

## Does Sovereign Debt Contribute to Long-term Growth in Thailand?

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### Abstract

The aim of this research is to explore the impact of sovereign debt and debt services on the long-term economic growth of Thailand including other considered macroeconomic factors: gross capital formation, consumer price index, inflation, and trade by using time series data. The study uses annual data from 1990 to 2010. The study evaluates the relationship between external debts, debt services, and other considered variables. Results show that external debt has an impact on the economic growth of Thailand. Consumer price indexes have positively impacted economic growth, while gross capital formations and trade balances have a positive impact. The result of this study suggests that even the borrowing level does not impact economic growth, its obligation or debt service still threaten the growth of the economy.

**Keyword:** external debt, debt service

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## Introduction

The simple concept of taking external debt is that money outside of economic system can lead to economic growth without any lost liquidity in the system. If return turns to be capital, country could have higher level of facilities such as infrastructures which could provide more possibility of growth in the future. However, using debts also have drawbacks aspects in that user have to trade them off. There are a lot of effects being created from debt on macroeconomic such as uncertainty, losing credit, political pressure, even debt overhang problems. Moreover, the world's history has many lessons of using debt especially from many memorable crises included in 1980s; Latin America, Mexico and Argentina, 1990s; South-East Asian crisis, or even Euro crisis in modern century which highlighted damages of world economy. Summers, (1986) concluded that excessive external debt burdens would threaten financial stability by adverse consequences to the real economies, political officers would be under pressure from results in inflation is needed to jump up inevitable. So, the problem background of this research is that, Thailand had not enough internal saving account to provide massive source of investment without less money liquidity. The aims of this dissertation is to analyzes relationship between long-term affecting macroeconomic factors of external debt with economic growth in Thailand by using export, external debt level, debt services, gross capital formations and consumer price indices as input factors, while comprehensive economic growth or real gross domestic product (GDP) as a dependent variable by using Ordinary Least Square modle (OLS) to evaluate the relationship.

## External Debt and Thai Economy

External debt has been an affective factor of Thailand economy since history of country because insufficient in internal saving and the philosophy of policies planning which has been influenced of capitalism from western country in order for them to emerge the market in developing countries. Moreover, World Bank has significantly increased its encouragement to developing countries in terms of infrastructure, economics structure under the purpose of supporting the movement of funding from developed country which overall view would perform world economic expansion. As a result, Thailand GDP has continually grown. This chapter clarifies the problem of saving gap, how external debt classified, and Thailand external debt time line.

### a. Saving Gap & External Debt of Thailand

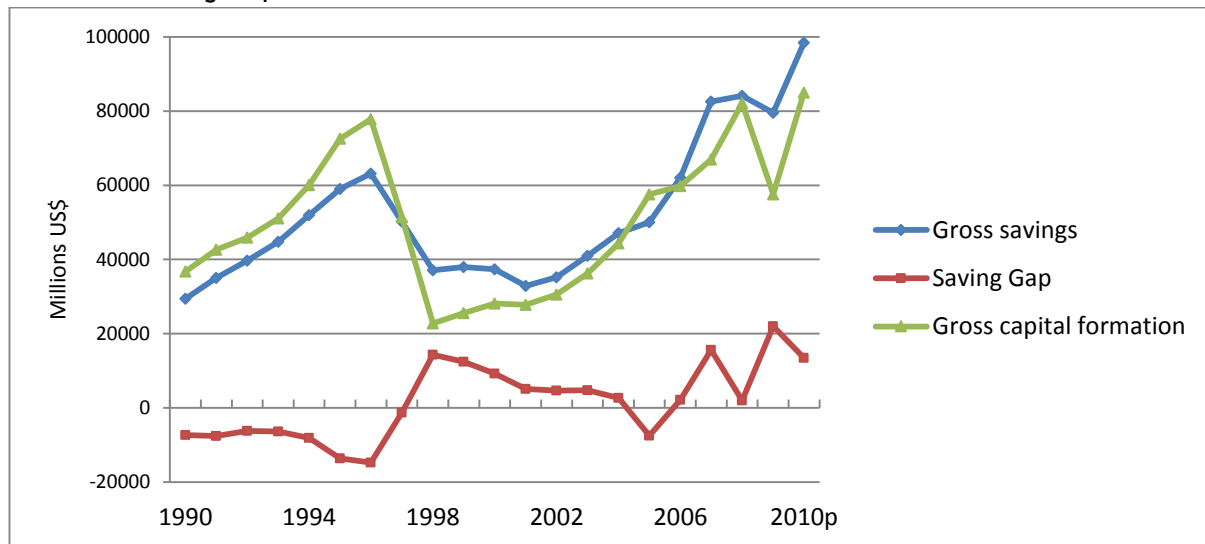


Figure 2.1 show Gross saving, Gross capital information and Saving Gap; the different between Gross saving, Gross capital information during 1990-2010, Source: Bank Of Thailand.

