

# CHAPTER 4

## 1. Data analysis and interpretation of findings

In this chapter, the researcher will try to analyse the macroeconomic indicators mentioned in chapter 2 impact on currency exchange rates between Thai baht and US dollars over the period from 2010 to 2017.

### 1.1. The balance of trade impact on Thai baht and US dollar

As discussed in chapter 2 in order to analyse the currency valence between the Thai baht and the US dollar. The numeric figure of export and import between USA and Thailand took from secondary sources (census.gov), figures are in US dollars in billion

**Table: Numeric analysis**

**(US trade in goods with Thailand -summative figure)**

Year	Goods import from The USA to Thailand	Goods export to The USA from Thailand	Balance of trade
2010	8,976.0	22,693.6	-13,717.2
2011	10,929.9	24,831.6	-13,901.7
2012	10,887.8	26,066.8	-15,179.0
2013	11,797.0	26,169.6	-14372.6
2014	11,815.0	27,229.3	-15,414.3
2015	11,228.8	28,622.2	-17,393.4
2016	10,467.4	29,489.2	-19,021.7

2017	10,991.6	31,151.9	-20,160.3
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From the above table, it explains that Thailand export had increased every year by respective percent shown in the above table and USA import with every year had increased by respective percent as shown above. The balance of trade between Thailand and the USA had increased as well from the findings. On the contrary, the exchange rate fluctuation between US dollar and Thai baht showed an upward trend which was not good for Thai baht as it was in the range of 29-33 baht for one US dollar which had increased to 34-35 range for one US dollar. The maximum exchange rate between the US dollar and the Thai baht over the respective period was 36 baht for one dollar and the minimum exchange rate between both currencies was 29 baht for one dollar in 2013. The mean exchange rate between both currencies was 29 baht for one dollar in 2013. The mean exchange rate between both currencies was 32 above.

