2-state growth model**

Justified PBV Ratio (2-states growth)	2014E
abnormal growth	22.48%
Stable growth	4.65%
Dividend payout	25.00%
abnormal growth period	5.00
Ke	9.22%
ROE	19.75%
Justified PBV	<b>4.37</b>
Book value per share (2014)	<b>9.44</b>
Target Price	<b>THB 41.22</b>

### EV/EBITDA multiple:

For EBITDA multiple, the ratio was taken from the Bloomberg website. In order to determine the target price from multiple method, we took the forward EBITDA multiple then multiply by the forecast EBITDA from proforma financial statement (2014 full year). The value that we got from this method is the Enterprise value. After subtracting EV from the value of debt and non-controlling interest and adding with non-operating assets, we could get the value of equity. Finally, divided the

value of equity by number of share outstanding to achieve target price which is equal to THB 51.80.

**Table 1.5 Forward EV to EBITDA of peer group from Bloomberg**

<b>Forward EV to EBITDA (average EBITDA Multiple of peer group)</b>	
EV to EBITDA (EV to Forward 12 months EBITDA)	21.49
(*multiply by: EBITDA (2014E))	1,526,194,393
(=)Enterprise Value (2014)	32,797,917,497
(+)Non-operating assets	2,677,610
(-)Value of interest bearing debt (2014)	3,879,520,705
(-)Value of non-controlling interest	19,730,140
Value of equity	28,901,344,262
No. of shares	557,928,000
Share price	<b>THB 51.80</b>

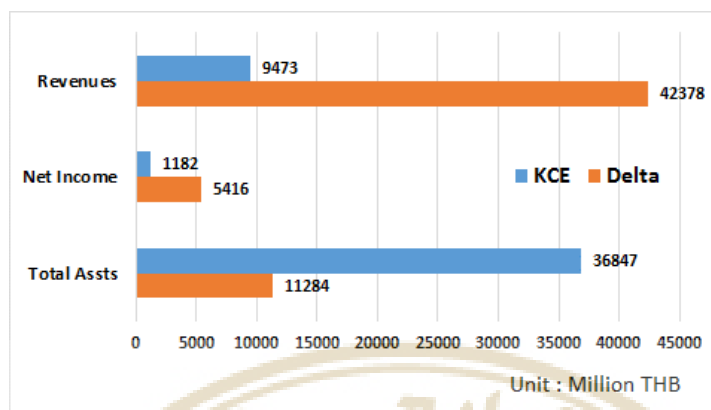
## 1.8 Financial Analysis

### 1.8.1 Size Analysis

The recent performance of KCE, 2013, and the future growth opportunity reinforces KCE financial strength.

Size of KCE compares to peer company (Delta Electronic). In 2013, KCE had total revenue of 9,472.7 million THB. , while Delta Electronics could generate higher revenue at 42,378 million THB. Furthermore, net income of KCE in that year was 1,181.5 million THB, which was lower than Delta Electronics 5415.7 million THB. However, the amount of revenue and net income of KCE seemed to be significant lower than Delta Electronics because there was a big different between assets size of these two companies (KCE's total assets was 11,284 million THB, while Delta Electronics had total assets of 36,846.7 million THB.) Although the asset sizes between KCE and Delta Electronic were 3-time difference, we took Delta to compare with KCE for financial analysis, since Delta Electronics is the most stable company and has been a leader of this sector for a long time. Therefore, Delta Electronics would be a good benchmark to compare the firm in this industry.

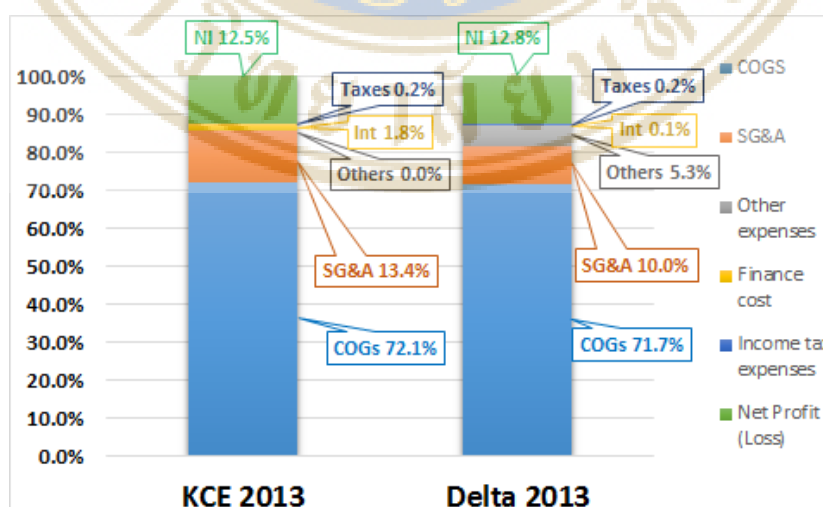




**Figure 1.7 Size analysis of KCE and DELTA**

### 1.8.2 Common Size Analysis

**Income statement:** As a result of successful reduction of raw material costs, in 2013, KCE had 72.1% proportion of COGs compared to total revenues, which was close to Delta. Since, Delta had greater economic of scale than KCE, having close COGs proportion as Delta meant that KCE performed well in managing the COGs. Higher proportion of SG&A than Delta reflected from worse fixed assets and human resource utilization. Delta invested more on R&D, so other expenses was higher than KCE. Due to higher leverage of KCE, the proportion of financial cost was bigger than Delta. Finally, proportion of net income between KCE and Delta were about the same at 12.5% and 12.8% respectively.