Saving gap in Thailand during 1990-2010 in figure 2.1 shows the relationship between gross capital formations and required gross saving to be sources for internal lending. From 1980s, the fourth and fifth National Economic and Social Development Plan were introduced to the societies, its main contexts were to develop fundamental-needed structures to support possibility of an industry country. So, investing in infrastructures was the first focus of the government which resulted in the number of capital requirement was highly increased. During that time external debt was doubled from 8,716.00 to 18,321.00. Moreover, free market and financial liberalization caused major demanding in investment. The government in 1990 strongly gained investors in the other words private sectors confident to invest in the country. Therefore, private sectors also needed high number of capitals to support the high growth which was over 8% during 1990-1995. These resulted in, that time gross capital formations had higher than gross saving. Saving gap was negative during that period especially in 1996; the saving gap was the highest at -14684.4 Million US Dollar. These show that capitals were offset from external. According to the external debt data, the number of external debt from 1980 to 1990 has increased from 8,716.00 to 29,308.00 Million US Dollar and it rocketed up to the maximum point in 1997 at 109,276 Million US Dollar.



Figure 2.2 shows Gross Domestic Product and external debt growth of Thailand during 1991-2010, Source: Bank of Thailand.

However, the number of capital inflow during the beginning of 1990s was misuse by investing in speculating properties instead of sustainable projects. Capitals from private sectors which came from external debt were maturity mismatch; capitals were borrowed in term of short-term debt and they were transformed to be long term loans for internal, these were happened due to that, firstly, there was no exchange rate risk or variation in it because exchange rate was pegged with US dollar at 25 ThaiBath/USD, this significantly encouraged free-flow across border of funding. Secondly, external interest rate was much lower than that of internal interest rate because of highly inflation of Thai economy which led to two interested groups: internal dealers, and foreigner investors to move money to the country for seeking higher return. Thirdly, regulators were not fully comprehensive information about the capital inflow with their purposes causing uncontrolled money inflow. The effect was tension on internal and external of exchange rate; with the fixed exchange rate government can control only internal currency market, while external market it is normally the save value due to the demand and supply s

ystem, but this case they both were different value due to high capital inflows. Furthermore, capitals were misused in asset speculations. So, the growth number was illusory from the truth. Unfortunately, financial scandal in 1997 exploded the market's confidence. Moreover, Thai currency was further hit by hedge fund, and all of international reserves have been volatilised by fighting with hedge fund. Government had to change currency system from fixed to float rate system. Suddenly, Thai currency from 25.34 Thai Bath/USD in 1996 jumped to 31.37 Bath/USD in 1997 and 41.37 Bath/USD in 1998. So exchange rate crisis was emerged.

Numbers of external debt which relied on exchange rate was now double. Private sectors have gone to trouble at this point from unweight balance sheet. Causing GDP angled to -8% in 1998, inflation rocketed up to 10%. Thailand had only one option by opting to enter the International Monetary Fund (IMF)'s debt packages in the end of 1997 with 17,000 Million Dollar for funding. The gross capital formation dropped from 80,000 to 20,000 Million US Dollar in 2 years; the saving gap was first positive since 1980s. After that, by positive saving gap reasons, government decided to make debt from internal because lower interest rate and to reduce obligations from external debt. Moreover, because of heavily devalue in exchange rate export amount was sharply increased after the crisis and continually expanded until now, resulting in money flow into the country; GDP was quickly recovered from -8% to 4.8% in 1999 and gross saving was accumulated to a high level. The number of project slowly gained, so saving gap fluctuated positive until 2010. Even through, there was the Hamburger crisis in 2008 in the United States of America, but this time Thailand was not much affected because of strongly well diversified export income and high number of gross saving account.

