

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



**A THEMATIC PAPER SUBMITTED IN PARTIAL  
FULFILLMENT OF THE REQUIREMENTS FOR  
THE DEGREE OF MASTER OF MANAGEMENT  
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**RELATIVE VALUATION OF KCE ELECTRONICS PUBLIC  
COMPANY LIMITED**

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## **RELATIVE VALUATION OF KCE ELECTRONICS PUBLIC COMPANY LIMITED**

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M.M. (CORPORATE FINANCE)

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### **ABSTRACT**

The purpose of this valuation report is to find the target price of KCE Public Company Limited (KCE), one of the massive PCB manufacturers for Automotive in Thailand and listed in the global top rank. In 2017-2021, KCE's revenue growth was slow down from the impact of COVID-19 spreading in global. During the past phase, KCE projected that there are sustainable potential in Automotive market especially EV car which require a massively technology inside. Therefore, KCE invest a lot in expansion the facility and technology and plan that they will reverse back to achieve CAGR 15% from 2022- 2026. The average target price during 2023 – 2024 is equal to THB 61.22 per share compared to the recent price as of 31 Mar 2022 is equal to THB 65.60 per share means that the current price is trading overvalued. The incoming trend of technology in passenger car and emerging of EV car market would trigger the high demand of PCB part and strengthen the financial performance of KCE company. However, since economics worldwide and the war are crucial factors to be concerned for investors. Thus, the recommendation for the existing and potential investors to KCE is “Hold” until any further new business plan release out from the company and better economic situation

**KEY WORDS:** KCE/ Discounted Cash Flow/ PCB for Automotive/ EV

40 pages

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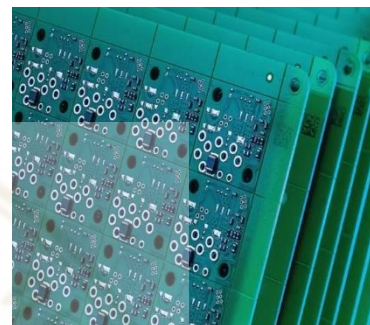


## LIST OF ABBREVIATIONS

KCE	KCE Electronics Public Company Limited
IT	Information Technology
PCB	Printed Circuit Board
CAGR	Compound Annual Growth Rate
SET	The Stock Exchange of Thailand
B2C	Business to Consumer
B2B	Business to business
EV	Electric car
SEC	Securities and Exchange Commission
AGM	Annual General Meeting of Shareholders
GDP	Gross Domestic Product
4P	Products, Price, Place, and Promotion
DCF	Discounted Cash Flow
EBIT	Earning Before Interest and Tax
CAPEX	Capital Expenditures
ROE	Return on Equity
D/E	Debt-to-Equity
AR	Account Receivable
AP	Account Payable
THB	Thai Baht
WACC	Weighted Average Cost of Capital
FCFF	Free Cash Flow to the Firm
COGS	Cost of Goods Sold
PDPA	Personal Data Protection Act

## CHAPTER I INTRODUCTION

KCE Electronics Public Company Limited (KCE) was established on 5 November 1982 in Thailand. The company main product to produce and distribute Print Circuit Boards (PCBs) for Automotive industry worldwide. The PCBs produced from epoxy glass copper clad which manufactured under their group company.



KCE's stock was first trading day in the stock exchange of Thailand (SET) on 30 August 1988 with registered capital THB 591,396,798.00 the current closing price on 31 Mar 2022 is THB 65.50 per stock while trading volume estimated around THB 11,038,600

**Table 1.1 Financial Highlight**

KCE Financial Highlight	2017	2018	2019	2020	2021
<b>Total Sales Revenue</b>	14,195.41	13,982.49	12,097.37	11,527.16	14,937.78
<b>EBITDA</b>	3,359.66	2,815.60	1,853.62	2,328.54	3,735.63
<b>Net Profit</b>	2,544.50	2,014.87	934.49	1,126.79	2,426.28
<b>Net Cash from Operating Activities</b>	3,455.68	2,669.59	2,270.91	2,209.82	1,690.33
<b>EPS in Baht</b>	2.17	1.72	0.80	0.96	2.05
<b>Total Asset</b>	17,850.25	18,121.01	16,501.00	17,377.04	21,950.73
<b>Total Liabilities</b>	6,575.95	6,113.91	4,739.06	5,315.02	8,508.64
<b>Total Shareholder's equity</b>	11,229.00	11,951.00	11,712.00	12,010.00	13,380.00
<b>Dividend Yield</b>	2.66%	4.19%	3.88%	1.93%	1.70%

Source: (KCE Electronic, 2020)

KCE's main sources of total revenue 70% from exporting PBCs for automotive industry worldwide 50% of customers in Europe while both 20% from each Asia and the United States and the rest of 10% sell locally.

According to table 1.1 Financial Highlight of KCE, total revenue in 2021 and net profit increased by 30% and 115% respectively compared to 2020. because Europe and the U.S. economic rebound from Covid-19 pandemic. The revenue mainly from Electronic Vehicle (EV) expected sales growth by 15% in the next 5 years. However, if we compared 2021 to 2017 CAGR increased only 1% but EV is in a worldwide trend thus we are optimistic that KCE will growth sustainability in the long term.

This paper is particularly intention to estimate KCE stock price during 2022 – 2024 by using the relative valuation method including analysis of financial and business performance,

The first part will be conducted introduction of KCE with its business, products activities, strategies. Secondly, analysis of Macro Economic in both Europe, United states, Industry analysis for the factors impact KCE revenue. Secondly, the analysis of the country's economy, also competitors. Thirdly, we will focus on historical financial data to understand business performance and projected in key financial. fourthly, we will estimate the Valuation method and the risk of business. Finally, in the conclusion part we will summarize all analysis and recommendation to the investors.

## **CHAPTER II**

### **BUSINESS DESCRIPTION**

This chapter will introduce more deeply to KCE group of business for instance Company History and the outline of the business, Products information and categories, Revenue structure and company previous and existing strategy.

#### **2.1 Overview of Business**

KCE Electronics PCL (KCE) business is producing and focusing on so-called “Printed Circuit Boards” (PCBs) (Paul, 2012). PCBs become parts of manifold devices in various of electronic products such as automotive electronic equipment, telecommunication devices, computer networks, industrial equipment, medical equipment and consumer products.

KCE is currently focusing on automotive industry to serve the demand of electronic vehicle (EV) market worldwide mostly export to Europe, United states and Asia. The company was ranked the 6th largest automotive PCB producer of the world in 2021 with expert experience more than 20 years (KCE Electronic, 2020).



**Figure 2.1 KCE manufacturing in Lat Krabang**



**Figure 2.2 The chronological business development of KCE group**

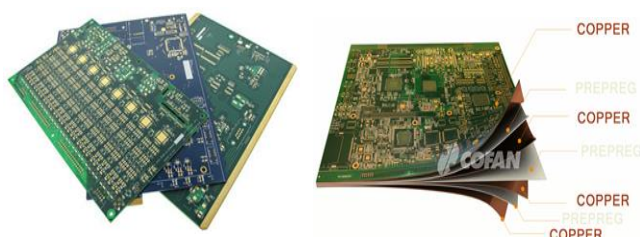
Source (KCE Electronic, 2020)

### KCE Group company in Thailand

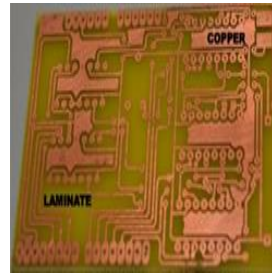
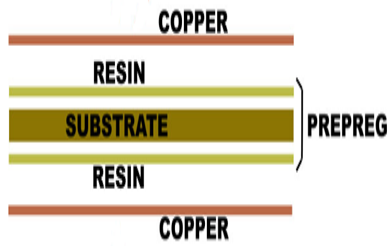
1. Electronics Public Co., Ltd. (**KCE**) recently became a public company listed on the (SET) under stock name **KCE**.
2. KCE International Co., Ltd. (**KCEI**) is a manufacturer and distributor of **double-sided** PCBs.
3. KCE Technology Co., Ltd. (**KCET**) is a manufacturer and distributor of **multilayer** PCBs, mostly for 4-6 layers.
4. Thai Laminate Manufacturer Co., Ltd. (**TLM**) is a raw materials manufacture and distributor of copper clad laminate (Laminate) and pre-impregnated fiberglass (Prepeg).

### 2.2 Products

Printed Circuit Board (PCB), The core business of KCE group is to produce and distribute Printed Circuit Board (PCBs). The main revenue mostly from being a supplier for automotive industry.



**Figure 2.3 Types of PCB, Source (SANTOSH, 2021)**

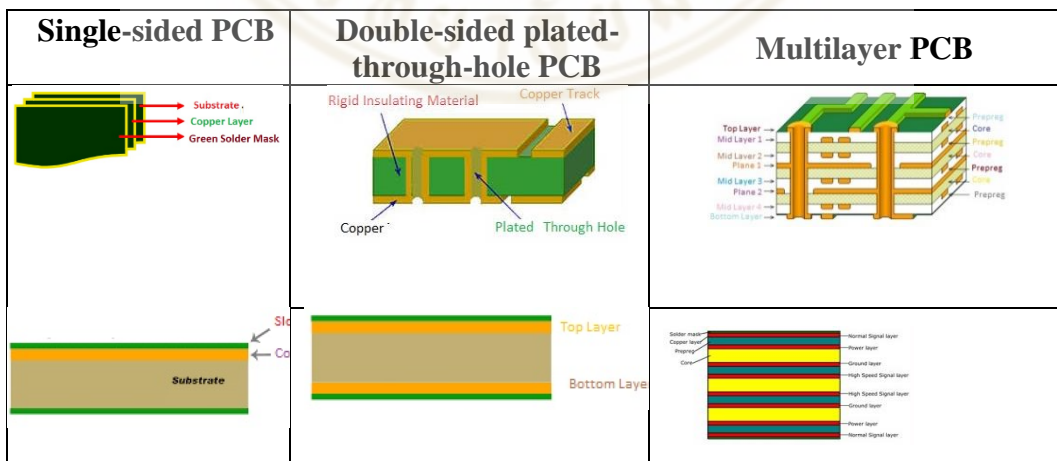


**Figure 2.4 Copper Clad Laminate (CCL), Source (SANTOSH, 2021)**

Printed Circuit Board (PCBs) have a copper pad plate onto the board being as a pathway for electrical signals consist of two main parts: 1) Base or substrate made from epoxy fiberglass 2) Conductor to connect the different components on the PCBs (Bob, 2020).