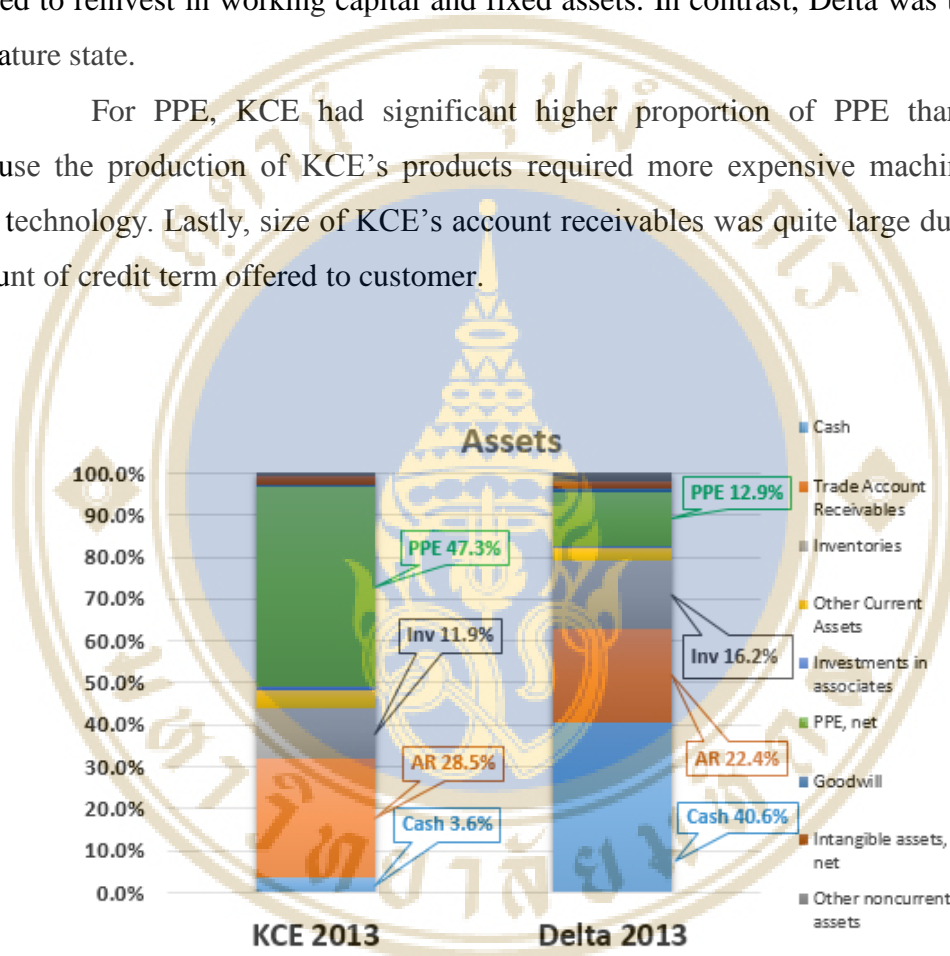


**Figure 1.8 Income statement common size analysis of KCE and DELTA**



**Balanced sheet (Assets):** Properties, plants and equipment were the biggest proportion of KCE's assets part, so this kind of asset was the most important for the firm. Since the firm's business highly depended on the size of PPE, variation of PPE size would largely impact to the company's business. Also, KCE had absolutely lower proportion of cash & cash-equivalent than Delta, as KCE did not have much access cash. Since KCE was in high growth period, excess cash were needed to reinvest in working capital and fixed assets. In contrast, Delta was the firm in mature state.

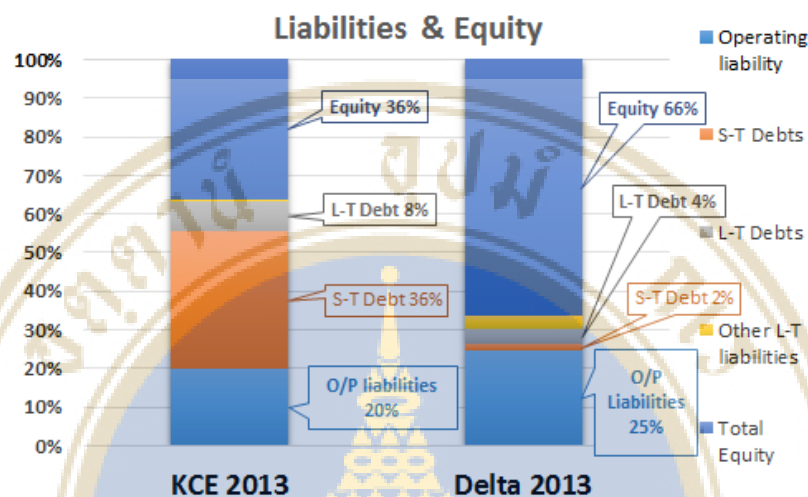
For PPE, KCE had significant higher proportion of PPE than Delta because the production of KCE's products required more expensive machines and high technology. Lastly, size of KCE's account receivables was quite large due to big amount of credit term offered to customer.



**Figure 1.9 Balanced sheet (Assets) common size analysis of KCE and DELTA**

**Balanced sheet (Liabilities and Equities):** KCE's source of funds was largely different compare to Delta. Especially for the proportion of interest bearing debts and equity, KCE had 8% of L-T debts and 36% of S-T debts (Total IBDs = 44%), while Delta had proportion of IBD equal to 6% only. Since Delta had been already in mature state growth with good business performance in the past, Delta had a lot of retain earning in cash.

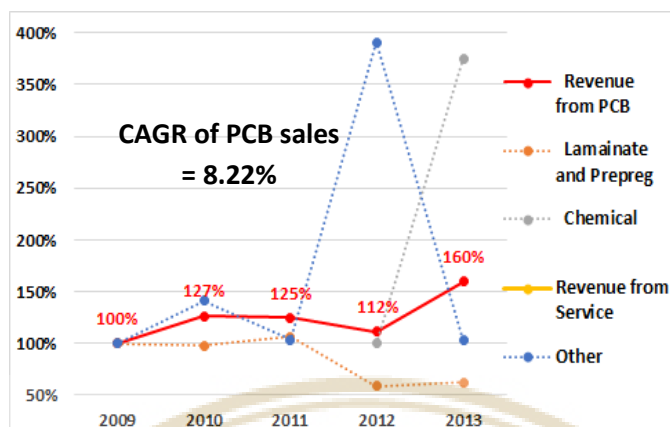
In contrast, KCE was in high growth period and needed huge capital. Thus, KCE relied more on debts to finance its future growth rather than Delta. Moreover, the proportion of KCE's operating liabilities was lower than Delta, so KCE might need more internal or external funds than Delta to finance its NOWC.



**Figure 1.10 Balanced Sheet (Funding) common size analysis of KCE and DELTA**

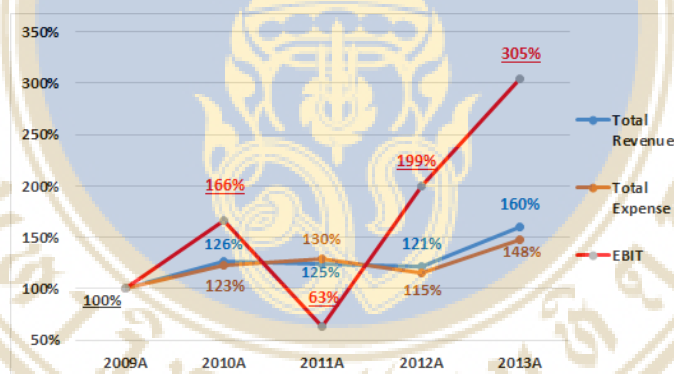
### 1.8.3 Trend Analysis

**Revenues:** Recently outstanding increase of revenue in 2013 will continue to the future reflected by production capacity expansions. The revenue of PCB grew from 112% to 160% from 2012 to 2013, note that 2009 is defined as base year. From historical, the trend of PCB revenue was more stable than the other products. According to capacity expansion, KCE is expected to be able to continue growing its revenue in the future, which will contribute to ability to maintain the current high gross profit margin and net profit margin into the future. However, by comparing with Delta electronics, peer company, and ETRON industry, KCE still has lower net profit margin and gross profit margin than Delta electronics.



**Figure 1.11 Revenue trend of KCE**

**Earning:** Form 2012 to 2013, the trend of total revenue was higher than total expenses, since KCE could recover from water flood in 2011. Also, EBIT had sharply increased during these periods reflected from faster growing of revenues than expenses. The gap between total revenues and expenses trends is expected to be wider in the future due to better cost management in the two recent years.