## Empirical Literature Reviews

Since, the modern history 1980s, external debt and economic growth topics have been broadly considered the major cause of economic crises around the world. Along that, its supporting studies are increasing in huge numbers and they are available in wide range covering all dimensions of economies. External debt at some level may contribute growth and provide benefits in some countries, but it may be humped factors when conditions are change. Moreover, it may dramatically affect the structure of the economy. So, literatures reviews in this section are divided into three main groups: economic growth can be incited by external debt, economic growth is humped by external debt and lastly debt overhang literature reviews.

### **Economic growth can be incited by external debt.**

The view of supporting literatures point out that external debt provides growth for borrowers. From the concept of Conventional Approach (Atthakorn, 1982). The direct effect is that external debt facilitates continuously capital accumulation so country capitals can be accumulated with the growth of economy, while indirect effect is that after capitals being accumulated, income is higher resulting to higher saving that re-effect the direct effect. So, by the direct and indirect affect, literatures reviews show supporting evidence. Semmler and Wohrmann (2004) has study the credit risk and sustainable debt for the Euro countries. It was wondered that sustainable debt has been the key-issues in rating of sovereign debtors because the rating of debt directly affects to the expectation of return of debtors which used to lead to the problems in South-Ease Asia in 1997. So, their assumption was that the external value of currency depends on external debts of a country. Creditworthiness of the country should be



estimated. The study models the dynamic of growth with an additional equation for the evolution of debt, and compute sustainable debt and countries' creditworthiness. After that, time series data have sourced in to the model, results show that the Euro-area has large external asset and will have a stable currency in the long-run due to large amount of assets which can be used to guarantee its debt. Currie (2005) study: the article of relationships between external debt and economic development conclude that economic development which was defined as sustainable growth has been measured by the level of the stable level of income per capita, or the level of corporate or institutional accumulated earning per capita in the country level. The appropriate measurements and monitors are the ratio of debt as they are shown as a portion for comparing: The percentage Total external debt to GDP, and Total debt service to GDP ratios. The result shows that debt would not fall and harm the future economy if government properly increases on taxation policies to anticipate future debt service that the future balance sheet will be offset by taxation.

### **Economic growth is humped by external debt**

It is true that the taking debt always have to confront with its obligation. Debt service is a major threaten factor for the future period. From Unconventional Approach (Atthakorn, 1982) support that external debt wreck the incentive of people to save that causes people to decide spending on consumption instead of saving. Murad (2011), study on macroeconomic effects of external debt and debt services on economic growth in Pakistan during 1970-2010. The result of estimation is that percentage different of pervious year of debt service ratio to GDP, gross capital formation and inflation was positive relation with percentage different of pervious year of real GDP, while total debt service to export and external debt stock to GDP shown negative relation. Ezeabasili (2011) study on Nigeria's External Debt and Economic Growth: An Error Correction Approach. Results of estimation have shown the negative short-run relationship between economic growth and the present level of external debt, while government expenditure, the trade balances, consumption expenditure and pass GDP was the support significantly the growth of GDP.

### **Debt overhang literature reviews**

Macro-Debt overhang creates wild range of effects such as crisis of heavily indebted countries (HICs). Furthermore, it heavily damages the structure of country's economies and threatens long-run economic growth. As the World Bank definition (cite in Deshpande, (1995)): *"For several of the highly indebted countries, low commodity prices, high real rates of interest, sluggish growth in the industrial countries, and in some cases, their own macroeconomic and trade policies mean that present levels of debt cannot be reconciled with present levels of*

*growth” And “The presence of an existing ‘inherited debt’ sufficiently large that creditors do not expect with confidence to be fully repaid” by Krugman, (1988)*

Therefore, literature reviews show the causes, effects and process of it in various circumstances. Deshpande, (1995) The debt overhang and the disincentive to invest, study on the external debt and economic growth of marked 13 debt-overhang countries. The result has wondered that external debt push economic to growth only up to the critical point, and then it reverses its effect. To start with, the study doubted that during 1980-1987 HICs investment has highly declined by 2.6% per year. Moreover, it converted the debt crisis into a growth crisis shortly. GDP per capita was sliced by half in a decade.