**The three main types of PCB**

1. Single-sided PCB: the one printed side of copper layer for electrical signal connection with simple production process.
2. Double-sided plated-through-hole PCB: the two sides printed of copper layer for electrical signal connection on both sides of the board.
3. Multilayer PCB: the complicated printed layers connected with plated-through holes of the board (SANTOSH, 2021)



**Figure 2.5 PCBs ingredient and Fabrication**

Source: KCE annual report, (SANTOSH, 2021)



## 2.3 Revenue Structure

KCE has 3 main sources of revenue structure provided different products and services 1) Original Brand Manufacturer (OBM) 2) Prepreg Laminate Business and 3) Chemical business. According to table 2.1 Sales Breakdown table below shows that majority source of revenue mainly from Multilayer PCBs above 80% of total revenue since 2017 – 2021. Second source of revenue from Double Sided has been reducing from 16% to 9% in 2021 (CAGR-10%) due to company strategy to focus on more complicated multilayer (CAGR+1.5%).

Recently, PCB producers are likely to make PCBs more flexible, thinner for high technology in automotive industry to strengthen the vehicle more comfortability, safety, and environment friendly. For example, in term of safety in the automotive sector the government in many regions revised Safety Regulation so that PCBs as a significant part in vehicle developed safety system to comply with the law such as Intelligent Speed Assistance System, Autonomous Emergency Braking System, Belt Pre-Tensioner System those factors are positively increasing demand for PCBs automotive market.

Raw material of PCBs are Prepreg and Laminate produced by TLM, In 2020 KCE purchased Prepreg and Laminate locally from TLM estimated 70% of total usage while imported remaining of 30% caused CAGR of Prepreg and Laminate growth by 63%

**Table 2.1 Sales Breakdown by Products**

SALES by Products	2017		2018		2019		2020		2021		CAGR 2017-2021
	Million Baht	%	Million Baht	%	Million Baht	%	Million Baht	%	Million Baht	%	
<b>OBM PCB</b>											
Double Sided	2,297.84	16.19%	2,003.17	14.33%	1,641.36	13.57%	1,280.63	11.11%	1,344.40	9%	-10.17%
Multilayer	11,480.17	80.87%	11,512.77	82.34%	9,966.41	82.38%	9,105.17	78.99%	12,398.36	83.00%	1.55%
									-		
<b>Prepreg Laminate Business</b>	71.77	0.51%	74.84	0.54%	174.53	1.44%	756.75	6.56%	821.58	5.50%	62.83%
									-		
<b>Chemical Business</b>	345.63	2.43%	391.71	2.80%	315.07	2.60%	384.61	3.34%	373.44	2.50%	1.56%
									-		
<b>Total Sales Revenue</b>	14,195.41	100.00%	13,982.49	100.00%	12,097.37	100.00%	11,527.16	100.00%	14,938	100.00%	1.02%

Source (KCE Electronic, 2020)

In July 2021 NTI-100 reported that 127 PCBs manufactures in the world performed output of USD 68.672 billion. Global market increased by 8.9% while KCE

was ranked 41st PCBs maker in the world in 2020. Moreover, for automotive PCBs maker KCE was ranked the 6th largest manufacturer in 2021.

According to Sales Breakdown by region below found that KCE mainly export to Europe nearby 50% since 2017 followed by 20% for both United States, Asia and the remain for local buyer. Source: Rocket PCB (Rocket-PCB, 2020)

**Table 2.2 Sales Breakdown by Region**

SALES by Region	2017		2018		2019		2020	
	Million Baht	%	Million Baht	%	Million Baht	%	Million Baht	%
Europe	7,807.48	55.00%	7,550.54	54.00%	6,411.61	53.00%	5,602.20	48.60%
United States	2,455.81	17.30%	2,712.60	19.40%	2,358.99	19.50%	2,397.65	20.80%
Asia	2,910.06	20.50%	2,684.64	19.20%	2,322.70	19.20%	2,524.45	21.90%
Local	1,022.07	7.20%	1,034.70	7.40%	1,004.08	8.30%	1,002.86	8.70%
<b>Total</b>	<b>14,195.41</b>	<b>100.00%</b>	<b>13,982.49</b>	<b>100.00%</b>	<b>12,097.37</b>	<b>100.00%</b>	<b>11,527.16</b>	<b>100.00%</b>

Source: KCE annual report 2020

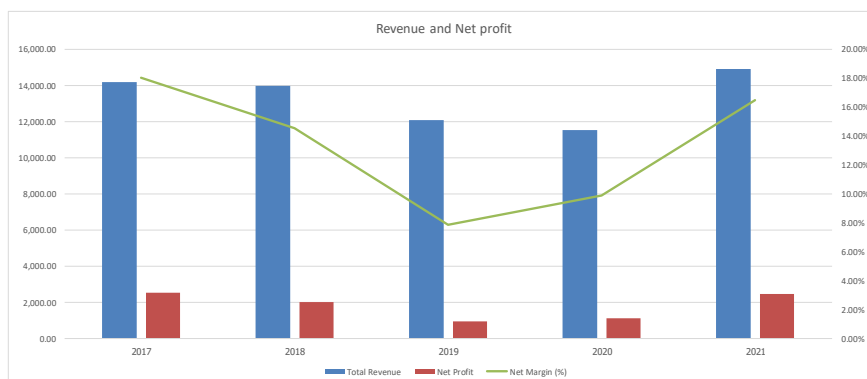
In 2017 KCE was the most successful year with highest Revenue THB 14,195.41M, Net Margin THB 2,531.00M. due to increasing manufacturer capacity Phase 1, 2 and new factory phase 3 to incremental capacity in Lat Krabang Industrial Estate. However, compared 2018- 2019 revenue dropped by 13.5%, Net Margin dropped by 53.6% caused by the slowdown of automotive market in Europe and United States. Moreover, Thai baht was appreciation against USD, Euro and lower usage of production capacity thus those factors are heavily impacted to KCE financial highlight.

Referring to annual report found that in 2021. KCE reached total production capacity at 40.8 million square feet per year. The demand for automotive market just has been recovered from Covid-19 pandemic caused to revenue returned to THB 14,937.78M. similarly as of 2017 (KCE Electronic, 2020).

**Table 2.3 Revenue and Net Profit 2017-2021**

	2017	2018	2019	2020	2021
Total Revenue	14,195.41	13,982.49	12,097.37	11,527.16	14,937.78
Net Profit	2,531.00	2,012.00	930.00	1,130.00	2,453.00
Net Margin (%)	18.05%	14.55%	7.85%	9.91%	16.48%

Source: KCE annual report 2020



**Figure 2.6 Revenue and Net Profit 2017-2021**

Source: KCE annual report 2020

## 2.4 Strategies

Since covid-19 pandemic spread in early 2020 impacted economics situation worldwide to all sectors. people lifestyle has changed to new normal. KCE had been critically impacted to it' business, Sales Growth reduced 4.7% in 2020 compared to 2019 due to final buyer delayed buying a new car and working from home policy released to control people transportation at that time.

However, in 2021 the restriction was relaxed for people who have vaccinated allow to travel and live with a new life with current situation as same as KCE aware of new normal with more complicated and customer behavior changed.

People tend to purchase more family car to travel privately and securely those will directly impact to demand of new registration car in Europe and the United States market.

KCE is currently focusing on R&D developing advanced technology to strengthen it production quality by implementing artificial intelligence technology (AI) in manufacturer. KCE invested heavily of USD 6M. in 2020 for purchasing new machinery for HDI production. Moreover, KCE planed of further investment of USD30 for High-tech PCBs which is new product and tend to be a crucial sustainable long-term growth in the near future (KCE Electronic, 2020).

## **CHAPTER III**

### **MACROECONOMIC, INDUSTRY ANALYSIS, COMPETITION ANALYSIS**

This chapter generally explain about the Macro and Micro perspective related to the KCE business. The analysis begin with Marco economic section which describe the global factor which impact to the KCE business. The industry analysis mainly discusses on how automotive industry change relatively with KCE positioning and lastly competitors' analysis which mention about the peer's selection for comparable reason.

#### **3.1 Macro economic Analysis**

##### **World Economic Outlook**

2022 is a year of economic recovery from dramatically Covid-19 pandemic since 2020. There are various optimistic factor to encourage economic satiation in this year such as number of World fully doses vaccination is 58% in Mar 2022, many counties started fully opening the country without quarantine manner in April 2022, restaurants, nightclubs, shopping malls, department stores are operating normally as same as factories in industries zone.

There are weakness point to hit economics growth such as lack of goods shipment worldwide including Global Supply Chain disruption, Containers shortage, Inflation raises, Chips shortage and especially Russia – Ukraine Invasion. Since Russia is an energy supplier 10% of the World including natural gas and oil, we are concerned about those pricing up to higher the cost of its industry.

### 3.1.1 World GDP Forecast

IMF expected Global GDP growth rate from 5.9% in 2021 to 4.4% in 2022 predicted based on two largest economies the United States and China. For the United States aim to internal investment from Build Back Better fiscal policy for mainly improvement of infrastructure within the country while China has zero-covid policy since 2019 but seem to be unsuccessful as new cases of Covid-19 in mainland China is reached up to 7,500 cases a day (IMF, 2022) (Patricia, 2022).

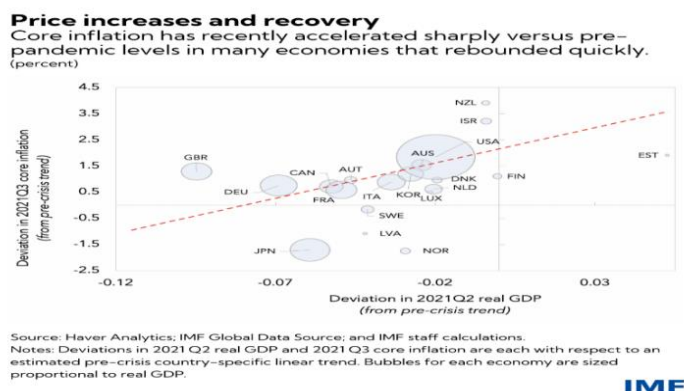


**Figure 3.1 New covid-19 cases in China**

Source: IMF, NY times

### 3.1.2 Inflation Raise

Higher inflation rate caused by higher cost of consumption, energy, and food. The policymakers attend to gradually increase policy rate led by FED goes up to rate by 0.25% on 17 Mar 2022 to reduce high inflation rate.



**Figure 3.2 Inflation, Source: (IMF, 2022) (ELISSA, 2022).**

### 3.1.3 Europe Economic Outlook

Europe economy expected to by 4.0% in 2022 and 2.8% in 2023 after the rebound in economics. EU still concern on energy uncertainty price and tend to go up from Russia – Ukraine invasion begins in Feb 2022 combination higher inflation effects higher energy price. On the other hand, internal consumption is stronger than expected with investment in euro zone (Commission, 2022).

### 3.1.4 US Economic Outlook

The US economy is now on recovering process from Covid-19 outbreak. The performance is better than expected with lower unemployment rate while internal investment and cooperate profit are satisfied from Biden’s Build Back Better policy to focus on internal infrastructure development with the budget approximately of USD 2.2 trillion. (Commission, 2022), (House, 2021).