**Figure 1.12 Earning trend of KCE**

#### 1.8.4 Financial Ratios Analysis

**Profitability ratio:** In 2013, KCE had very high ROE at 30.2%, this percentage was higher than Delta (18.6%, ROE), and ETRON sector (14.8%, ROE). However, in 2013, %profit from operation (%EBIT margin) of KCE was slightly higher than Delta (14.3%, KC and 13.1%, Delta). Also, in that year, 12.3% net profit margin of KCE was slightly less than 12.8% net profit margin of Delta due to higher financial cost of KCE. The reason behind very high ROE of KCE while there profit margin were close to each other was KCE had higher leverage than DELTA.

Considering on return from total assets of the firm, ROA of KCE in 2013 was 10.1%, and it was lower than 12.7% Delta’s ROA. ROA is predicted to have very small fluctuation during the five years forecast. There will also be only a small difference from the recent golden years, 2013, due to the future investment and opportunity of the electronics component market. However, ROE will be lowered because the proportion of total equity will grow faster than net income. Even though the ROE of KCE is higher than Delta, KCE need to be better utilize its assets, since lower ROA than Delta represents the lower return per unit of asset.

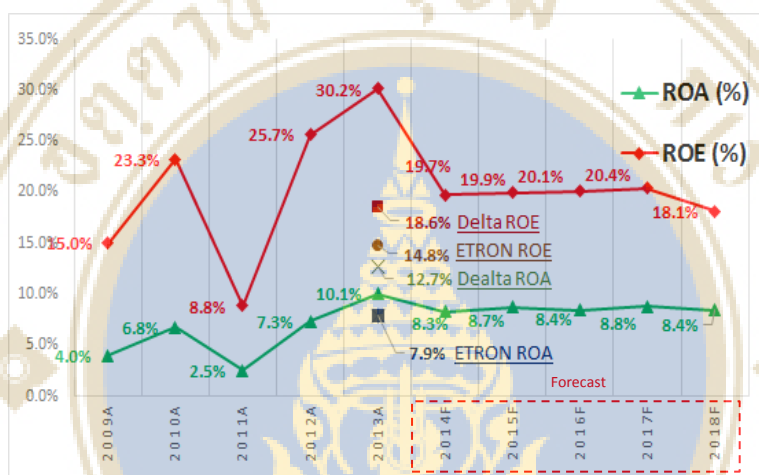


Figure 1.13 ROA and ROE of KCE

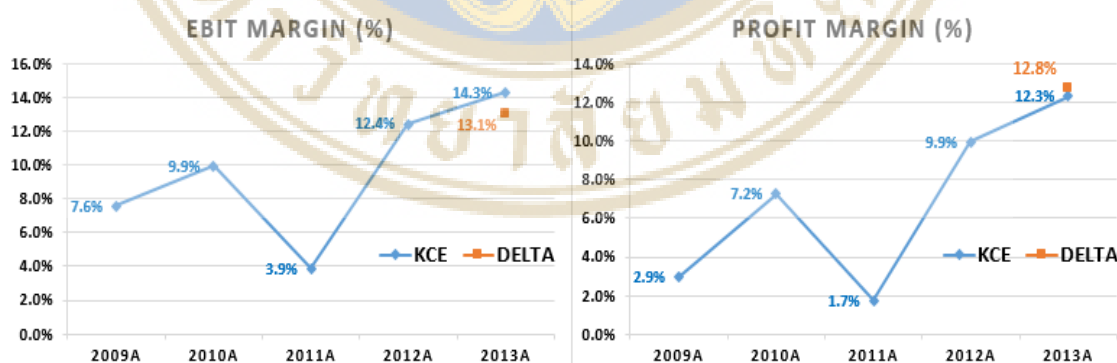
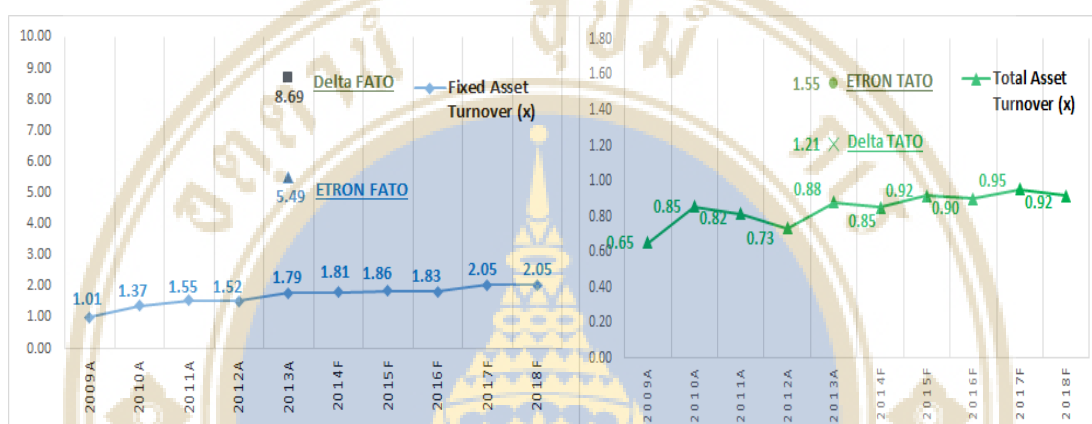


Figure 1.14 EBIT and Profit margin of KCE

**Efficiency ratio:** The ratio is a key measurement of business in this industry. Generally, describe the firm in manufacturing business, fixed asset turnover ratio plays a very important role in determining the business competition ability.

However, KCE has lower fixed asset turnover ratio than both industry and Delta electronic.

Obviously, it means that KCE will have to invest fixed assets more than other competitors in order to generate the same amount of sale (in unit of THB). Also, the firm total asset turnover is lower than the others. That's why the company had made a huge investment to support the sale growth and expansion demand expansion of the market.



**Figure 1.15 Fixed and Total assets turnover ratios of KCE**

**Liquidity ratios:** Compare to Delta, in 2013, KCE had lower current, quick, and cash ratio than Delta. This implied that KCE had higher liquidity risk than Delta in repaying short-term loan and faced liquidity shortage. Since KCE had been heavily financed by short-term debt and had fairly low cash, the firm would face a huge liquidity risk exposure from fluctuation of cash flow.