### **Model Specification and Processing of study**

The selected model in this study has formed under the idea that if economic growth of Thailand is affected from external debt or debt services. Behind of the idea is the hypothesis that external debt can be used in the way of increasing the capital level in order to shift the country's productive level which will result in the possibility of generating more income. However, using of the external debt causes the obligations called debt services at the same time, and other effects such as political pressure ether from debtors or internal. So, external debt may not provide only benefit as in the prospective plan. Significant evidences of using external debt have been illustrated in previous literatures in term of macroeconomic key indicators. Therefore, the model in this study has been set that output growth to be dependent parameters, while external debt ratio to GDP, external debt service ratio to GDP, external debt service ratio to export, gross capital formation to GDP ratio, rate of inflation, and trade balance. The reasons of adding these parameters in to the model are that external debt and debt service to GDP ratio are observed as the causes of the study's problem, the external debt service to exports is expected to show that if the country has a problem of crowding out effect, gross capital formation to GDP ratio is to shows the transforming of funding to be capitals, inflation rate is to show the level of economic stability, and trade balance to observe the possibility of generating foreign currency income.

To capture all cogent debt burden indicators and its expectation, the model used has been major adopted from Elbadawi (1996) and Murad (2011) because their model has been well assumption and fit with all of the macroeconomic dimensions for this study. The study has been done in long-term period with 20 years. The study pass the debt burden indicators through the production function directly, like similar study, so, the regression equation is specified that



$$GDP_t = f(ED_t, TDS_t, DSR_t, GCF_t, CPI_t, TB_t)$$

Where

- $GDP_t$  Gross domestic product at year t
- $ED_t$  Stock of external debt to GDP ratio at year t
- $TDS_t$  Total debt service to GDP ratio at year t
- $DSR_t$  Debt service ratio to export earning year t
- $GCF_t$  Gross capital formation to GDP ratio year t
- $CPI_t$  Consumer price index or Inflation year t
- $TB_t$  Trade Balance )export -import (year t

### b. Ordinary Least Square (OLS)

The relationships of external debt in two cases are estimated with OLS. The model can be unbiased estimated, even though, those two model are nonstationary at level. According to Engle and Granger (1987) time series data of more than two parameters might have an exactly relationship called cointegration relationship, and the relationship can be seen even data are nonstationary. The result from estimation show:

$$\ln(GDP_t) = 0.029181 - 0.305440\ln(TDS_t) + 0.23199(DSR_t) + 0.450189\ln(GCF_t) + 0.537326\ln(CPI_t) + 0.667946\ln(TB)$$

(0.015227)                      (-3.417677)\*\*\*                      (3.130310)\*\*\*  
(4.290235)\*\*\*                      (2.347697)\*\*\*                      (3.397030)\*\*\*

R Square	=0.993896	Adjusted R Squared	=0.990011
Durbin-Watson	=2.029064	F statistic	=255.8547***

