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**EXTERNAL DEBTS AND TRADE BALANCE:  
AN INTERNATIONAL EVIDENCE**

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## **Abstract**

### Objective:

The paper investigates the relationship between the external debts and the trade balance on a data sample of 190 economies over 1990-2020. In particular, the trade surplus provides the financial resource to repay the external debts. Thus, a greater trade surplus ensures a greater ability to sustain a huger external debts.

### Methodology:

The research methodology is based on the qualitative analysis combined with the quantitative analysis. The qualitative method summarizes the literature review about the relationship between the external debts and the trade balance. Then, the quantitative method carries out the graphical analysis between the external debts and the trade balance.

### Findings:

The qualitative analysis records that there exists mixed results on the external debts and trade balance. And the quantitative analysis illustrates that the external debts are positively correlated with the trade balance. Thus, the evidence confirms that a greater trade surplus can sustain a huger external debts.

### Implications:

The empirical results uncover that the trade balance is crucial for a sustained quantity of external debts. Thus, an appropriated policy for the external debts is to stimulate the trade balance, such as with the international trade policy and associated exchange rate policy.

**Keywords:** External Debts; Trade Balance; Quantitative Analysis.

## INTRODUCTION

The external debts play a central role on the international financial integration of an economy, both advanced and developing ones. Recent reports released in September 2022 by World Bank states the debts, including both domestic and external ones, are one of three main key drivers of economies in the east Asia & pacific. This raises the concern about an analysis of the external debts with a coverage of world economies sample.

The current paper investigates the dependence pattern of external debts on the trade balances. On theory, we employ an intertemporal approach to current account, postulated by Obstfeld and Rogoff (1995). Accordingly, the current value of external debts is equal to the present value of future trade balances. On other words, the future trade balances are crucial to sustain the repayment of current external debts.

Using a data sample of 190 economies over the 1990-2020 period, we find that a huger external debts per GDP is associated with more trade surplus. Thus, the evidence confirms the validity of intertemporal approach to current account that the trade surplus is positively related to the external debts. Moreover, compared with the external debts per GDP predicted by the cross-section regression model, the long-run external debts per GDP of United States and Vietnam are higher while that of China is lower.

The current paper makes a contribution on the literature on the external debts and related cross-border capital flows, with a survey by Gourinchas and Rey (2014). The external debts are ensured by the domestic macroeconomic fundamentals, such as the economic growth, aggregate savings and by the foreign reserves originating from trade surplus. Within this literature, our evidence adds an international evidence that supports the implication by the intertemporal approach to current account (Obstfeld and Rogoff, 1995).

The paper is structured as follows. After the first section on Introduction, the second section on Analysis Framework shows the literature review and associated

data sample. Then, the third section on Empirical Evidence analyzes the external debts. And the last section on Conclusion summarizes the results and discusses the public policy.

## **ANALYSIS FRAMEWORK**

### **Theory**

The Intertemporal Approach to Current Account (IACA) (Obstfeld and Rogoff, 1995) is a prominent theory on the relationship between the external debts and trade balance. Formally, the current debts per GDP is equal to the net present value of future trade balance. Accordingly, the IACA states that an economy must run a surplus trade balance (or positive current account) to repay the debts. As an implication, an economy having a continuous deficit trade balance over a long time period, it needs to issue new debts to repay the old debts. But this situation is unsustainable since the economy can fall into a kind of Ponzi game, in which the value of debts increases continuously and explode at a finite time point.

The intertemporal approach to current account is consistent with both theoretical results and empirical evidence on the external debts. The debts create a channel for domestic firms to finance the future investment project, especially when there exists a tight credit constraint on the borrowing from banks (Woodford, 1990). By accumulating the public debts, one firm can save its revenue to smooth the investment demand in the future.

Another theory states that the accumulation of external debts as foreign reserves when there is a structural transformation within an economy (Song, Storesletten and Zilibotti, 2011). In particular, the movement of labor and capital from low-productivity firms to high-productivity firms results in a huger savings, which are translated into the foreign reserves and external debts accumulation.

In the international monetary system, the external debts play a crucial role on financing domestic investment. Farhi and Maggiori (2017) proves that the issuance of external debts creates a privilege benefit for the issuer. When an economy holds a monopoly position on issuing the external debts as safe assets in

the global capital markets, it can receive the foreign capital from the foreign economies who wish accumulate the safe assets.

The structure of debts within an economy is also important for the current account adjustment (Coeurdacier, Guibaud and Jin, 2015). In an overlapping generations model of multi-country, the borrowing by young people can be financed by the savings by the middle-age people. When the population expands along with a tighter credit constraint, the huge savings by the middle-age people can exceed the borrowing by young people. Then, the excess savings would be translated into the accumulation of external debts as a financing resource for the borrowing by the foreign economies.

The external debts are also important for the net total capital inflows since this type of assets account for most of current account dynamics in the world economy (Hung, 2022). As the net total capital inflows, more net debts inflows are also associated with an economy with a higher economic growth rate. But for the public debts, which together with foreign reserves, account for the net public capital inflows, there can exist an allocation puzzle: an economy with a greater economic growth rate tends to accumulate less net public capital inflows (Gourinchas and Jeanne, 2013; Alfaro, Kalemli-Ozcan and Volosovych, 2014).