### 3.1.5 Copper Price

Copper is one of raw materials to produce PBCs as Copper is conductive signal without losing electricity when transmit the signal. Since 2020 Copper price has been going up from USD 2.82 per pound in Jan 2020 to USD 4.68 per pound in Mar 2022 or 60% within 2 years impact cost of goods sold increased. In 2021 Copper price was fluctuated from copper mine closure in Peru and Chile impacted Copper supply chain

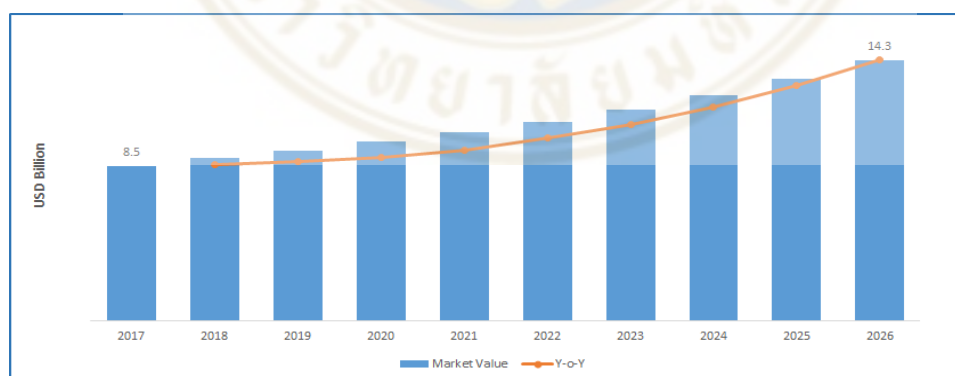


**Figure 3.3 Copper Price Graph,**

Source: (Economics, Trading Economics , 2022), (Knoema, 2021)

### 3.2 Industry Analysis

The global automotive PCB Market was valued at USD 8.5 billion in 2017 expected to reach (Figure 3.4) USD14.3 billion in 2026 with CAGR growth rate at 6.3%. PCEs is used for a significant component part of vehicle. The key driving for PBCs in automotive is to develop Advanced Driver Assistance Systems (ADAS) a car feature to support automated driving systems safer, entertainment and comfortable as a result the significant key is to reduce an accident and save a life.

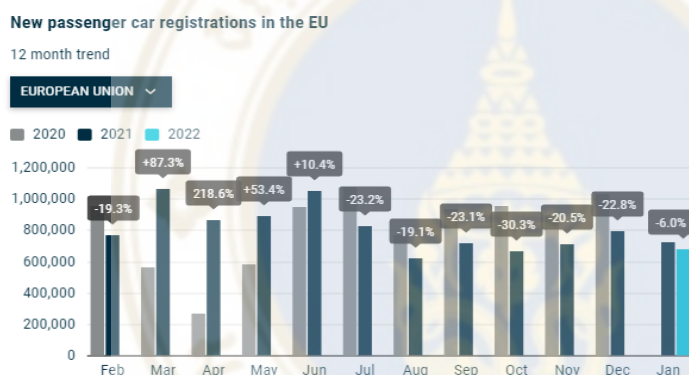


**Figure 3.4 PCBs Maker Value**

Source: (Research, 2018)

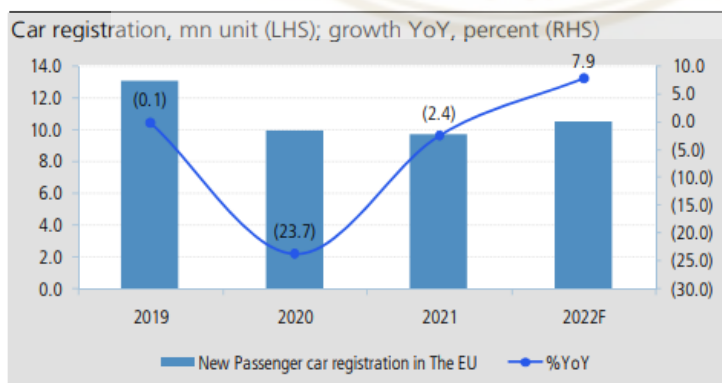
KCE main sources of revenue generated from exporting 50% to Europe and the U.S. while 20% from Asia so that we will estimate the car registration number in those region as they are main customers of KCE.

For Europe market in April – May 2020 car registrations in Europe was impacted by Covid-19. During Mar – Mar 2021 new cars increased more than 2020 for the same period but the rest of 2021 was reduced again around 20%. However, we see a positive sign on Jan 2022 that demand of new car in Europe is gradually increasing as same as KGI Securities Research said that new car registration in Europe will growth up to 7.9% in 2022 as same as MarketWatch published that Europe EV market size expected to grow by 20.9% for the period of 2020-2030.



**Figure 3.5 No. of new car registration in Europe,**

Source: Market Watch, (Acea, 2022)

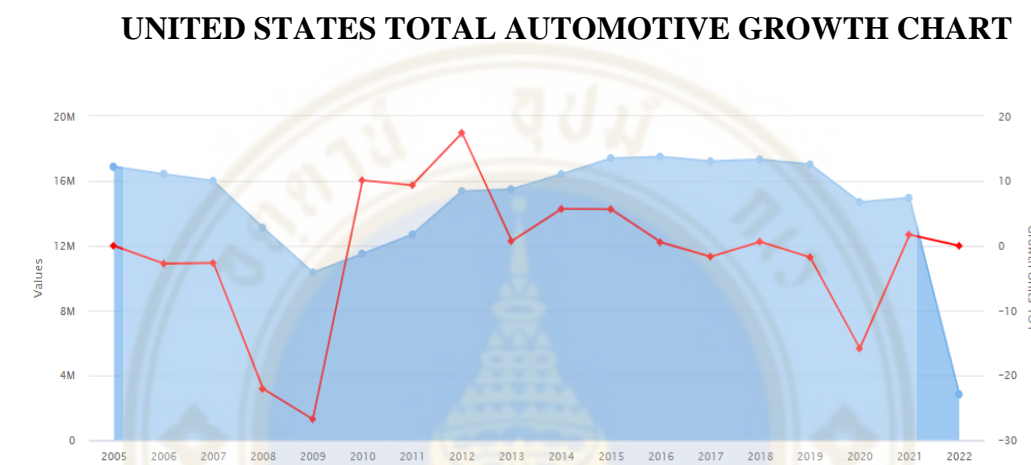


**Figure 3.6 EU passenger car registration Growth YoY**

Source: KGI Securities Research



For United States market. Automotive growth chart shows below that in 2020 growth rate was -16% impacted by Covid-19 similarly to 2008-2009 The Great Recession crisis the growth approximately 25%. However, in early 2022 the growth rate is returned to pre Covid-19 in 2019 which is an optimistic sight for growing next year because the U.S. unemployment rate dropped to 3.9% in December 2021.



**Figure 3.7 U.S. Automotive Growth Chart**

Source: (Analysis, 2022), (CHRIS, 2018)

### 3.3 Competition analysis

Porter's Five Forces is a model to analyze five factors of risk to help company to determine an industry's weaknesses and strengths.

#### KCE Five Forces Analysis

##### 1. High competition in the industry

Currently, KCE is ranked 6th of automotive maker in the world. However, there is high competition from Chinese and Taiwanese producers, especially Chinese PBCs producer they have lower cost of worker, bigger capacity, higher investment, product differentiation. Moreover, China has Tesla Gigafactory a manufactory to produce Tesla' EV feed to Europe demand about 2,000 vehicles per day which is a significant number

## **2. Low potential of new entrants into the industry**

PCBs maker is high competition so far thus, if any new company want to participate to this market may need to intensively invest in factory, advanced technologies, and skilled workers. Moreover, economies of scale to produce is significantly factor to consideration.

## **3. Low bargaining power of suppliers**

KCE has an advantage of suppliers to provide raw material Laminate and Prepreg from Thai Laminate Manufacturers Co., Ltd. their own subsidiary company thus, KCE has authorize and power to negotiate suppliers.

## **4.High bargaining power of customers**

Although KCE is a Tier 1 automotive supplier for the past 20 years. However, the clients are mainly located in Europe and the United States which are luxury automotive companies and powerful to negotiate the orders and prices so that KCE may need more time to step up to reach Medium bargaining power of customers.

## **5. Medium threat of substitute product**

Recent day if any PCBs maker can produce or R&D of Advanced Technology may be a medium-term risk because they need to take times to be a mass product in production process. However, the substitute product can be fully replaced once we discovered new raw material which will be considered as in the long-term risk of substitute products.

## **Competitors List**

### **1.Hana Microelectronics Public Co., Ltd.**

HANA has been engaged in electronics component for over 40 years to produce The Printed Circuit Board Assembly (PCBA) and Integrated Circuit (IC), currently they head office in Bangkok and 6 manufacturers based in Thailand, USA, China and Cambodia (HANA, n.d.)

### **2.SVI Public Company Limited**

SVI was established since 1985 in Thailand to provide Electronics Manufacturing Services (EMS) worldwide. The company engaged in variety of many sectors such as Automotive, clean energy, communication, and network. The main 75%

of client is in Europe while the rest of 25% are based in United States and Asia (SVI, n.d.).

### **3. Delta Electronics (Thailand) Public Co., Ltd.**

DELTA is recently producing various products to serve electronic components segment such as information technology, automotive, industrial appliance, medical industries, and telecommunication. The company mostly export to Asia, Europe and South America markets (DELTA, n.d.). DELTA stock was taking of the town due to pricing aggressively increased up to 165% in Sep 2021 at THB768.0 per stock but finally stock price dropped to THB388.0 on 31 Mar 2022

### **4. Chin-Poon Industrial Co. Ltd.**

Chin-Poon is established in Taiwan since 1979. The company is specialized in producing PCBs with high technology and good reputation in the market. Chin-Poon has a representative manufactory in Bangkadi Industrial Park, Pathumthani, Thailand (Chin-Poon, n.d.).

### **5. Unimicron Technology Corporation**

Unimicron's head office is in Taiwan founded in 1990 to produce and distribute PCBs for cellular phones, tablet, gaming devices and image sensors (Unimicron, n.d.).

### **Peer Analysis**

The competitors list will use for settling a peer benchmark in relative valuation part for KCE. The companies listed in the Stock Exchange of Thailand such as Hana, SVI and Delta, even though those company not intensively focus on Automotive PCB maker, but they are suitable competitor benchmark for semiconductor industry sector in Thailand which having sufficient comparable information.

For better applying the model, we select Chin Poon and Unimicron which is direct competitor with KCE Electronic Thailand for Automotive PCB business. Those Taiwanese company continually be a main player and potential threaten to acquire the market share from KEC. Therefore, there are suitable peer to compare the business competency and earning margin ability with KCE. Therefore, with the intensive of gathering information from insider and external source, we typically ensure that the peer's analysis is more reasonable than selecting all listed technology company in Stock

Exchange of Thailand or select the global semiconductor company which might not fair for the target firm because excessively difference of business scale.