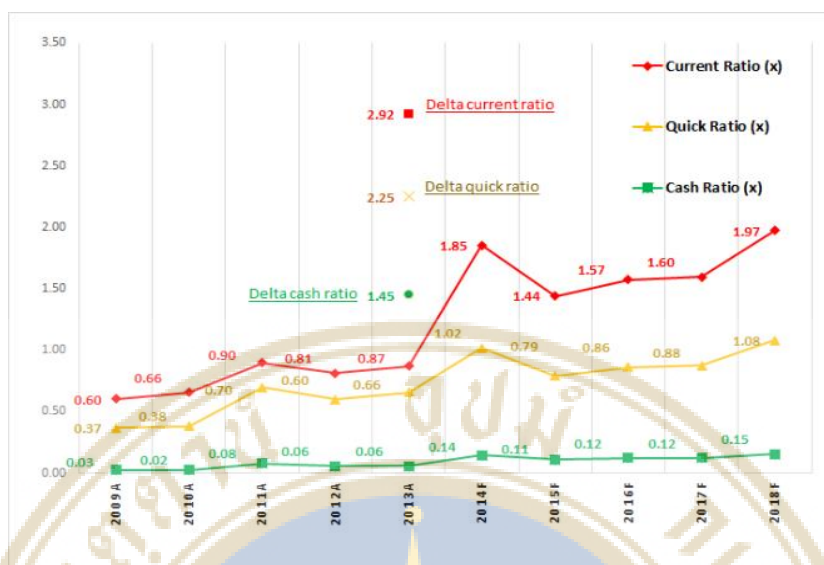


Figure 1.16 Current, quick, and cash ratios of KCE

**Solvency ratio:** The ratio represents the higher risk of KCE over its peer and industry. However, the D/E ratio of the firm has recently reduced from 2011 to 2013. In fact, the ratio was significantly low in 2013, since the firm did a very good performance. From our predictions, KCE will have more revenue and net profit in the future. Therefore, D/E ratio tends to decrease overtime.

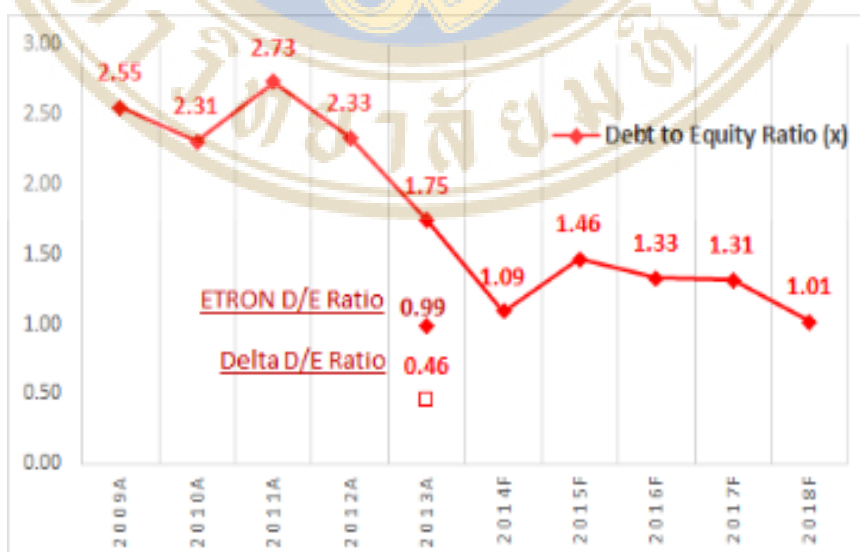


Figure 1.17 Debt to Equity ratios of KCE

## 1.8 Investment Risks and Downside Possibilities

**Production Risk:** Production of electronics components require reliable engineering process and complicated production techniques in order to avoid defect. Also, production technology has continuously and rapidly changed. Therefore, the company has to active in adjusting for rapid change of production technic, and meet the market demand for new production technology in order to respond to the customer's requirement.

**Labour shortage Risk:** As PCBs production requires specific and proficiently skills. Therefore, the company has major concerns regarding how to maintain its current labour force as well as searching for new generation. The labour shortages would directly result in underperforming of productivity and output quality. Knowledgeable and skilled labour force is critical to the company's success.

**Materials Price Risk:** As most of KCE's raw materials have to be imported, shortage of key materials such as gold, copper and copper foil could lead to a suspension in production. Thereby, materials price a risk factor that decreases the return and profit margin. As the use of improper-specification, low-quality raw materials as well as a rise in raw material prices could result in production problem.

**Technology Risk:** Generally, trends of electronics industry emphasize on smaller, more efficient and compact designs. As a result, PCBs are consequently smaller with more intricate designs and higher layer counts. As PCBs is the basic and irreplaceable component of all electronic products, KCE's technological risks is mainly related to the detailed changes in the designs, production techniques and raw material type. Therefore, KCE cannot lag of investing in necessary, and up-to-date equipment to support such changes effectively.



**Dependency on a product or Market Risk:** Heavy dependency to the automotive industry and European market is a risk to the company in the event of a major change in demand for the product in this category or this particular, proportion of 70-75%. And, mostly products are exported to market. since the company sells PCBs for automotive electronics equipment in the European market for 55-60% of total sales.

**Natural Disaster Risk:** Natural disasters those are fire, flood, storm, earthquakes and etc. interrupt the company's operations. With impact from national disaster (*i.e. big water flood in 2011*), the production must be suppressed as well as there will be additional cost for the line re-start. These will make a critical effect to the production. Consequently, the company may lose its customers to other competitors.

**Interest Rate Risk:** With higher debt ratio (mostly on short-term debt), lower interest coverage ratio than competitors and industry, if interest rate is fluctuation and tends to increase continuously, the company and subsidiaries are exposed to risks from interest rate uncertainty related to the cash deposit, the overdraft account and the bank loan. Especially, significantly low interest coverage ratio directly impacts the firm trustworthiness, and lead to high financial cost.

**Foreign Exchange Rate:** In fact, the firm's functional currency is in THB, but most of revenues received in foreign currency due to focusing on export. The company is exposed to risk from foreign exchange rate that is related to the purchase of raw material and the sale dollar, roughly 50%.

**Risk on Non-payment from Sales Representatives and Customers:** Fifty percent of the total sales of the company is performed through their sales representatives and the remaining is shipped directly to customers. The sales representatives also collect the payments from customers on behalf of KCE and remit the money to KCE on the agreed schedule. Therefore, there are risks of non-payment from representatives or from customers which affect the liquidity status and the company's operation.



**World Economy Risk:** Growth of electronics industry depends on growth of the world economy and industries which require electronic components such as telecommunications, computers, automobile, industrial equipment, high technology instruments and peripherals. Thereby, the cyclical fluctuation of the economy and the electronics industry can lead to undesirable change in sales volume and price.

Impact →	1	2	3
Probability	Negligible	Moderate	Severe
(68%-100%)		-Production technology change -Trend of technology change	
(34%-67%)		-Increase in material price -Trend of technology change -Interest rate fluctuation -World economy	-Change in demand of dependency on product market -Foreign exchange rate fluctuation
(1%-33%)		-Specific and proficient labour shortage -Natural disaster	-Non-payment from sales representatives and customers