**Figure: Trend analysis of Thai baht versus US dollar**

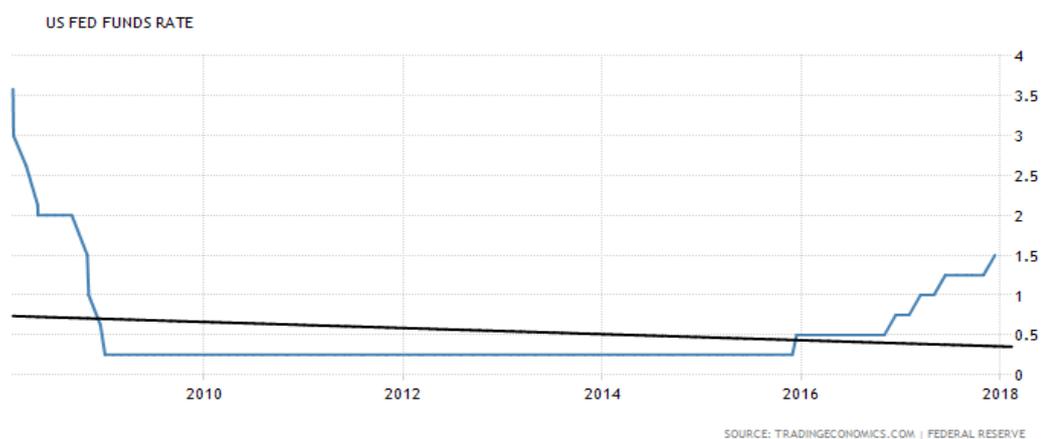


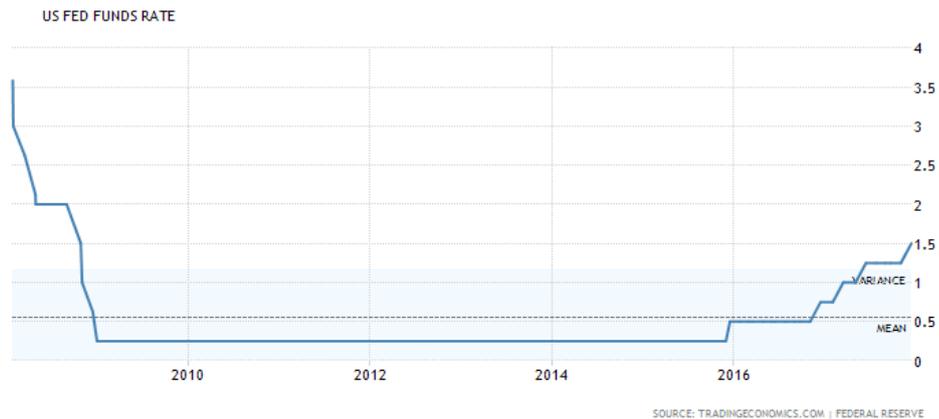


The above export figures suggest that every year USA imported more and compared to the last year from Thailand which means that US dollar should depreciate as because the demand of Thai baht in order to goods from Thailand and Thailand exported more compared from the last year, resulting Thai baht should appreciate but from the above exchange rates trend figures it shows that from 2010 to 2017, US dollar appreciated and Thai baht depreciated. The results explain that even Thailand exported more over the years from 2010 to 2017. The above trend of Thai baht and US dollar disapproved the balance of payment theory as technically, it should have appreciated but it had gone depreciated. On the flip side, the USA imports are more than exported. Hence it should have depreciated but it had gone appreciated from a trade perspective. The above analysis concluded the valence of Thai baht had averseness and valence of the US dollar had attractiveness. In other words, the balance of trade had created

negative valence on Thai baht even Thailand exported more to the USA and positive valence on US dollar even USA imported more. This would not have created a profitable venture for Thai exporter and would have created profitable for US importer.

## 1.2. The interest rate impact on Thai baht and US dollar





### 1.2.1. Numeric analysis:

As from the above chart indicates that overall the US fed funds rate from the period 2010 to late 2016 was stagnated as 0.25 percent and then gradually increased and reached to range of between 0.5 percent to 1 percent in 2017 and on the other side, Thailand interbank rate as mentioned above from 1.25 percent to 3.5 in late 2011. By the start of 2012, it started to decline gradually from 3.25 percent to 1.5 percent in 2015. Lastly, it remained the same at 1.5 percent until 2017.

The above charts comparison of interest rates differential of USA fed funds rate and Thailand interbank rates suggested that every year the differential interest rates of Thailand is more than the USA fed funds rate. In order to calculate an interest rates differential is the difference in interest rate between the Thai Baht and the US dollar, the method is mentioned below

$$\text{Interest rate differential} = i^* - i$$

Where,

$i^*$  = Thai interbank overnight lending rate

$i$  = US federal funds rate

The theory of interest rates suggests that if any country interest rates are more or higher than other country interest rates comparison. The higher rate

interest country would likely to attract investment from overseas and from the domestic and regarding that case it will increase the demand of that higher interest country and this will ultimately appreciate the currency and vice versa. Conversely, the interest rates of Thailand interbank overnight lending rate outweigh the theory as because from the period of 2010 to 2017 Thai baht depreciated even though the interest rates were higher than US fed funds rate and on the other side the US fed funds rate were lower but US dollar appreciated over the period.

### *1.2.2. Valence model analysis*

Hence, the valence of Thai baht was negative as the outcomes turned out to be negative for those who had invested during that period in Thai baht and even for exporter of Thailand as because in order to export the funds required for them levied higher interest rates to repay the debt. Contrary, US funds fed rate was lower and currency appreciated (chapter 2) over that period so it was a win-win situation for importer as they had to pay less for buying goods from Thailand and even at the same the deposits in a bank account for US investor would have provided higher returns. As a result, the valence of the US dollar in that particular period was positive as the performances or the outcomes suggest attractiveness.