parenthesis below coefficients are t-statistic

\*90 %significant level

\*\*95 %significant level

\*\*\*99 %significant level



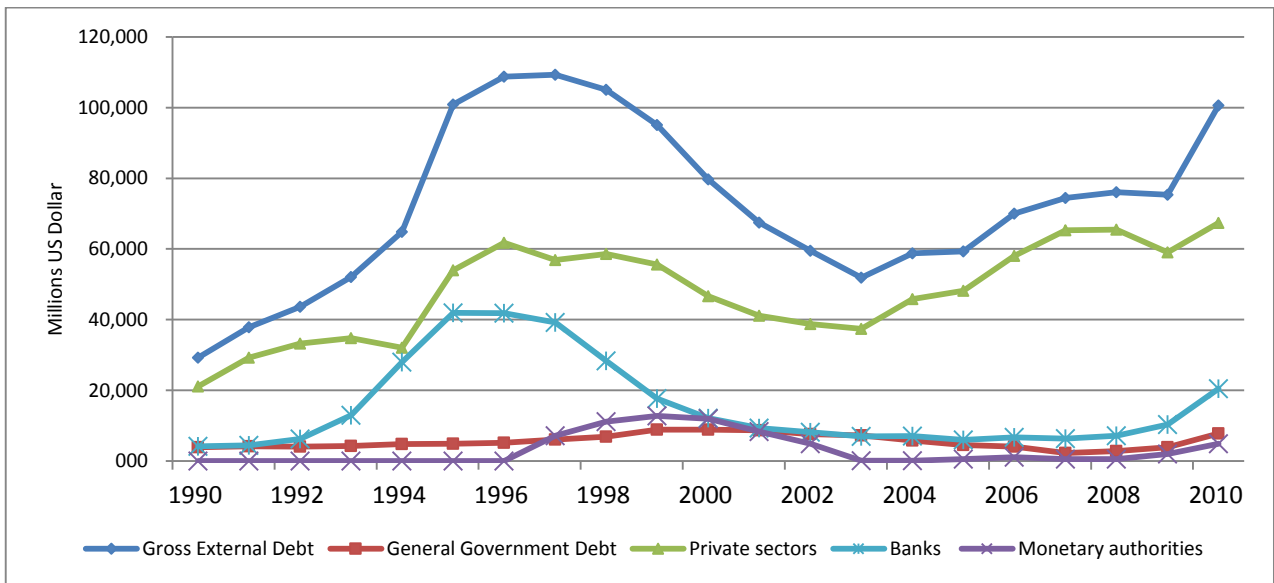
Durbin-Watson shows the value of 2.029064 that null hypothesis of autocorrelation problems can be rejected, so it imply that no autocorrelation problems with the model. F-statistic also higher than critical values at 99 percent confident level; null hypothesis can be rejected, so model has at least one non-zero coefficient. The null hypothesis of Individual test for all independent variables can be rejected. Therefore, they are statistically different from zero with 99 percent confident level. After model is passed the test of hypothesis, dependent variable in long-term can be explained by independent variable that.

Firstly, total debt service ratio to GDP has negatively long-run relationship with real GDP. If other variables are fixed, one percent change in total debt service to GDP reversely cause GDP to change by 0.30544 percent. Secondly, debt service to export earnings and real GDP has long-run direct relationship. If other variables are fixed, a percentage change in debt service to export will have same trend of change 0.23199 percent of real GDP. Thirdly, in long term country gross capital formation to GDP ratio positively causes GDP to change. If other variables are fixed, real GDP will directly change 0.45018 percent if gross capital formation change by one percent. Fourthly, consumer price indexes or inflation have same way relationship with real GDP in long run. If other variables are fixed, one percent change in consumer price index will change directly by 0.537326 percent. Fifth, term of trade (export – import) has directly long-run relationship with real GDP with coefficient 0.667946. If other variables are fixed, one percentage change in term of trade, real GDP will change directly by 0.667946 percent.