**Figure 1.18 Risk Matrix**

## CHAPTER II

### DATA

#### 2.1 Income Statement

**Table 2.1 Income statement**

KCE Income Statement (Unit in million TH)	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E
Revenue from sale										
Revenue from PCB	5,651	7,153	7,058	6,305	9,020	9,101	11,594	13,955	16,879	17,506
Laminate and Prepreg	102	100	108	60	64	68	72	77	82	87
Chemical				56	210	133	133	133	133	133
Revenue from Service	2	9	34	57						
Other	186	263	193	728	192	184	189	195	200	206
<b>Total Revenues</b>	<b>5,939</b>	<b>7,509</b>	<b>7,394</b>	<b>7,206</b>	<b>9,486</b>	<b>9,486</b>	<b>11,989</b>	<b>14,359</b>	<b>17,294</b>	<b>17,932</b>
COGS	4,673	5,815	5,957	5,232	6,843	6,951	8,817	10,584	12,773	13,246
SG&A	758	888	1,152	1,075	1,275	1,335	1,693	2,032	2,453	2,544
Other expenses	58	59	0	3	-	43	55	66	80	83
<b>Total Expenses</b>	<b>5,489</b>	<b>6,761</b>	<b>7,109</b>	<b>6,310</b>	<b>8,117</b>	<b>8,329</b>	<b>10,565</b>	<b>12,683</b>	<b>15,305</b>	<b>15,872</b>
EBIT	449	747	285	896	1,368	1,157	1,424	1,676	1,988	2,060
Finance cost	271	200	153	159	171	144	173	221	239	232
Income tax expenses	4	2	2	20	16	51	63	74	89	93
<b>Net Profit (Loss)</b>	<b>174</b>	<b>546</b>	<b>129</b>	<b>717</b>	<b>1,182</b>	<b>962</b>	<b>1,187</b>	<b>1,382</b>	<b>1,661</b>	<b>1,735</b>

## 2.2 Balance Sheet

**Table 2.2 Balance sheet**

KCE Statement of Financial Position (Unit in million THB)						2014E	2015E	2016E	2017E	2018E
	2009	2010	2011	2012	2013					
Cash (used in operation)	157	143	536	397	402	420	533	640	773	801
Investments	1.5	2.2	2.1	3.3	2.7					
Trade Account Receivables	1,560	1,531	1,546	2,215	3,216	2,577	3,269	3,924	4,736	4,911
Inventories	1,160	1,332	1,080	1,240	1,345	1,622	2,057	2,469	2,980	3,090
Other Current Assets	63	181	1,708	840	502	850	1,078	1,294	1,561	1,619
<b>Total Current Assets</b>	<b>2,942</b>	<b>3,189</b>	<b>4,872</b>	<b>4,695</b>	<b>5,468</b>	<b>5,472</b>	<b>6,940</b>	<b>8,330</b>	<b>10,052</b>	<b>10,424</b>
Investments in associates	82	77	82	78	99	99	99	99	99	99
Other long-term investments	0	0	0	1	0	0	0	0	0	0
<b>GROSS : PPE</b>	<b>9,987</b>	<b>10,176</b>	<b>8,777</b>	<b>10,157</b>	<b>10,070</b>	<b>10,146</b>	<b>13,083</b>	<b>13,666</b>	<b>15,068</b>	<b>15,182</b>
Accumulated deprec.	4,368	4,860	4,542	4,920	4,727	5,018	5,297	5,721	6,154	6,640
<b>PPE, net</b>	<b>5,619</b>	<b>5,308</b>	<b>4,235</b>	<b>5,237</b>	<b>5,343</b>	<b>5,128</b>	<b>7,786</b>	<b>7,944</b>	<b>8,914</b>	<b>8,542</b>
Goodwill	0	0	0	80	80	80	80	80	80	80
Intangible assets, net	56	75	86	161	196	200	227	275	345	441
Other noncurrent financial assets	101	99	0	0	0	0	0	0	0	0
Deffered tax	0	0	0	0	73	0	0	0	0	0
Other noncurrent assets	8	4	83	4	25	28	28	28	28	28
<b>Total noncurrent assets</b>	<b>5,866</b>	<b>5,564</b>	<b>4,487</b>	<b>5,560</b>	<b>5,816</b>	<b>5,535</b>	<b>8,219</b>	<b>8,426</b>	<b>9,466</b>	<b>9,190</b>
<b>Total assets</b>	<b>8,808</b>	<b>8,753</b>	<b>9,358</b>	<b>10,256</b>	<b>11,284</b>	<b>11,006</b>	<b>15,159</b>	<b>16,756</b>	<b>19,519</b>	<b>19,615</b>
Bank overdrafts and S-T loans	3,265	3,169	3,551	2,812	3,220	323	1,704	1,728	2,172	1,042
Trade account and other payable	883	907	1,467	1,566	2,173	1,755	2,226	2,672	3,225	3,344
Current Proportion of L-T loan	464	515	404	1,393	849	849	849	849	849	849
Other current liabilities	270	284	2	13	34	26	34	40	49	50
<b>Total current liabilities</b>	<b>4,872</b>	<b>4,863</b>	<b>5,424</b>	<b>5,784</b>	<b>6,275</b>	<b>2,953</b>	<b>4,813</b>	<b>5,290</b>	<b>6,294</b>	<b>5,285</b>
L-T loan	1,214	1,090	1,260	1,317	779	2,707	4,111	4,194	4,707	4,510
Financial lease agreement	243	155	104	10	4	4	4	4	4	4
Employee Benefit Obligations	-	-	62	67	76	76	76	76	76	76
Deferred tax liability	0	0	0	0	39	0	0	0	0	0
<b>Total noncurrent liabilities</b>	<b>1,457</b>	<b>1,245</b>	<b>1,426</b>	<b>1,394</b>	<b>898</b>	<b>2,788</b>	<b>4,191</b>	<b>4,275</b>	<b>4,787</b>	<b>4,591</b>
<b>Total liabilities</b>	<b>6,329</b>	<b>6,108</b>	<b>6,850</b>	<b>7,178</b>	<b>7,174</b>	<b>5,741</b>	<b>9,004</b>	<b>9,565</b>	<b>11,081</b>	<b>9,876</b>
Registered shares (1THB each)	500	500	500	492	578	587	587	587	587	587
Issued and paid-up shares (1THB each)	462	471	472	473	480	558	558	558	558	558
Share Premium	1,017	1,101	1,108	1,111	1,120	1,476	1,476	1,476	1,476	1,476
Treasury shares	(8)	(40)	(70)	(106)	-	-	-	-	-	-
Warrant	-	-	4	1	-	-	-	-	-	-
Retain eaming (deficit)	782	1,179	1,062	1,637	2,537	3,259	4,149	5,185	6,431	7,732
Appropriated R/E	58	90	120	156	58	58	58	58	58	58
Unappropriated R/E	725	1,089	942	1,482	2,479	3,201	4,091	5,127	6,373	7,674
Other component of equity	(9)	(58)	(52)	(55)	(47)	(47)	(47)	(47)	(47)	(47)
<b>Equity Attributable to Equity Shareholder of Parent</b>	<b>2,245</b>	<b>2,653</b>	<b>2,520</b>	<b>3,064</b>	<b>4,091</b>	<b>5,246</b>	<b>6,136</b>	<b>7,172</b>	<b>8,417</b>	<b>9,719</b>
Noncontrolling interest	233	(8)	(12)	13	20	20	20	20	20	20
<b>Total equity</b>	<b>2,479</b>	<b>2,645</b>	<b>2,508</b>	<b>3,077</b>	<b>4,110</b>	<b>5,265</b>	<b>6,155</b>	<b>7,191</b>	<b>8,437</b>	<b>9,739</b>
<b>Total Liabilities and shareholders' equity</b>	<b>8,808</b>	<b>8,753</b>	<b>9,358</b>	<b>10,256</b>	<b>11,284</b>	<b>11,006</b>	<b>15,159</b>	<b>16,756</b>	<b>19,519</b>	<b>19,615</b>