## **1.3. The impact of manufacturing production index on Thai baht and US dollar**



US MANUFACTURING PRODUCTION



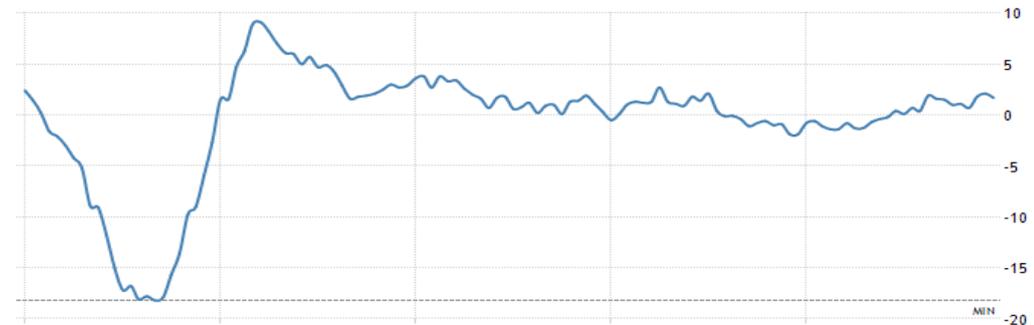
SOURCE: TRADINGECONOMICS.COM | FEDERAL RESERVE

US MANUFACTURING PRODUCTION



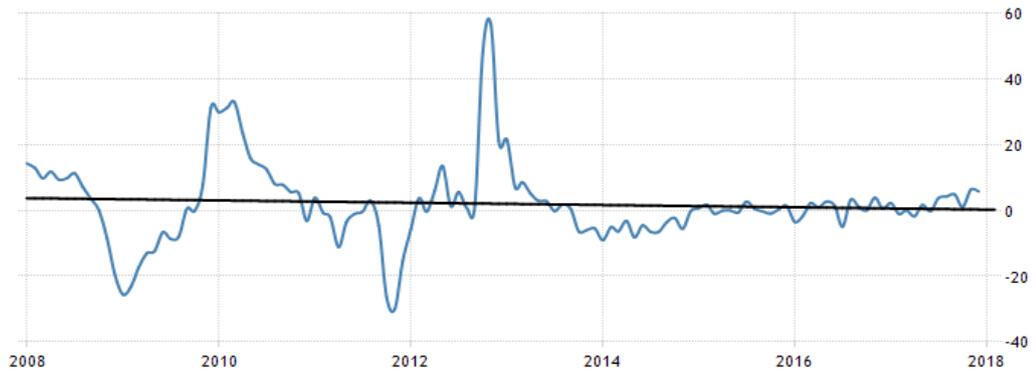
SOURCE: TRADINGECONOMICS.COM | FEDERAL RESERVE

US MANUFACTURING PRODUCTION



SOURCE: TRADINGECONOMICS.COM | FEDERAL RESERVE

THAILAND INDUSTRIAL PRODUCTION



SOURCE: TRADINGECONOMICS.COM | OFFICE OF INDUSTRIAL ECONOMICS, THAILAND

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The USA manufacturing production index trend suggested an increasing trend with a mean value of -1 percent and maximum value range in between 5 percent to 10 percent. Contrary, Thailand industrial production trend suggested slightly declining industrial production over the years from the period 2010 to 2017 as maximum was 60 percent and the minimum were -30 percent. Hence it proved from the findings that export from Thailand to the USA was more during that period and interest rates were higher than the USA but still Thai baht depreciated over the period so it can be concluded from above facts that Thailand was having severe currency crisis as because its currency value was declining in exchange to one US dollar.

The main reasons for declining industrial production could be as follows:

- Thai baht depreciated against dollar value.
- Cost of manufacturing units turned out to be expensive.
- Interest rates were higher so borrowing funds could be expensive in order to produce goods.