## CHAPTER IV

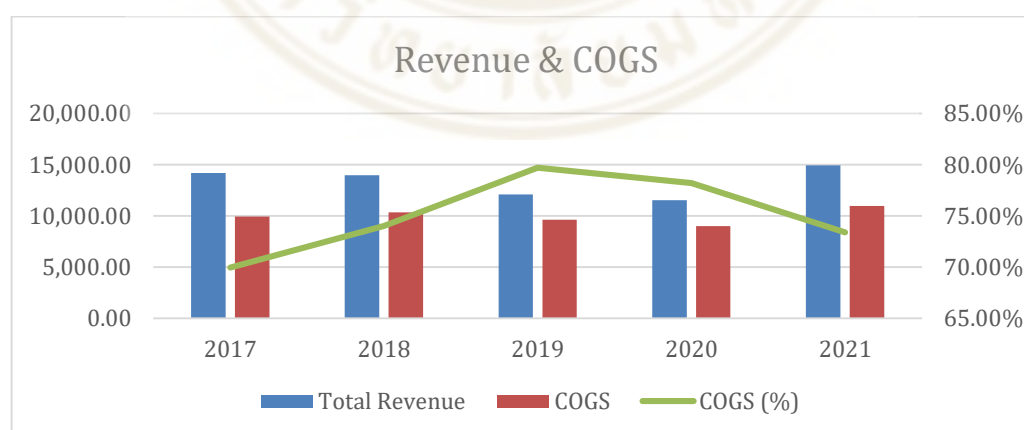
### FINANCIAL STATEMENT ANALYSIS

#### 4.1 Study of Historical Financial Data

In this Financial Statement Analysis chapter, we will study and analysis the historical financial performance of KCE since 2017 including key financial factors such as Sales, Cost of Goods Sold (COGS), Expenses, Net Income (NI) and other related financial ratios. After that we will estimate forecasting those factors in projection financial analysis part for both SCF and relative valuations.

##### 4.1.1 Sales

During 2017-2019 Sales has CAGR decreased by 3.15% mainly from a slowdown from automotive demand and THB appreciation against to both of USD and Euro which are two main currencies of revenue. However, for period 2019-2021 Sales CAGR has been gradually increasing up to 4.31% especially in 2021 the revenue going up to nearby Sales in 2017 which is a good sign of market recovery from post covid-19 pandemic and higher demand in the automotive market (KCE Electronic, 2020).



**Figure 4.1 Revenue & COGS**

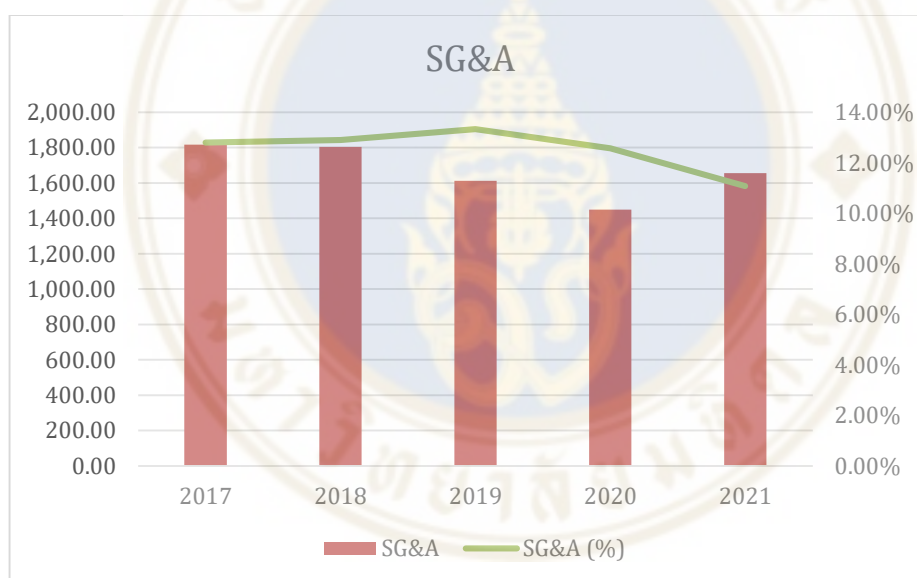
Source: (KCE Electronic, 2020)

### 4.1.2 Costs of Goods Sold (COGS)

In 2019 KCE cost of goods sold was reached up to 80% of total revenue from 74% in 2018 and 70% in 2017 respectively mainly impacted from higher cost and foreign currency exchange rate fluctuation THB appreciation against both USD and EUR (KCE Electronic, 2020). However, in 2021 KCE has well management of COGS to hedge forward exchange rate and lower of copper raw material.

### 4.1.3 Sales and Administrative Expenses

Selling, general, and administrative expense approximately 13% of total revenue. Since 2019 the expensed has been gradually decreasing from 13% to 11% in 2021 because decreasing in lower Sales, employee working hours and cut in all expenses (KCE Electronic, 2020).

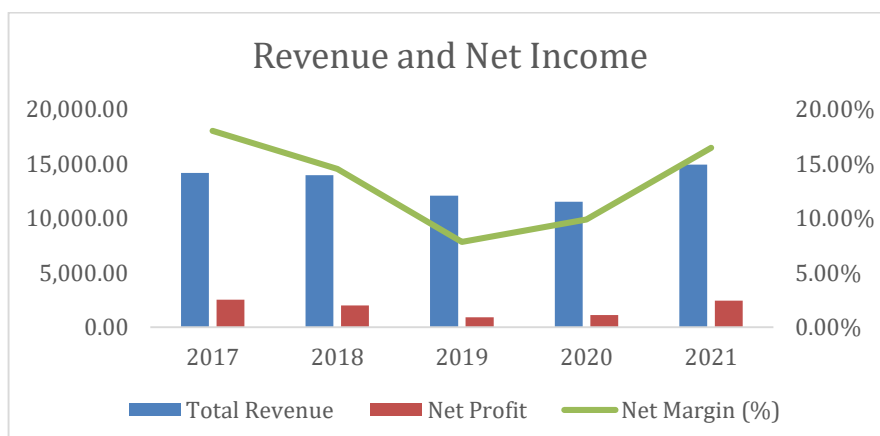


**Figure 4.2 SG&A,**

Source: (KCE Electronic, 2020)

### 4.1.4 Net Income (NI)

Net Income is significant increasing from 8% in 2019 to 16% in 2021 mainly from post-covid-19 and lower in cost of goods sold that lead to a higher margin. Moreover, there is a new plant in Lat Krabang to boost revenue to reach economies of scale and maximize margin (KCE Electronic, 2020).



**Figure 4.3 Revenue and Net Income**

Source: (KCE Electronic, 2020)

#### 4.1.5 DuPont Analysis

Dupont analysis of ROE (Return on Equity) is a ratio that help investor to estimate the company whether that company has well return on investment. According to Dupont ROE below found that Net Profit has closely relationship with ROE as estimated in 2019 ROE was 7.86% while Net Profit was dropped significantly to 10% from previous graph. Higher ROE is better return so that in from 2019-2021 KCE has ROE gradually been increasing assumed that KCE would be more attractive to investor even compared to peer companies.

**Table 4.1 Dupont Analysis**

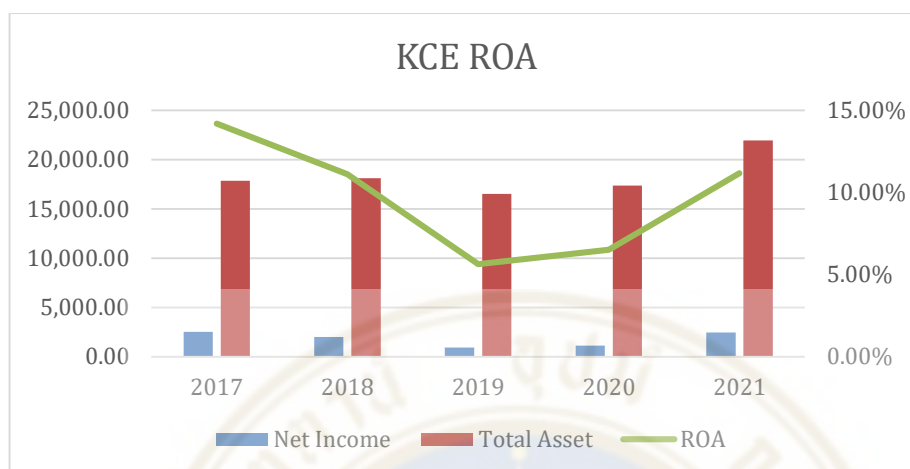
DUPONT Analysis	KCE					HANA	SVI	DELTA
	2017	2018	2019	2020	2021	2021	2021	2021
Net Profit	2,531.00	2,012.00	930.00	1,130.00	2,453.00	1,545.31	1,407.62	6,699.01
Equity	11,229.00	11,951.00	11,712.00	12,010.00	13,380.00	23,058.09	5,204.78	41,404.30
Asset Turnover	0.81	0.78	0.70	0.68	0.68	0.91	1.36	1.35
<b>Dupont ROE</b>	<b>23.86%</b>	<b>17.36%</b>	<b>7.86%</b>	<b>9.53%</b>	<b>19.32%</b>	<b>6.70%</b>	<b>27.04%</b>	<b>16.18%</b>

Source: (KCE Electronic, 2020). Own calculations

#### 4.1.6 Return on Asset Analysis

Return on Asset (ROA) is a financial ratio to indicate that how profitable a company to generate to its total assets. According to Figure 4.4 found that KCE ROA moves between 6% – 14% during 2017 – 2021. The lowest was in 2019 impacted from reduction of property value, plant, equipment, and other related assets. However, during

2020 – 2021 ROA has been gradually increasing mostly from increasing of liquidity reserve and account receivable (KCE Electronic, 2020).