In summary, the external debts are important for the current account dynamics, especially the public capital flows. Moreover, their value is financed by the trade balances, since the latter provides the income denominated on foreign currency.

## **Data**

The data is a cross-section sample of 190 economies over the time period of 1990-2020. Each variable is averaged over time so that the analysis can focus on the long-run equilibrium. Moreover, with a quite long time period of over 30 years, the average value can absorb the short-run fluctuation of each variable over time.

The dependent variable is the trade balance, denoted by  $(atb2y)$ . The variable is the value of exports subtracting the imports, i.e, net exports, per gross domestic

product (GDP) on percentage. The scale by the domestic output can rule out the country size effect on measuring the variable. The data is taken from the world development indicators by World Bank (2022).

The independent variable is the external debts, denoted by (*xtdebt2y*). This variable is the value of debts in foreign currency on the percentage of GDP. The data is from the world fiscal space, also constructed by World Bank (2022).

Table 1: Descriptive Statistics

Variables	Obs	Mean	Std.Dev	Min	Max
Trade Balance ( <i>atb2y</i> )	190	-6.37	13.30	-49.82	37.17
External Debts ( <i>Lnxtdebt2y</i> )	163	4.14	0.79	2.17	6.92

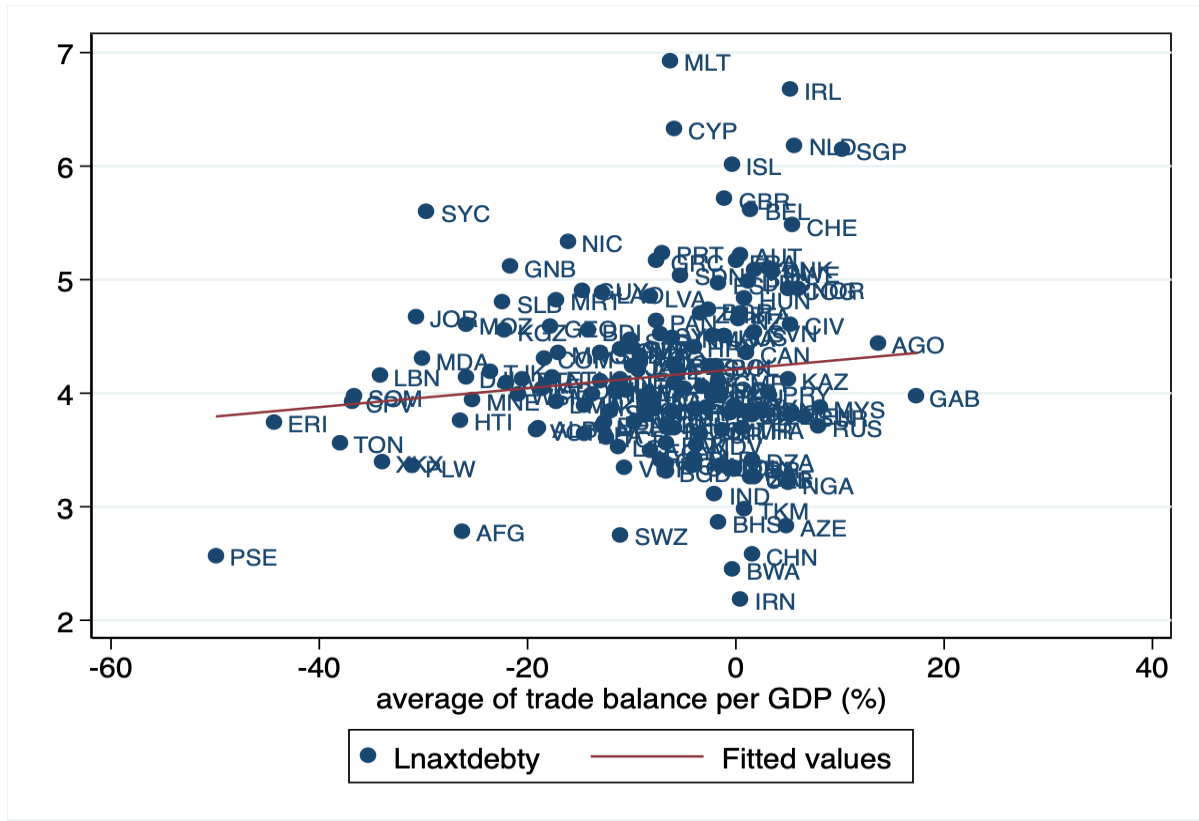
Table (1) shows the descriptive statistics of the data sample. The trade balance per GDP has a mean of (-6.37%) with a large standard deviation of 13.30%. Compared with this variable, the external debts per GDP has a greater mean of 4.14% but with a much lower standard deviation of 0.79%. The difference between the minimum value and maximum one is also larger for the trade balance per GDP than for the external debts. In brief, the data sample offers a quite large variation to explore the relationship between the trade balance and external debts.