### *1.3.1. Valence model analysis:*

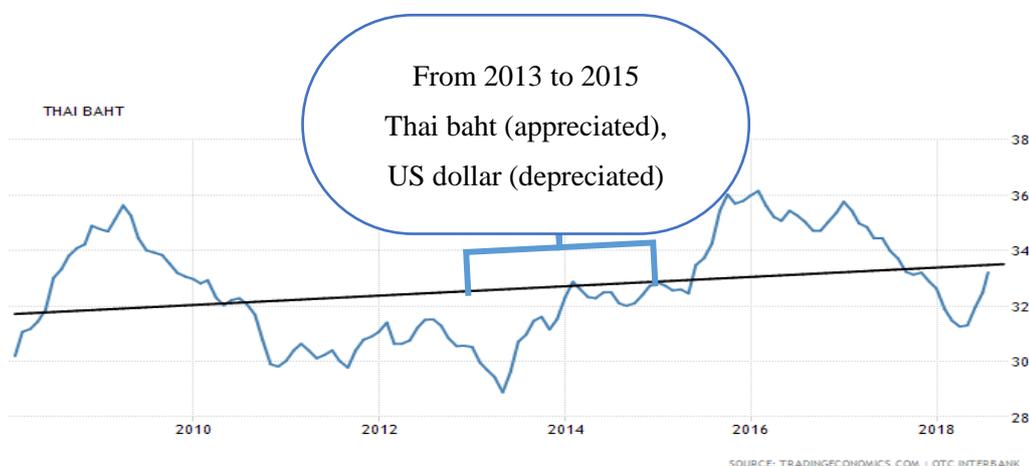
According to this model, as noticed Thailand manufacturing production had faced discouragement because of depreciated Thai baht value, expensive business operation, and higher interest rates so these factors are more likely to responsible for reduced manufacturing production index as Thailand didn't have

enough cash flow to produce or increase manufacturing goods and whatever they were producing were expensive and on the flip side USA had slightly increased manufacturing production index as because of appreciated dollar value and lower interest rates even though the USA imported more than Thailand , US dollar overall didn't depreciate. This again proves that Thai baht outcomes and performance during the period of 2010 to 2017 had averseness (negative valence) and the US dollar had attractiveness (positive valence).

#### 1.4. The international reserves impact on Thai baht and US dollar

**Table: International reserves (In billion)**

Year	Thailand international reserves	Percent change	USA international reserves	Percent change
2010	172.028	–	488.928	–
2011	174.891	+1.66%	↑ 537.267	+9.88% ↑
2012	181.481	+3.76%	↑ 574.268	+6.88% ↑
2013	167.230	-7.79%	↓ 448.509	-21.89% ↓
2014	157.163	-6.07%	↓ 434.416	-3.14% ↓
2015	156.460	-0.44%	↓ 383.728	-11.66% ↓
2016	171.772	+9.78%	↑ 405.942	+5.78% ↑
2017	202.538	+17.91%	↑ 451.285	+11.16% ↑



The overall trend of Thai baht in an exchange with US dollar is depreciating but if we closely look from the period of 2013 to 2015 as Thai was

strongest so far in last seven years or so as it had reached 29 baht to one dollar and most of the time it was under 32 baht to one dollar. This could be the reason of Thai baht got appreciated because of the decline in the international reserves of Thailand and US dollar got depreciated.

Another interesting point in the above charts comparison during 2013 to 2015, the US international reserves got declined likewise in Thailand as well and when international reserves declined it explained that Thailand sold dollars to buy more Thai baht and USA bought Thai baht in exchange for dollar which means demand of the Thai baht got increased and demand of the US dollar got decreased. That's why Thailand had declined their international reserves in order to appreciate the Thai baht value corresponding USD. The US international reserves also declined during the period of 2013 to 2015 but the exchange rate with Thai baht didn't reflect the correspondingly as it should be appreciated due to the realization of the US international reserves.

Lately, Thailand again got increased in international reserves and then also Thai baht value also depreciated while USD depreciated first then appreciated.

To conclude this, it would be advisable to say that during the era of 2013 to 2015 had the golden run for Thai currency in exchange rate comparison with USD. Hence it proves that only in these periods the Thai baht had positive valence over US dollar. It had attractiveness over USD.

## 1.5. Conclusions

This research aims are to study the economic factors effecting change of the Thai's Bath and US dollar exchange rate. Various factors included in the study were inflation rate, inter-bank interest rate, current account, and Export value of Thai goods.

In this chapter, the research questions are clearly examined and answered accordingly and the trade relation between USA and Thailand along with the explanations of a free trade agreement between both the countries mentioned.

The macroeconomic factors selected for this study in order to analyse the impact on both the Thai baht and the US dollar is well explained. Moreover, Vroom's Valence model also justified by comparing the macroeconomic indicators with trend analysis of exchange rate between Thai baht and USD.