## 2.3 Statement of Cash Flow

**Table 2.3 Statement of cash flow**

KCE Statement of Cash Flow (Unit in Million THB)	2009	2010	2011	2012	2013	2014E	2015E	2016E	2017E	2018E
<b>Cash flows from operating activities:</b>										
NET PROFIT (LOSS)	174	546	129	717	1,182	962	1,187	1,382	1,661	1,735
<u>Adjustments to reconcile profit before tax to net cash provided by (paid for) operating activities:</u>										
Depreciation	583	590	548	477	517	291	279	424	433	485
Amortisation	6	8	4	10	12	78	80	90	109	137
Depreciation and amortisation	589	598	552	488	529	369	359	514	542	623
Cash flows from/(use in) operations before change in operating asset and liabilities										
<b>(Increase) decrease in operating assets</b>										
(Increase) Trade and other receivables	(215)	20	(1,509)	288	(1,087)	639	(692)	(655)	(812)	(175)
(Increase) decrease in inventories	232	(181)	(192)	(163)	(172)	(277)	(435)	(412)	(511)	(110)
(Increase) decrease in other current assets	145	(99)	(8)	(27)	580	(348)	(228)	(216)	(267)	(58)
(Increase) decrease in other non-current assets	3	3	3	1	(22)	70	-	-	-	-
<b>Increase (decrease) in operating liabilities</b>										
(Increase) decrease in trade account and other payables - other parties	9	23	(42)	205	328	(418)	471	446	553	119
(Increase) decrease in other current liabilities	(161)	(9)	2	(2)	2	(7)	7	7	8	2
(Increase) decrease in other non-current liabilities	-	-	(9)	(2)	(3)	(39)	-	-	-	-
Cash from operating activities	959	1,070	793	1,661	2,160	951	668	1,065	1,174	2,136
Cash paid for interest expenses	(257)	(184)	(140)	-	-	-	-	-	-	-
Cash paid for corporate income tax	(10)	(9)	(5)	(13)	(29)	-	-	-	-	-
<b>Net cash flows from operating activities</b>	<b>692</b>	<b>877</b>	<b>649</b>	<b>1,648</b>	<b>2,131</b>	<b>951</b>	<b>668</b>	<b>1,065</b>	<b>1,174</b>	<b>2,136</b>
<b>Cash flow from investing activities:</b>										
(Increase) decrease in investments in subsidiary and associates company	-	(284)	-	(171)	-	-	-	-	-	-
Decrease in other investment	-	-	-	-	1	-	-	-	-	-
Proceeds from disposal of property, plant and equipments	118	7	6	6	7	-	-	-	-	-
Purchase of property, plant and equipments	(244)	(168)	(285)	(950)	(1,622)	(76)	(2,937)	(582)	(1,403)	(113)
(Increase) decrease in intangible assets	(33)	(27)	(15)	(36)	(2)	(82)	(106)	(138)	(180)	(233)
<b>Net cash flows used in investing activities</b>	<b>(160)</b>	<b>(473)</b>	<b>(294)</b>	<b>(1,152)</b>	<b>(1,616)</b>	<b>(158)</b>	<b>(3,044)</b>	<b>(721)</b>	<b>(1,582)</b>	<b>(347)</b>
<b>Cash flows from financing activities:</b>										
Increase (decrease) in short-term borrowings from financial institutions	-	-	308	-	994	(2,897)	1,381	24	444	(1,130)
Increase (decrease) in other loan from financial institutions	(1,190)	(144)	-	-	-	-	-	-	-	-
Increase (decrease) in long-term borrowings from other parties	615	(80)	43	1,118	(1,163)	1,929	1,403	84	512	(196)
Increase (decrease) in finance lease contract liabilities	77	(108)	(108)	(51)	(19)	-	-	-	-	-
Increase (decrease) in the process of insurance share capital	-	-	-	-	-	433	-	-	-	-
Dividend paid	-	48	(185)	(142)	(278)	(240)	(297)	(345)	(415)	(434)
Other items	-	-	-	(4)	-	-	-	-	-	-
<b>Net cash flows used in financing activities</b>	<b>(497)</b>	<b>(417)</b>	<b>35</b>	<b>(634)</b>	<b>(509)</b>	<b>(775)</b>	<b>2,488</b>	<b>(238)</b>	<b>541</b>	<b>(1,760)</b>
Net increase(decrease) in cash and cash equivalent	39	(14)	392	(138)	5	18	113	107	132	29
Cash and cash equivalent, ending balance	118	157	143	536	397	402	420	533	640	773
Cash and cash equivalent, Beginning balance	157	143	536	397	402	420	533	640	773	801

## 2.4 Financial Ratio

Table 2.4 Financial Ratio

Key Financial Ratio		2009A	2010A	2011A	2012A	2013A	2014F	2015F	2016F	2017F	2018F
<b>Liquidity Ratio</b>											
Current Ratio (x)	KCE	0.60	0.66	0.90	0.81	0.87	1.85	1.44	1.57	1.60	1.97
	TRIPOD					1.41					
	DELTA					2.92					
Quick Ratio (x)	KCE	0.37	0.38	0.70	0.60	0.66	1.02	0.79	0.86	0.88	1.08
	TRIPOD					1.22					
	DELTA					2.25					
Cash Ratio (x)	KCE	0.03	0.02	0.08	0.06	0.06	0.14	0.11	0.12	0.12	0.15
	TRIPOD					0.60					
	DELTA					1.45					
<b>Efficiency Ratio</b>											
Total Asset Turnover (x)	KCE	0.65	0.85	0.82	0.73	0.88	0.85	0.92	0.90	0.95	0.92
	TRIPOD					0.83					
	DELTA					1.21					
	ETRON					1.55					
Fixed Asset Turnover (x)	KCE	1.01	1.37	1.55	1.52	1.79	1.81	1.86	1.83	2.05	2.05
	TRIPOD					2.75					
	DELTA					8.69					
	ETRON					5.49					
Acc Receivable Turnover (x)	KCE	4.08	4.86	4.81	3.83	3.49	3.27	4.10	3.99	3.99	3.72
	TRIPOD					3.55					
	DELTA					5.55					
Collection Period (days)	KCE	90	75	76	95	105	111	89	91	91	98
	TRIPOD					103					
	DELTA					66					
Inventory Turnover (x)	KCE	3.69	4.67	4.94	4.51	5.29	4.69	4.79	4.68	4.69	4.36
	TRIPOD					8.48					
	DELTA					5.32					
Days in Inventory (days)	KCE	99	78	74	81	69	78	76	78	78	84
	TRIPOD					43					
	DELTA					69					
Payables Turnover (x)	KCE	5.12	6.77	4.83	3.56	3.72	3.54	4.43	4.32	4.33	4.03
	TRIPOD					3.30					
	DELTA					3.55					
Payables Period (days)	KCE	71	54	76	103	98	103	82	84	84	90
	TRIPOD					111					
	DELTA					103					
Cash Conversion Cycle (days)	KCE	117	99	74	74	75	86	83	85	85	91
	TRIPOD					35					
	DELTA					32					