**EMPIRICAL EVIDENCE**

According to the intertemporal approach to current account, a huger external debts per GDP requires a greater trade balance. Thus, we expect a positive correlation between the external debts and trade balance.

Figure (1) captures the external debts and trade balance. There exists a clearly upward sloping curve, showing that the external debts are positively dependent on the trade balance. In particular, more trade balance per GDP is associated with higher external debts supply. Therefore, the evidence confirms the validity of theory based on the intertemporal approach to current account.

Figure 1 : External Debts and Trade Balance



Source : World Bank (2022).

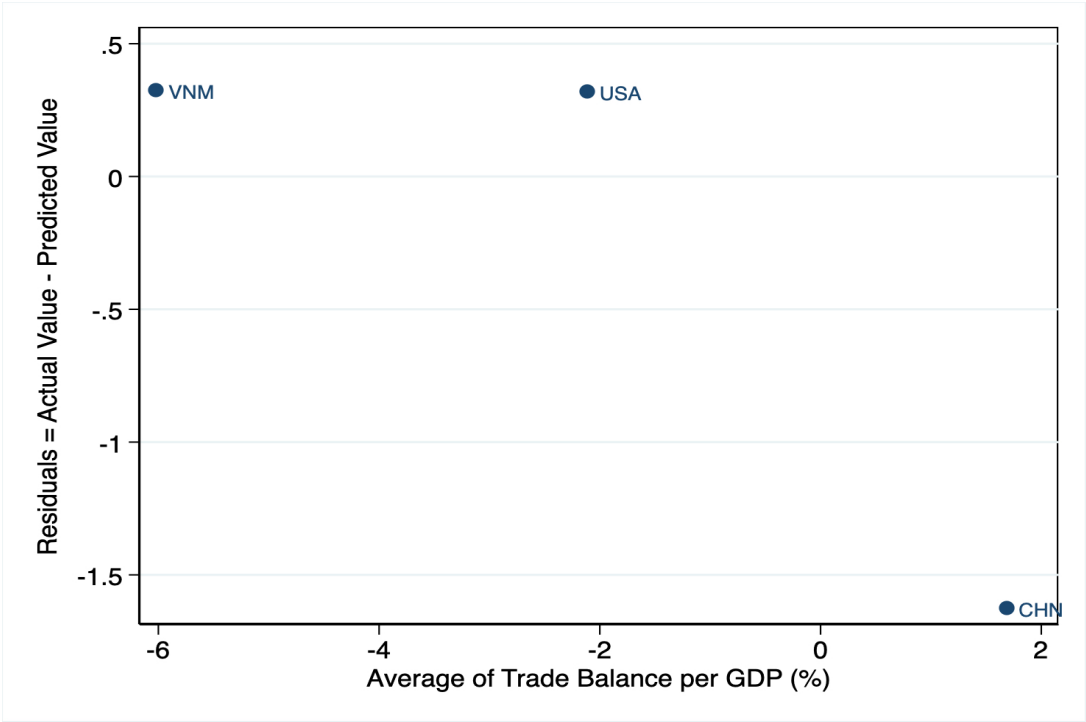
Figure 2 depicts the case study of external debts for some typical economies. We choose three economies, including United States, China and Vietnam. The United States economy is the world leading advance economy while the China economy is an emerging large open economy. And the Vietnam economy is a typical developing economy with high economic growth rate. These economies also have a quite large value of trade balance per GDP.

We compare the realized value of external debts with the predicted one based on the regression line. On the vertical axis, the positive residuals mean that the actual value being higher than the predicted value by the regression model. For the United States economy, the realized external debts are higher than its predicted value. Thus, this economy has higher external debts than the corresponding value to its trade balance. The Vietnam economy follows a similar pattern when the



realized external debts are higher than its predicted value. For the China economy, the realized external debts are lower than their predicted values. Thus, this economy has lower external debts than the corresponding value to their trade balance.

Figure 2 : Case Study



Source : World Bank (2022).

**CONCLUSION**

The paper investigates the relationship between the external debts and the trade balance on a data sample of 190 economies over 1990-2020. According to the intertemporal approach to current account, the current external debts is equal to the net present value of future trade surplus. Then, the quantitative analysis illustrates that the external debts are positively correlated with the trade balance. Thus, the evidence confirms that a greater trade surplus can sustain a huger external debts.

The empirical results uncover that the trade balance is crucial for a sustained quantity of external debts. Thus, an appropriated policy for the external debts is to

stimulate the trade balance, such as with the international trade policy and associated exchange rate policy. When an economy gains a higher trade surplus, it can ensure the solvency of external debts, then contributing on the macroeconomic stability of domestic economy.

For the future research avenue, the paper can be extended to take into account some other key factors of external debts. Recent theoretical and empirical evidence records that the exchange rate fluctuation and domestic production capacity are positive for a sustained external debts. Thus, accounting for these variables can shed a new light on the relationship between the external debts and trade balance across economies.

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