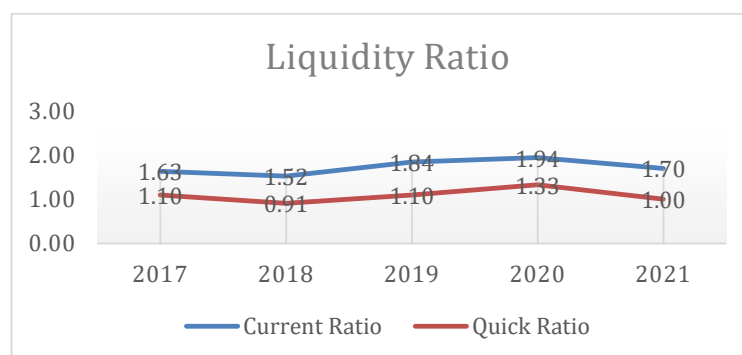


**Figure 4.4 ROA**

Source: (KCE Electronic, 2020)

#### 4.1.7 Liquidity Ratio Analysis

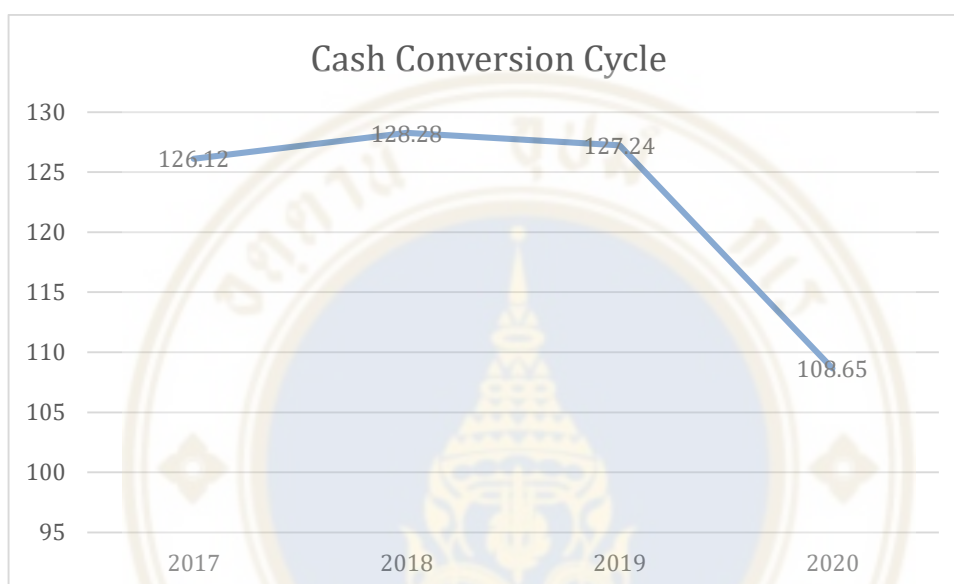
This Liquidity Ratio part we will estimate the ability of KCE to repay short-term obligations within one year during the last five years since 2017 – 2021. For this estimation we will focus on Quick Ratio because it removed inventory from calculations thus, Quick Ratio will more accurately to estimate KCE liquidity as shows in Figure 4.4 found that Current Ratio stands around 1.5x-2.0x while Quick Ratio stands around 1.0x. mean that KCE has well ability to repay it short-term debts and obligations. However, the Quick Ratio graph seems to be lower trend which is a challenging for KCE to manage liquidity ratio further. (KCE Electronic, 2020)



**Figure 4.5 Liquidity Ratio, Source: (KCE Electronic, 2020)**



Cash Conversion Cycle (CCC) is a measurement to show the range of time that company could convert its investment to cash flow from sales activity. According to Figure 4.6 found that KCE in the past four years has well management since 2018 CCC been gradually reduced especially in 2020 CCC is calculated at 109 days from 126 days in 2017 mainly from reduction Average Receivables Collection Days and longer in Average Payables Payment Days.

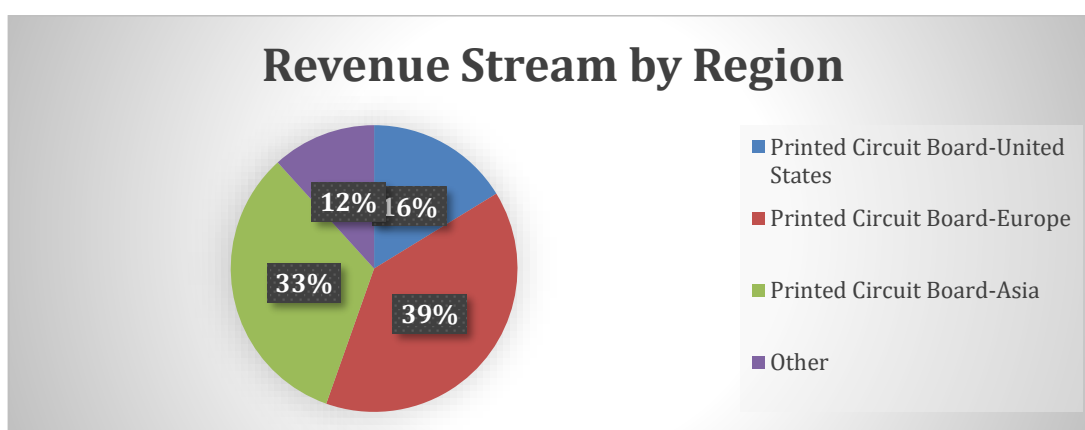


**Figure 4.6 Cash Conversion Cycle,**  
Source: (KCE Electronic, 2020).

## 4.2 Projections of KCE Electronic Financial Statement

### 4.2.1 Sale Forecast Projection

The sale revenue able to divide into 4 mains tentatively. The printed Circuit Board which sold to each region Europe 39%, United State 33%, and Asia 16% respectively (Figure4.7) The other sale consists of chemical and prepreg laminate business 12 % which not significant growth expectation in the business strategy of KCE (KCE Electronic, 2020).



**Figure 4.7 Revenue Stream by Region**

Source: (KCE Electronic, 2020)

The projection expects to grow around 15- 20% per year. With the macroeconomic analysis from previous chapter, it's forecast that the upcoming trend will be the increasing of EV car and the increase of passenger car from Europe. For year 2022, the EU passenger car increase around 8% which imply that the limited supply of semiconductor raw material gradually recovers, and overall expectation of EU car market will increase 23% from last year. Europe is the region that most concern on environment problem, Therefore, electric vehicle will be outstanding growth rather than other region. In this case (table 4.1), we projected the No. of multilayer PCB sell to Europe will increase around 23%. Other region will grow proportionally 8% according to KCE internal forecasting. KCE also incremental invest for their production capacity the factory to prepare for significant increasing trend of electrical automotive part.

**Table 4.2 Revenue Stream by Products**

	2021 A	2022F	2023F	2024F	2025F	2026F	CAGR
	14,938.00	17,834	20,993	24,852	29,590	35,433	15%
	Growth	19.39%	17.71%	18.38%	19.06%	19.75%	
Printed Circuit Board-United States	2,427.9	2,670.7	2,937.7	3,231.5	3,554.7	3,910.1	8%
Printed Circuit Board-Europe	5,851.0	7,489.23	9,586.21	12,270.35	15,706.05	20,103.75	23%
Printed Circuit Board-Asia	4,904.8	5,395.2	5,934.8	6,528.2	7,181.1	7,899.2	8%
Other	1,754.2	1,929.6	2,122.6	2,334.8	2,568.3	2,825.2	8%
Ex Rate Effect		2%	2%	2%	2%	2%	

Source: (KCE Electronic, 2020)

Ever since the most of revenue targeted on oversea. The impact of exchange will significantly affect the projection of KCE sale. The Euro currency will effect on the revenue section because the most of customer is in Europe and USD currency will affect the supply side because all of material need to import from foreign country.

**Table 4.3 THB against EUR AND USD**

THB/EURO	2017	2018	2019	2020	2021
	38.28	38.15	34.75	35.68	37.81

THB/USD	2017	2018	2019	2020	2021
	33.94	32.31	31.05	31.29	31.98

Source: Bank of Thailand

We estimate the forward exarate in the next 5 year by using Forward Exchange rate calculation. By applying spot rate of each country as of up-to-date information multiple with the  $1 + \text{Domestic Interbank Rate} / 1 + \text{Foreign interbank rate}$ . The result can imply that the Thai Baht likely to depreciate relative to foreign currency.

The effect of exchange rate is 2 % of total revenue in this case because of the estimation from CAGR of next 5 year. (Table 4.2)

**Table 4.4 Interbank Rate**

	Interbank Rate	SPOT	Forward
USD	2.75%	33.515	34.69
EURO	0.00%	36.941	37.22
THAI	0.75%		

Source: Trading Economic

**Table 4.5 Interbank Rate**

	2021	2022	2023F	2024F	2025F	2026F	CAGR
USD Ex Rate	31.98	34.69	35.73	36.80	37.91	39.04	3%
EURO Ex Rate	37.81	37.22	38.34	39.49	40.67	41.89	2%

Source: Trading Economic

Therefore, the sale revenue will have CAGR 15% from 2021A – 2026F

### 4.2.2 Cost of sale projection

The raw material purchasing consist of copper foil, Copper Anode and Fiber glass which mainly direct effect from the variability of copper price and exchange rate. KCE it ‘self-assume that the copper price impact to yearly cost of raw material around 4.5%. Therefore, we are going to assume that the forecast of copper price and USD/THB exchange rate will impact on the forecast of cost of goods sold in KCE.

**Table 4.6 Copper Price**

		Y2021	
		Unit price	Volume
Copper Foil (KCE)	KG.	\$12.90	2,040,594
Copper Foil (TLM)	KG.	\$14.35	2,951,382
Copper Anode	KG.	\$9.68	2,034,000
Fiber glass	METRE	\$0.70	18,656,831

Source: (KCE Electronic, 2020)



**Figure 4.8 Copper price trends**

Source: Trading economic

The copper rate mainly use from LME future exchange market whereas the NTM copper price is 5.08 USD/LBS and the actual price in 2021 is 4.68 USD/LBS. We estimate that the price in 2022 will significantly increase with touching 8.55%. The copper price in next 5 years may continue moving between boundary of of 4.5 – 5.5 USD/LBS because the demand of copper in semiconductor business will steady growth according to the variety demand of electronic and automotive product.

In additional, the cost of raw material mainly use USD for trading. The dollar will have significant role with cost of sale as well. Regarding to the table 4.3, the estimation trend of dollar is appreciated against Thai Baht with CAGR 3 %. We may interpret that the dollar costly effect 3 % with raw material cost of KCE.

**Table 4.7 Cost of goods calculation**

	2021 A	2022F	2023F	2024F	2025F	2026F
Cost of Good Sold	10,965.00	13,485.17	16,042.63	19,085.12	22,704.61	27,010.54
Copper Price / LBS	4.68	5.08	4.88	4.88	4.88	4.88
Copper Price Effect	4.50%	8.55%	5.00%	5.00%	5.00%	5.00%
Exrate Effect		3%	3%	3%	3%	3%

Source: Own calculation

#### 4.2.3 SG&A expenses

Assume that the expense will have 20% of total revenue portion and it will increase around 5% consecutively. Because KCE proceeded a lot of expansion investment of their capacity which will require intensive of operation of selling.

#### 4.2.4 Pro-Forma income statement

In overall, the total revenue will increase based on the demand of EU passenger car and the habit change of environmental concern from EU people stimulate the use of EV car. Cost of goods sold will increase slightly more than increase of revenue, but it caused from uncontrollable factor such a copper price and ex change rate which impact a lot to KCE cost of raw material. Total expense would increase as proportional as the increasing of human to capture expediting the market. Earnings before interest and tax trend to increase with CAGR 13%. The Net profit will increase as the same with EBIT since there is no change in the estimate of interest and tax. The earing per share improved a lot from 2.03 Baht per share to 4.30 per share with CAGR 13% in the end.