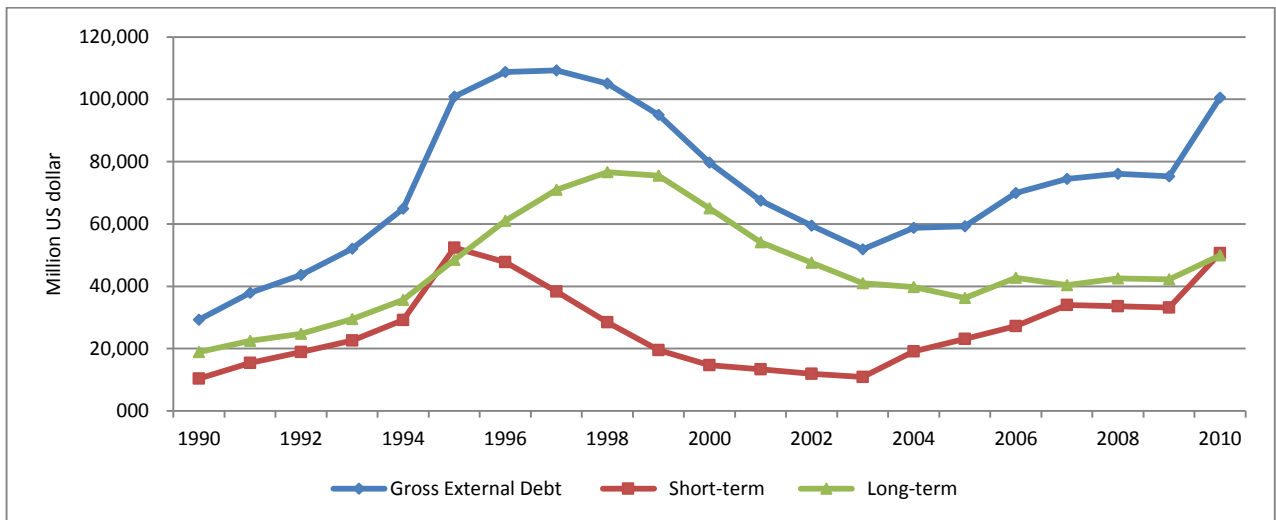
## Conclusion

This study has focused on the point that how economic growth is possibly affected by external debt of Thailand. In this study the result illustrate that total debt service to GDP, debt service to export earnings, country gross capital formation to GDP ratio and terms of trade have relation with economic growth with 99 percent significant level for all of variables. Economic growth in Thailand has no effect from the level of external debt which is consistent with early studies that Thailand has no effect of debt overhang problems. The impact of debt service on economic growth is negative. Further suggestion from the result is that the higher export earning supports the higher possibility to bear the load of debt service. That leads the solution that the negatively impact of external debt and its obligation can be solved with exports earning. The positive impact of gross capital formation to GDP on economic growth has the result same as literatures. Furthermore, the model suggests that higher GDP growth rate attracts higher investment and contribute in mobilizing of investing. Consumer price index or inflation can be said as an economic growth simulating factor. Finally, the impact of trade balance on economic growth is positive significant. It is said that trade balance is a factor of economic growth and it also confirms that exports earning is a key solution of external debt problem for Thailand.

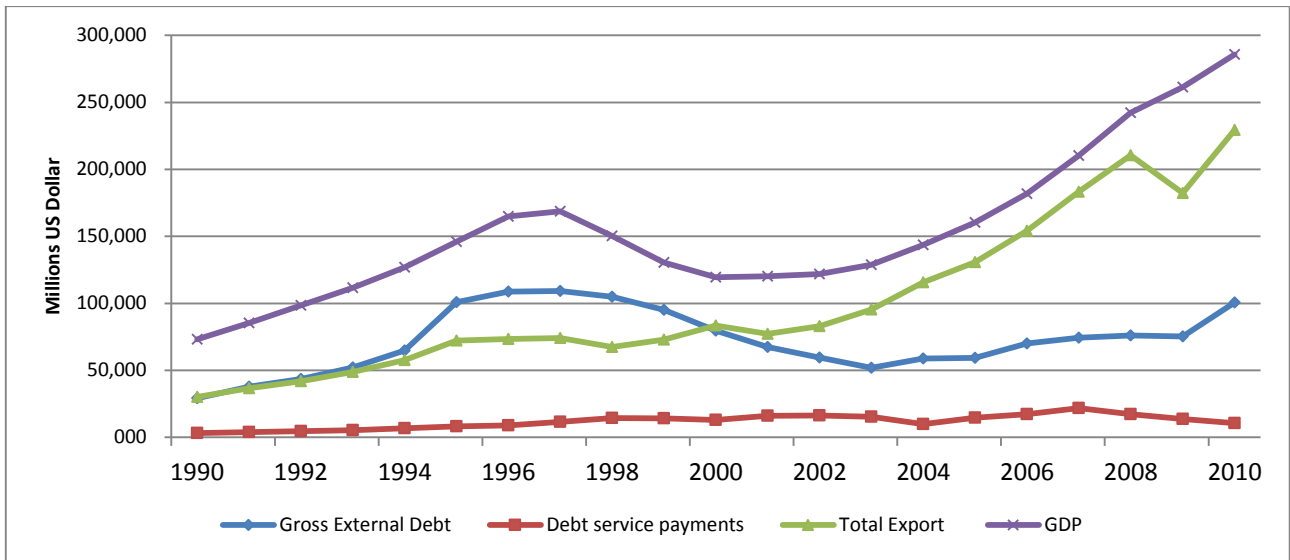
Appendix



Figures A1 show gross external debt, government debt, private sector external debt, bank external debt, and monetary authorities external debt from 1990 to 2010 at current US\$ price, Source :Bank Of Thailand .



Figures A2 show gross external debt, short-term external debt and long-term external debt from 1990-2012 at current US\$ price, Source :Bank of Thailand.



Figures A3 show GDP, total exports compare with external debt, and debt service payment during 1990-2010 at current US\$ price. Source: Bank of Thailand



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