Table 2.4 Financial Ratio (Continue)

Key Financial Ratio		2009A	2010A	2011A	2012A	2013A	2014F	2015F	2016F	2017F	2018F
<b>Profitability Ratio</b>											
Gross Profit Margin (%)	KCE	21.3%	22.5%	19.4%	27.4%	27.8%	26.7%	26.5%	26.3%	26.1%	26.1%
	TRIPOD					14.5%					
	DELTA					28.3%					
EBIT Margin (%)	KCE	7.6%	9.9%	3.9%	12.4%	14.3%	12.2%	11.9%	11.7%	11.5%	11.5%
	TRIPOD					7.3%					
	DELTA					13.1%					
EBITDA Margin (%)	KCE	17.5%	17.9%	11.3%	19.2%	19.9%	16.1%	14.9%	15.3%	14.6%	15.0%
	TRIPOD					16.2%					
	DELTA										
Net Profit Margin (%)	KCE	2.9%	7.2%	1.7%	9.9%	12.8%	10.1%	9.9%	9.6%	9.6%	9.7%
	TRIPOD					5.8%					
	DELTA					12.8%					
	ETRON					4.7%					
ROA (%)	KCE	4.0%	6.8%	2.5%	7.3%	10.1%	8.3%	8.7%	8.4%	8.8%	8.4%
	TRIPOD					4.8%					
	DELTA					12.7%					
	ETRON					7.9%					
ROE (%)	KCE	15.0%	23.3%	8.8%	25.7%	30.2%	19.7%	19.9%	20.1%	20.4%	18.1%
	TRIPOD					9.0%					
	DELTA					18.6%					
	ETRON					14.8%					
SG&A/Sale	KCE	0.13	0.12	0.16	0.17	0.14	0.14	0.14	0.14	0.14	0.14
	DELTA					0.10					
<b>Solvency Ratio</b>											
Debt Ratio	KCE	0.72	0.70	0.73	0.70	0.64	0.52	0.59	0.57	0.57	0.50
	TRIPOD					0.47					
	DELTA					0.31					
Debt to Equity Ratio (x)	KCE	2.55	2.31	2.73	2.33	1.75	1.09	1.46	1.33	1.31	1.01
	TRIPOD					0.38					
	DELTA					0.46					
	ETRON					0.99					
Equity Multiply (x)	KCE	3.55	3.31	3.73	3.33	2.75	2.09	2.46	2.33	2.31	2.01
	TRIPOD					1.88					
	DELTA					1.46					
Long Term Debt Ratio (%)	KCE	16.5%	14.2%	15.2%	13.6%	8.0%	25.3%	27.6%	25.5%	24.5%	23.4%
	TRIPOD					1.8%					
	DELTA					3.3%					
Interest Coverage Ratio (x)	KCE	1.66	3.73	1.86	5.62	7.94	8.05	8.21	7.58	8.33	8.86
	TRIPOD					40.06					
	DELTA					88.24					



## 2.5 Estimated Sale Growth

**Table 2.5 Estimated Sale Growth**

	2009	2010	2011	2012	2013	Average	2014E	2015E	2016E	2017E	2018E
<b>Total Production Capacity (sq.ft)</b>	17,400,000	22,800,000	24,000,000	24,600,000	24,600,000		24,600,000	33,000,000	40,200,000	48,600,000	48,600,000
KCE Electronics Public Company limited	6,600,000	6,600,000	6,600,000	7,200,000	7,200,000		7,200,000	7,200,000	7,200,000	7,200,000	7,200,000
KCE International Company Limited		5,400,000	5,400,000	5,400,000	5,400,000		5,400,000	5,400,000	5,400,000	5,400,000	5,400,000
KCE Technology Company Limited	10,800,000	10,800,000	12,000,000	12,000,000	12,000,000		12,000,000	12,000,000	12,000,000	12,000,000	12,000,000
<b>New Plant</b>							8,400,000	15,600,000	24,000,000	24,000,000	
Phase 1							8,400,000	8,400,000	8,400,000	8,400,000	
Phase 2								7,200,000	7,200,000	7,200,000	
Phase 3									8,400,000	8,400,000	
<b>Total Actual Production (sq.ft)</b>		15,426,010	18,136,170	16,918,878	21,903,107		23,222,898	29,583,197	35,605,751	43,066,576	44,667,769
KCE Electronics Public Company limited	6,514,790	6,261,611	6,514,790	6,645,295	6,654,622		6,692,898	6,731,394	6,770,111	6,809,051	6,840,000
KCE International Company Limited		3,896,175	4,633,145	5,005,359	5,086,459		5,130,000	5,130,000	5,130,000	5,130,000	5,130,000
KCE Technology Company Limited	7,987,694	5,268,224	6,988,235	5,268,224	10,162,026		11,400,000	11,400,000	11,400,000	11,400,000	11,400,000
<b>New Plant</b>							6,321,803	12,305,640	19,727,525	21,297,769	
Phase 1							6,321,803	6,886,951	7,502,621	7,980,000	
Phase 2								5,418,689	5,903,101	6,430,818	
Phase 3									6,321,803	6,886,951	
<b>% of production to capacity (Capacity Utilization)</b>		67.66%	75.57%	68.78%	89.04%	75.26%					
KCE Electronics Public Company limited	98.71%	94.87%	98.71%	92.30%	92.43%						
KCE International Company Limited		72.15%	85.80%	92.69%	94.19%						
KCE Technology Company Limited	73.96%	48.78%	58.24%	43.90%	84.68%						
<b>%change in production capacity</b>											
KCE Electronics Public Company limited		-3.89%	4.04%	2.00%	0.14%	0.58%					
KCE International Company Limited			18.92%	8.03%	-1.62%	9.52%					
KCE Technology Company Limited		-34.05%	32.65%	-24.61%	92.89%	16.72%					
						8.94%					
<b>Revenue from PCBs (Thousand baht)</b>		7152890	7058440	6304850	9065950						
<b>Sale per actual capacity (Sale/sq.ft.)</b>		0.464	0.389	0.373	0.414	0.392					
<b>Forecasted sale of PCB [(Sale/sq.ft)*future sq.ft]</b>							9,101,477	11,594,194	13,954,543	16,878,576	17,506,113



## 2.6 Estimated Stable Growth

**Table 2.6 Estimated Stable Growth**

<b>Proportion of PCB regional sale</b>				
	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>Avg.</b>
EU	62.0%	62.0%	54.7%	<b>59.6%</b>
USA	16.3%	16.7%	20.7%	<b>17.9%</b>
Asia	17.9%	17.8%	19.9%	<b>18.5%</b>
Thailand	3.8%	3.5%	4.7%	<b>4.0%</b>
<b>Forecast real GDP and Inflation</b>				
	<b>Real GDP</b>	<b>Inflation</b>	<b>Nominal GDP</b>	<b>weight avg.</b>
EU	1.99%	1.85%	3.84%	2.29%
USA	2.76%	1.97%	4.73%	0.85%
Asia	3.86%	3.04%	6.90%	1.28%
Thailand	3.50%	2.50%	6.00%	0.24%
<b>perpetual growth</b>				<b>4.65%</b>

## 2.7 Five Forces Analysis

### **Rivalry among Current Competitors:**

In the overall, competition in electronics industry is intense because of rapid change in technology; relatively short product cycle and profitability pressures. Therefore, factors above probably support the growing in this industry, also attract the competitors to invest more. It would seem that there are many competitors in electronic industry. For KCE, the company also has another production line which is automotive production, KCE plays significant role in automotive sector, it seemingly shows strength point for their company because this line of production acquires high quality of product. According to high ended product, it increases reliability from customers, it becomes moderately competitiveness of KCE. Refer to the required qualification of product in automotive sector, it affect the survival of few number of competitors in this market because of high amount of money to spend in production and customer royalty. It can be concluded that KCE has to compete with many competitors in electronic market but still has more competitiveness than other companies in automotive market.