**Table 4.8 Pro-Forma income statement 2021-2026,**

KCE	2564 2021	2565F 2022F	2566F 2023F	2567F 2024F	2568F 2025F	2568F 2026F	CARG 2021-2026
TOTAL REVENUE	14,938.00	17,834	20,993	24,852	29,590	35,433	15%
COST OF SALES	10,965	13,485	16,043	19,085	22,705	27,011	16%
GROSS PROFIT	3,973	4,349	4,950	5,767	6,886	8,422	13%
Total Expense	12,621	14,981	17,634	20,876	24,856	29,764	15%
<b>EBIT</b>	2,708	2,854	3,359	3,976	4,734	5,669	13%
FINANCE COSTS	44	38.5	36.6	34.7	31.8	26.8	-8%
Profit Before Tax	2,656	2,815	3,322	3,942	4,703	5,642	13%
TAX	221.5	281.5	332.2	394.2	470.3	564.2	17%
<b>Net PROFIT</b>	2,434	2,534	2,990	3,548	4,232	5,078	13%
NUMBER OF SHARES (MN)	1,180	1,180	1,180	1,180	1,180	1,180	0%
<b>EARNINGS PER SHARE (BT)</b>	2.03	2.15	2.53	3.01	3.59	4.30	13%

Source: Own calculation



## **CHAPTER V**

### **VALUATION OF KCE**

#### **5.1 Relative Valuation**

In this section, the relative valuation of KCE Electronic derived from the comparison between the trailing and forward multiple bands. The relative valuation would estimate the target price in 2022, 2023 and 2024 respectively. Firstly, there are the calculation and comparison among the various of multiple method such a Price per earning, Price per book value and Enterprise value to earnings before interest and tax with depreciation and amortization. Each multiple will compare on peer's benchmark of the company in PCB industry both domestic and international. In the end, the estimate valuation will provide the recommendation on KCE stock simultaneously with risk sensitivity and scenario assessment.

##### **5.1.1 Historical Multiple Bands**

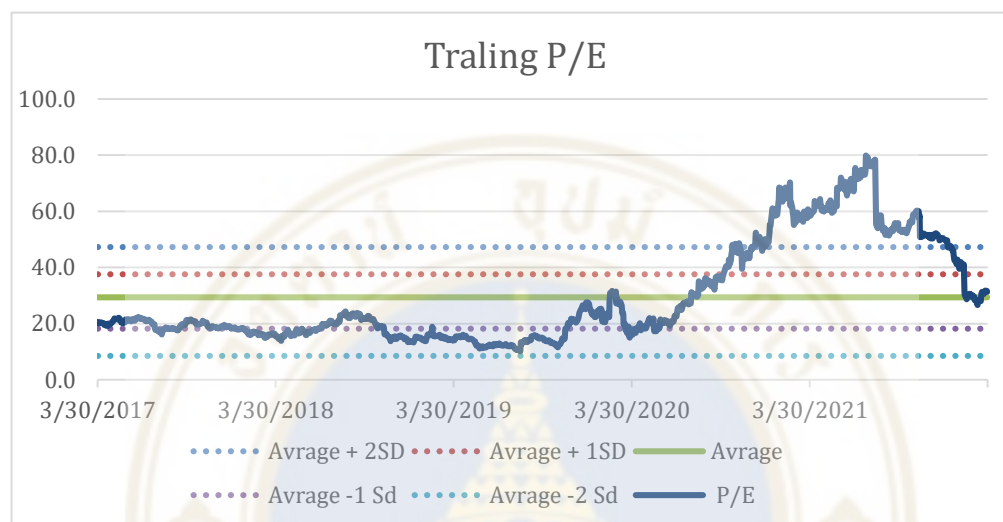
The most well know assumption on relative valuation to estimate the stock value now on. The analyzation of historical multiple banding purpose of investigate whether target stock is undervalued or overvalued or not. The value of KCE' stock will be based on 3 methods of trailing and forward of multiple bands including 1) P/E Bands 2) EV/EBITDA 3) Price to Book Value (P/BV).

##### **P/E Bands**

Trailing P/E as of March 2022, the trailing P/E is at 31.28X which above the average at 29.39X. The P/E is fair in relation to itself. Since July 2020 trailing P/E is above average line because KCE's stock price was increased from investor expected to growth a lot in PCBs market. The highest above +2 SD is during the initial Covid outbreak around 2019.

The lockdown restriction affects the lower of stock price and earning ability of company but finally in 2001 trailing P/E is lower from post-covid-19 recovery and higher margin (KCE Electronic, 2020).

Figure 5.1 Trailing P/E

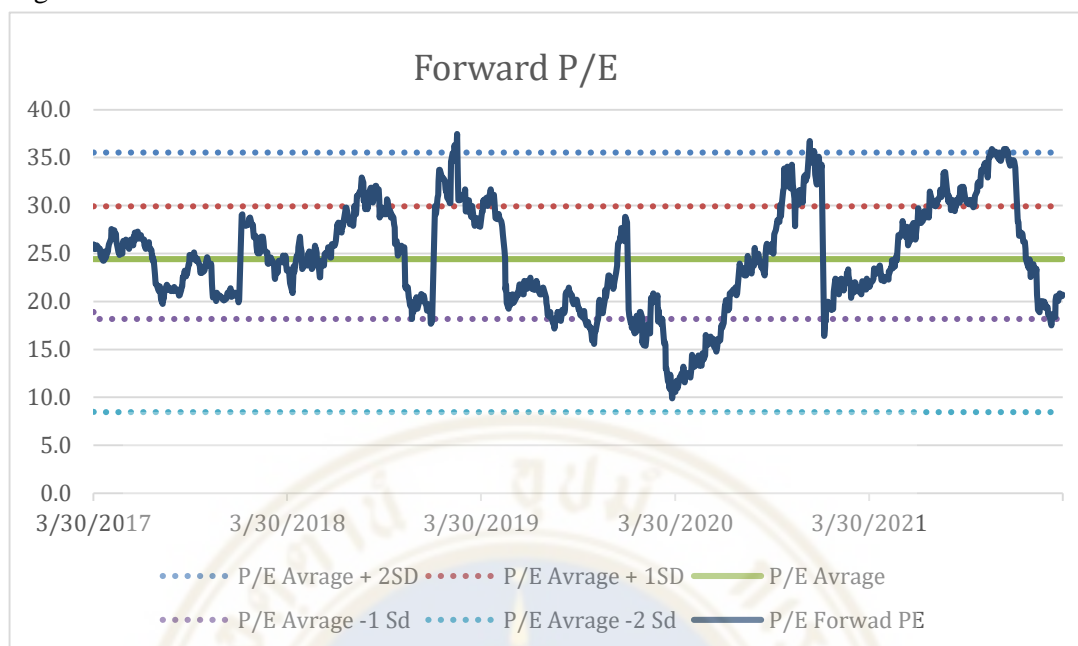


Source: Refinitive Eikon and own calculation

Forward P/E is estimated based on calculated based on projected earnings per share over 12 months. KCE forward P/E since was moving around 15x – 35x but in Q1/2020 forward P/E was significantly dropped to 10x affected by Covid-19 after that during July 2020 to present day in early of 2022 forward P/E was fluctuated moving around 20x – 35x. While in Q4/2022 forward P/E is gradually decreasing from lower stock price at THB 93.0 per stock on 9 Dec 2021 and THB 65.25 on 1 Apr 2022.



Figure 5.2 Forward P/E



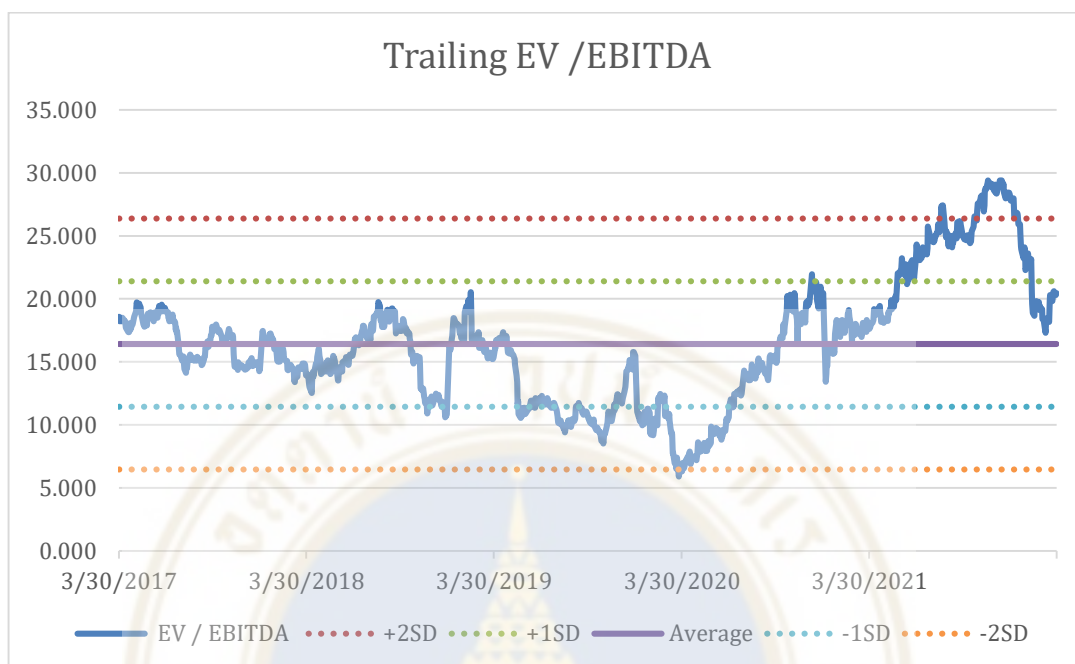
Source: Refinitive Eikon and own calculation

### EV/EBITDA

Trailing **EV/EBITDA** was around average line 2017 – 2019. However, in Q2/2020 trailing EV/EBITDA was lowest at 5x caused by Covid-19 after that by end of 2020 the market was recovering made trailing **EV/EBITDA** gradually increasing in relation to stock price up to 30x above +2SD line during Q3-Q4/2021 from investor over expectation on higher earnings (KCE Electronic, 2020).

Finally, trailing **EV/EBITDA** dropped under +1SD line but above average line which is considered as overvalued.

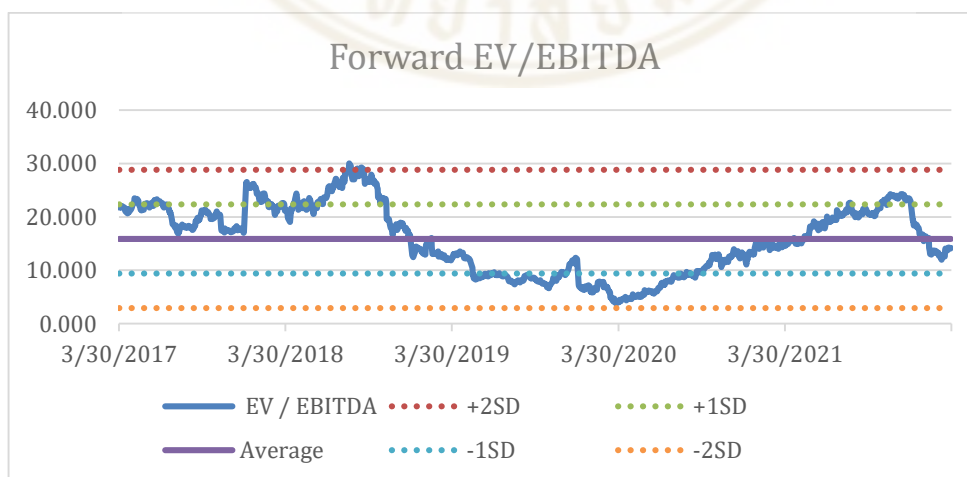
Figure 5.3 Trailing EV /EBITDA



Source: Refinitive Eikon and own calculation

Forward EV/EBITDA is undervalued opposite from Trailing EV/EBITDA. Forward EV/EBITDA is nearly going up to the fair value of the average.

Figure 5.4 Forward EV/EBITDA

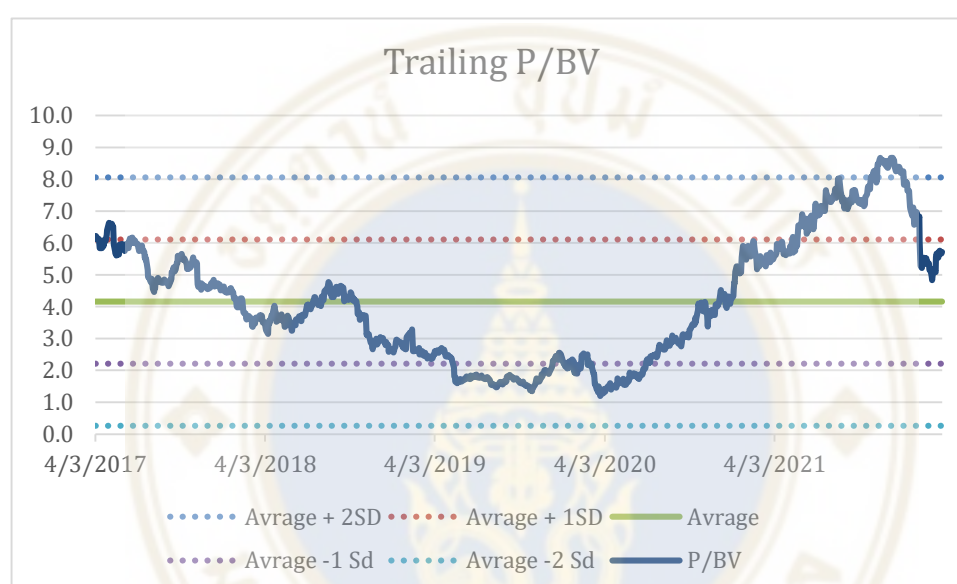


Source: Refinitive Eikon and own calculation

### Price to Book Value (P/BV)

Trailing **P/BV** is overvalued within the 1SD of itself. Since Q4/2018 trailing P/BV was under average line until Dec 2020 trailing P/BV was above average and reached to highest trailing P/BV at 8.5x on Dec 2021 as same as increasing of KCE's stock price at that time before heavily falling to 5.8x in Mar 2022 which is above average line and considered as overvalued (KCE Electronic, 2020).

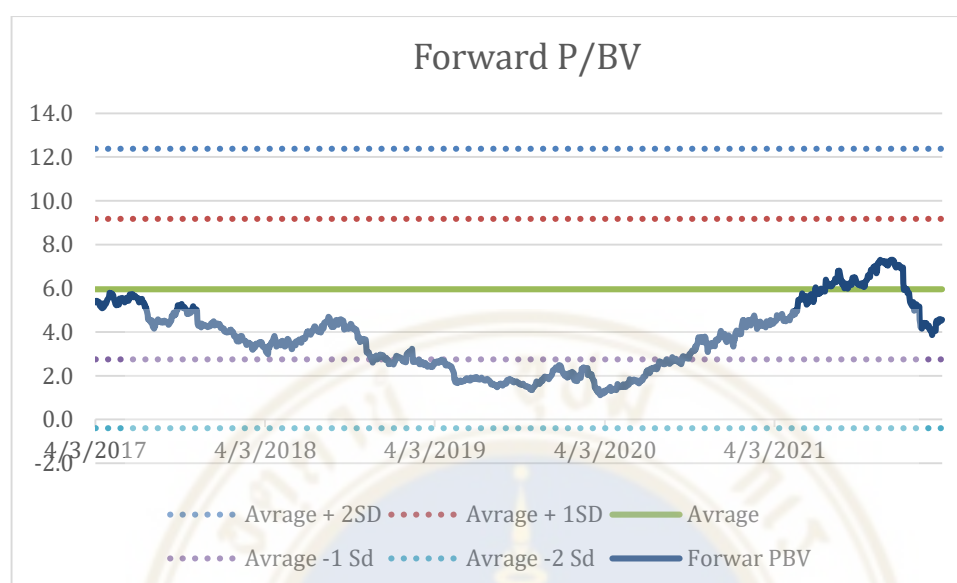
Figure 5.5 Trailing P/BV



Source: Refinitive Eikon and own calculation

Recently Forward P/BV is undervalued from stock price reduction since Dec 2021. The current price at THB 65.25 per stock on 1 Apr 2022 seems likely to approach the fair value of itself but tend to increase in the next quarter because higher demand in PBCs market and post-Covid-19 recovery situation worldwide.

Figure 5.6 Forward P/BV



Source: Refinitive Eikon and own calculation

### 5.1.2 Peer Group Multiples

Peer comparison from the company listed in SET on the electronic industry such as HANA, SVI, DELTA and include the international peers from Taiwanese such as Chin Poon and Unimicro which is an Automotive PCB maker in worldwide market.

According to Figure 5.7 found that KCE has higher all of multiple bands than Median of peer companies.

Figure 5.7 Average Multiples

Ticker	P/E Band			P/BV Band			EV/EBITDA		
	Trailing	Current	Forward	Trailing	Current	Forward	Trailing	Current	Forward
KCE	31.89	24.91	23.48	5.78	5.14	5.00	21.07	17.38	16.58
HANA	25.39	15.05	14.56	1.70	1.64	1.62	9.40	8.23	8.03
SVI	12.77	13.52	13.21	3.45	2.86	2.76	13.01	13.27	11.26
Delta	72.12	51.77	48.88	11.69	10.07	9.74	55.61	40.54	38.40
Chin Poon	39.16	23.23	22.28	0.87	0.85	0.84	10.23	5.97	5.64
Unimicro	27.91	18.41	17.00	6.05	5.09	4.79	16.11	9.75	9.09
High	72.12	51.77	48.88	11.69	10.07	9.74	55.61	40.54	38.40
Median	27.91	18.41	17.00	3.45	2.86	2.76	13.01	9.75	9.09
Average	35.47	24.40	23.19	4.75	4.10	3.95	20.87	15.55	14.48
Low	12.77	13.52	13.21	0.87	0.85	0.84	9.40	5.97	5.64

Source: Refinitive Eikon and own calculation

### 5.1.3 Price from Multiples

We estimate the price of KCE around 61.22 baht, which is an average between 2023 F and 2024 F because the internal process needs to be improved and will expect to perform by the next year such as complete of machine setting, the expansion capability of factory. By the way, external factory also determines the direction of value as well.

The current stock price of KCE as of 31 Mar 2022 was THB 65.50 per stock means KCE has been traded overvalued recently.

**Table 5.1 Average Multiples Target Price**

	2021A	2022F	2023F	2024F
EPS	2.05	2.60	3.17	3.62
EBITDA	3,733.00	4,526.00	5,392.00	7,271.00
BVPS	11.32	12.74	14.19	15.13
No of Share	1,180.00	1,180.00	1,180.00	1,180.00
EBITDA per Share	3.16	3.84	4.57	6.16
<b>Relative Valuation</b>				
Trailing PER	57.22	72.57	88.47	101.03
Trailing PBV	39.05	43.95	48.96	52.20
Trailing EV/EBITDA	41.16	49.90	59.45	80.17
<b>Forward</b>				
Forward PER	34.85	44.20	53.89	61.54
Forward PBV	31.24	35.16	39.16	52.20
Forward EV/EBITDA	28.76	34.87	41.54	56.01
<b>Average</b>				
Average	38.71	46.77	55.25	67.19
<b>Average Target Price 2023-2024</b>			61.22	

Source: Refinitive Eikon and own calculation

### 5.1.4 Sensitivity of Price

We use the Max, Median and Min to see how the price vary on each multiple. Average all multiple for each year. According to table 5.2 found that the highest price can be around THB 158.03, THB 124.92, THB 223.59 per stock while the lowest THB 24.50, THB 29.22 THB 35.43 in 2022 – 2024 respectively.

The lowest price can be occurred once Covid-19 continue longer than expected or other industries bankrupted worldwide.

**Table 5.2 Average Multiples (i)**

		P/E		P/BV		EV/EBITDA		Average
		Trailing	Forward	Trailing	Forward	Trailing	Forward	
Multiple	Max	72.12	48.88	11.69	9.74	55.61	38.40	
	Median	27.91	17.00	3.45	2.76	13.01	9.09	
	Min	12.77	13.21	0.87	0.84	9.40	5.64	
Price 2022	Max	187.51	127.09	148.93	124.09	213.30	147.29	158.03
	Median	72.57	44.20	43.95	35.16	49.90	34.87	46.77
	Min	33.20	34.35	11.08	10.70	36.05	21.63	24.50
Price 2023	Max	228.62	154.95	165.88	138.21	176.28	121.73	164.28
	Median	88.47	53.89	48.96	39.16	59.45	41.54	55.25
	Min	40.48	41.88	12.35	11.92	42.95	25.77	29.22
Price 2024	Max	261.07	176.95	176.87	147.37	342.66	236.62	223.59
	Median	101.03	61.54	52.20	41.76	80.17	56.01	65.45
	Min	46.23	47.82	13.16	12.71	57.92	34.75	35.43

Source: Refinitive Eikon and own calculation

### 5.1.5 Scenario of Price

Scenario of Price will be applied to estimate the worst-case scenario decreasing 10% on the opposite the best case will be applied increasing 10%

According to table 5.4 estimated that in the worst-case scenario KCE stock price will be equal to THB 28.6, THB 49.7, THB 58.9 in 2022 – 2024 respectively which may be caused by economies regression around the globe.

While table 5.5 estimated the best-case scenario that KCE stock price will be equal to THB 51.5, THB60.8 THB72.0 in 2022 – 2024 respectively from higher demand in PCBs automotive market.