### **Bargaining Power of Suppliers:**

As KCE have own manufacture as subsidiary that is Thai Laminate, the company can produce Laminate and Prepreg which are raw materials by itself. The company don't need supplier to provide the raw materials. For others materials, the company choose suppliers at least 3 companies in each material because of offer and competitive price of materials. Therefore the company have high bargaining power of supplier.

### **Bargaining Power of Customers:**

KCE has the target in many industries such as automotive, telecommunication, medical, computer and etc. for reduce the recession in any industry. KCE have limit selling in each customer as no more than 30 percent of total sale because of reduce risk. Moreover, the company has the sale representative in many countries. Form the growth in the automobile industry, the PBC will more

require as component so the company have high bargaining power of customers as high quality products.

**Threat of Substitute Products:**

There is not much of a threat form substitutes to the electronic industry because there are no direct substitutes as fundamental and technical product. Nothing can really replace the PCB because the production requires high technology and knowledge to produce.

**Threat of New Entrance:**

The electronic industry is relatively attractive to new comers because of its rapid growth and appealing customer base. At the same time, the industry is unattractive to new comers because the production require modern and specialize technology. They have to continuous developed their production. Moreover, the significant amount of capital a new firm would need, and the major established brands already in the industry. Overall, many new firms try to enter this industry, but they rarely give established names.

## 2.8 SWOT Analysis

### Strength

**Strong worldwide sale network:** KCE has a worldwide network of sales office. For example, in Singapore (KCE Singapore Pte. Ltd.), owned 49% .In America (KCE America Inc.) owned 50% owned, and in Europe as sale representative. Therefore, the company can provide the full commercial and technical support to the customers worldwide.

**Flexible manufacturing capability:** As extend the new plant, the company is able to increase the capacity to make quick product adjustments when the market demands change. The production volumes of company are not as large as but the company design each of plants to be flexible and ability of producing the different type of PCBs and raw material. This approach make the company to handle and meet changing market needs with efficiency, high quality and fast delivery

**Has its own Laminate and major raw materials supply:** The company has the subsidiaries that provide the essential raw material to produce PCBs. First, Thai Laminate Manufacturer Co., Ltd. produces prepreg and laminate that is a major PCB raw material. And, KCE Taiwan Co., Ltd., is an overseas sourcing representative for raw material and machinery for the company. Therefore, the company is able to product the essential raw material by themselves so the company have more power bargaining to supplier.

**Among the world's top five producers in automotive PCBs:** KCE is among the top five automotive PCB suppliers globally, among the top 50 of all PCB manufacturers globally and one of the largest in Southeast Asia. More than 70% of the customers are first-tier automotive suppliers such as Robert Bosch, Delphi, Continental and several others that have factories all around the world. The company has begun making inroads with Japanese automotive suppliers, as this is a large customer base, and with their track record of quality. The company expect to be their suppliers as well.

### **Weakness**

**Fluctuations in the exchange rate may affect operation:** Almost of KCE produce for export so bath volatility does effect the company operation. The exchange rates have changed substantially in recent periods and may continue to fluctuate substantially in the future. It is likely to have a negative impact on the company revenue, operating income and net income. And it will also have a material adverse effect on cost of services and gross margin. It may be a negative impact on the company, operating results and financial condition and results of operations.

**Shortage of skilled labor:** For the manufacturing process of PCB requires the specialist, a shortage of skilled workers is increasing on the level of skilled work. The human resource may be can't lean and develop their skill as fast as the modern technology. And, most technician workers are interested in the electronic sector more than electron sector.

**Low research and development expenses:** Electronic industry and production technology in domestic have not been encouraged to a modern equivalent to the abroad and still requires some technology from abroad to use in production. Therefore, the company have to invest in the expense to develop their products.

**High cost of capital:** For the high cost of capital reflected by high leverage financing. And, high DE ratio makes the higher leverage beta than major competitor (Delta).

## **Opportunities**

**Economic trend to recovery in the US and EU:** Due to KCE produce for export, most customer is in the US and Europe. So, the US and EU economy will affect the company income. After the Hamburger crisis and Euro crisis, the US and EU economy trend to continue recovery. Because the households are more expenditure and more demand. So, the industry has to produce the product as supply to support the increase in demand. Then, the industry is bustling.

**Industrial and healthcare products are expected to post the fastest growth:** As the health care industry is one of the worlds largest. There is consuming over 10 percent of GDP of the most developed nation. As the PSB is the component in medical equipment. Therefore, both of industries will growth together.

**The trend in the auto industry is shifting towards hybrid and electric cars:** As expected, there are growth drivers for the hybrid car. Because the industry collaboration impulses operational costs down compared to gasoline-powered vehicles. Demand for new technology for future vehicles is expected to rise steadily over the next several years. Therefore, the demand of vehicles will support demand for PCB going forward. This would boost KCE's orders as automotive PCB contributes.

**Board of Investment in Thailand privilege:** The Group and subsidiaries have been allowed promotional privileges under the Investment Promotion Act B.E. 2520 by the Board of Investment under certain significant conditions. So, the company gets the tax benefit to save cost and expense.

## **Treats**

**Increasing wage levels in Thailand:** After Thai government announced the Bt300 daily minimum wage policy which aimed at alleviating financial difficulties and raising the welfare of low-wage earners. Thai plant is production process so the large amount of labours is required. From the government policy, it makes the company have higher cost and expense as affect of Bt300 daily minimum wage policy.

**Risk of natural disasters:** The natural disasters which are flood, fire hazard and etc. cannot be eliminated and controlled. Thereby, it is difficult to forecast the loss from natural disasters and hard to control them. Moreover, it also makes the loss in the company asset and increase in cost for impairment.

**Risks competition from Chinese and Vietnam PCB:** There is price competition from China PCB manufacture. It makes the cheap and bargain products get into the PCB market. Although, it is the indirect competitors because of different target customers. However, it is the cause of price comparison which is indirect effect.

**Change in consumer satisfaction:** Customers are demanding products that are more efficient and higher quality. So, the company have to develop the technology in production process and quality product continuously for customer satisfaction.



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