**Table 5.3 Average Multiples(ii)**

	2021A	2022F	2023F	2024F
EPS	2.05	2.60	3.17	3.62
EBITDA	3,733.00	4,526.00	5,392.00	7,271.00
BVPS	11.32	12.74	14.19	15.13
No of Share	1,180.00	1,180.00	1,180.00	1,180.00
EBITDA per Share	3.16	3.84	4.57	6.16

Source: Refinitive Eikon and own calculation

**Decrease 10%****Table 5.4 Average Scenario of Price decreased 10%**

	2022F	2023F	2024F
EPS	2.34	2.85	3.26
BVPS	11.47	12.77	13.62
EBITDA per Share	3.45	4.11	5.55

Years	P/E		P/BV		EV/EBITDA		Average
	Trailing	Forward	Trailing	Forward	Trailing	Forward	
Multiple	27.9	17.0	3.5	2.8	13.0	9.1	
2022	65.3	39.8	8.1	6.5	30.4	21.3	28.6
2023	79.6	48.5	44.1	35.2	53.5	37.4	49.7
2024	90.9	55.4	47.0	37.6	72.1	50.4	58.9

Source: Refinitive Eikon and own calculation

**Increase 10%****Table 5.5 Average Scenario of Price decreased 10%**

	2022F	2023F	2024F
EPS	2.86	3.49	3.98
BVPS	14.01	15.61	16.64
EBITDA per Share	4.22	5.03	6.78

Years	P/E		P/BV		EV/EBITDA		Average
	Trailing	Forward	Trailing	Forward	Trailing	Forward	
Multiple	27.9	17.0	3.5	2.8	13.0	9.1	
2022	79.8	48.6	48.3	38.7	54.9	38.4	51.5
2023	97.3	59.3	53.9	43.1	65.4	45.7	60.8
2024	111.1	67.7	57.4	45.9	88.2	61.6	72.0

Source: Refinitive Eikon and own calculation

**5.1.6 Price Range of Multiple****Table 5.6 Price Range of Multiple**

Summary	Lowest Price	Highest Price
2022	24.50	158.03
2023	29.22	186.21
2024	35.43	223.59

Source: Refinitive Eikon and own calculation

In summary of Price Range per table 5.6 KCE stock price in 2022 lowest at THB 24.50 while highest price at THB 158.03. However, KCE current stock price on 31 Mar 2022 is equal to THB 65.50 per stock.

### 5.1.7 Valuation Recommendation

**Table 5.7 Recommendation Criteria**

Target Price	61.22
Current Price as of 31 Mar 22	65.60

Criteria	Recommendation	Result
Target Price > Current Price + 10%	Buy	72.16
Current -10% > Target price < Current Price+ 10%	Hold	59.04 > 61.22 < 72.16
Target Price < Current Price - 10%	Sell	59.04

Source: Refinitive Eikon and own calculation

There are three main criteria to help investors make a decision to buy, hold or sell the stock, from this relative valuation, the result of Buy is calculated +10% from current price which is equal to THB 72.16 or above per share while the Sell is calculated -10% from current price which is equal to THB 59.04 or lower per share, the price between THB 72.16 – 59.04 per share will be recommended to Hold.

For this relative valuation we apply average multiples projection during 2023 – 2024 (table 5.1) the target price is equal to THB 61.22 per share. Thus, we would recommend to HOLD it because KCE performance is recovering from Covid-19 impact. Moreover, there are ambiguity of external factors that impact the business such as Exchange Rate Risk, Transportation cost and Competitor approaching.



## **CHAPTER VI**

### **INVESTMENT RISKS AND DOWNSIDE POSSIBILITIES**

KCE is a PCBs producer and export worldwide so that the company needs to consider either internal and external factors elaborately to reduce and pretend the risks predictively so that there 5 factors to be considered to management investment and downside possibilities the risks effectively.

#### **6.1 Industry Risk**

- **Global PCB market**

Subsequently outbreak of Covid-19 pandemic in 2020, people are prohibited to live as a new normal life. The activities of people are reduced in global. Therefore, it impacted people to live privately for instance to work or study from home. So that the demand of all electronics devices and electrical equipment have been significantly increasing. People usually purchase those devices to serve their new normal life. Moreover, lifestyle changing has positive impact to the growth of PCB market size driven by demand for mobile devices such as smartphones, smartwatches, and other products including wireless technology to allow each device connected to each other easily such as smartphone connect to home application to turn on/off air conditioner, air purifier remotely. The global PCB market size is estimated approximately to reach from USD 70,920 mil. in 2020 to USD 86,170 mil. in 2026 at a CAGR of 3.3% during 2021 – 2026. Source: (Rocket-PCB, 2020),

- **Automotive PCB market**

Automotive electronics market, major factors that are fueling the growth of automotive PCB market size is raising integration of convenience, advanced safety, comfort, and infotainment system in cars such as Tesla Autopilot a safety self-driving with big screening in car for entertainment purposes and environment friendly with no carbon dioxide release from the car. The global automotive PCB market is valued at USD 5,988.2 mil. in 2021 and is expected to reach USD 10,190.0 mil. by the end of

2026, growing at a CAGR of 7.8% during 2021 – 2026. There is clearly that PCBs are in trend and consider as low industry risk. Source: (Marketsandmarkets, n.d.), (Marketwatch, 2022)

## **6.2 Business Risk**

### **Production and Technology Risk – Medium Risk**

- **Advanced technology required:**

Currently, electronic devices are smaller than previously since technology developed to be smarter and more functions so that PCBs itself need to be provided more complexity, complicated and new designed. KCE reduced the risk by imported new machineries to be able to support new technologies, implementing automatic machines with AI to reduce waste of production and shorten process of line production.

- **Skilled labor required:**

KCE Group has total employee approximately 4,982 people, 90% work in manufacturer. The manufacture was closed twice times in 2019 and 2020 due to factory work addicted to Covid-19 this situation reflected that skilled labor are very important. KCE Group attended to reduce the risk by providing training courses to create and maintain skilled labor, including organized PCBs school to provide knowledge and set up Coach & Mentoring to employees in each production process. Source: (KCE Electronic, 2020)

### **Customer Risk – Medium Risk**

- **Customer concentration**

KCE Group has a policy to reduce customer concentration by capturing revenue generating from five largest customers not higher than 50% of total revenue. KCE successfully to reduce customer concentration from 65% in 2010 to 50% in 2020.

- **Efficient AR**

Average Receivables Collection Days improved from 102 days in 2017 to 97 days in 2020 faster AR is better performance. Source: (KCE Electronic, 2020)

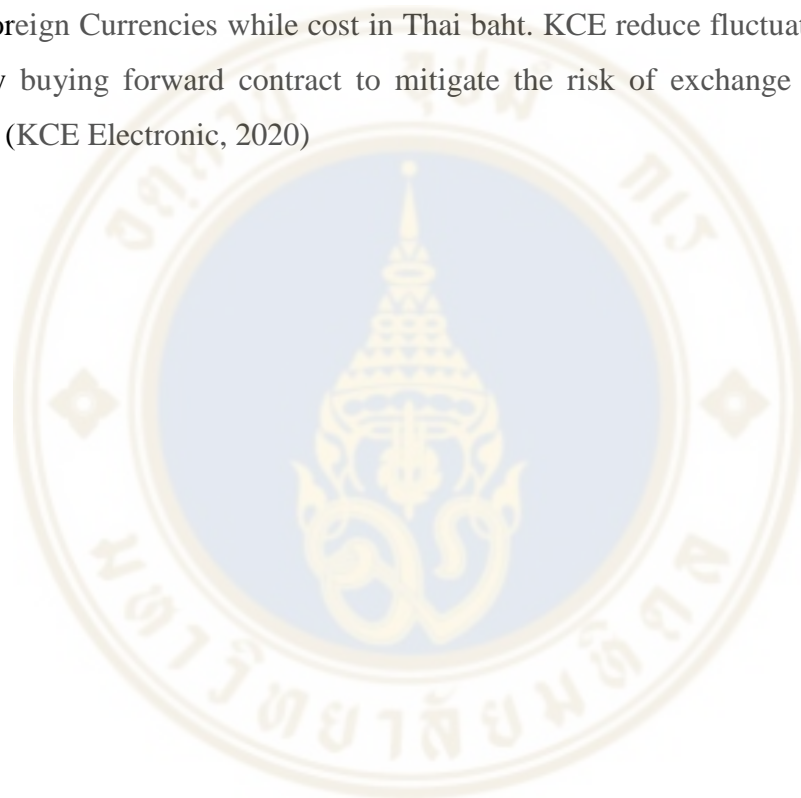
### **Supplier Risk – Medium Risk**

Raw materials are mostly supplied from Thai Laminate Manufacturer Co., Ltd. (TLM) a subsidiary company of KCE and was founded as a backward integration

to support the group companies so that KCE can protect the risk of raw material shortage. Moreover in 2012, KCE entered a joint venture 49% to establish KCE Taiwan Co., Ltd. as an oversea supplier representative for raw material and machinery to KCE. KCE normally sign the contract with other suppliers to supply raw material to guarantee prices and qualities on yearly tenor to ensure that KCE will receive raw material on demand and sufficient to fully produce of capacity. Source: (KCE Electronic, 2020)

### **FX Risk – Medium Risk**

Foreign Currencies risk is considered as significant risk since main revenue from Foreign Currencies while cost in Thai baht. KCE reduce fluctuation of exchange rates by buying forward contract to mitigate the risk of exchange rate fluctuation. Source: (KCE Electronic, 2020)



## CHAPTER VII

### CONCLUSION

This Thematic Paper is particularly intention to evaluate KCE Electronics Public Company Limited or KCE ticker in The Stock Exchange of Thailand (SET). This paper uses Relative Valuation method to study and analyze the pricing historical data, financial statement projection then compared to trailing&forward multiple brands including 1) P/E Bands 2) EV/EBITDA 3) Price to Book Value (P/BV) to estimate the target price of KCE

The average target price during 2023 – 2024 is equal to THB 61.22 per share compared to the recent price as of 31 Mar 2022 is equal to THB 65.60 per share means that the current price is trading overvalued. Thus, we would recommend to HOLD KCE stock.

The “triggers for re-assessment”, since PBCs of KCE are mainly used for automotive vehicles and the coming of EV is a new key changing wave of automotive industry so that we might need more time to evaluate how PCBs would growth together with EV as are many factors to be considered such as customer’s behavior in EV, life cycle of EV, engine, battery, safety, maintenance cost or oil price reduction to same level price of charging fee.

Recently, many countries are under Covid-19 situation with economy regression. Thus, once economy recovered from Covid-19. People might need to focus on household consuming than purchasing a new EV.

There are “limitations of this valuation” that we could not obtain to assess in this relative valuation. Firstly, forward peers multiple because the valuation is estimated based on historical data thus limited for future projection analysis. Secondly, there are no perfect suitable peer companies to compare to each other to determine the target stock price. Lastly, the products itself are in high competition advanced technology market. Thus, once competitors’ technology developed faster than KCE. Thus, there is no guarantee that KCE will be able to do R&D against them. Moreover, this relative valuation excluded company’s strategy, management policy.

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