An empirical comparison of external indebtedness in East Asia and Southern Europe: reasons for Clearing Integrated Monetary Areas

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We seek to study the evolution of the external indebtedness of Southern European Greece, Italy, Portugal and Spain, which were highly indebted and used to run current account deficits until the Great Crisis of 2008, and the indebtedness of those East Asian countries that ran current account deficits before the crisis of 1997, namely Indonesia, Korea, Malaysia, the Philippines and Thailand. We pore over foreign debt and balance-of-payments data to understand any potential statistical relationship between (i) external indebtedness and (ii) current account balances plus changes in foreign exchange reserves. Our introductory econometric approach to the issue suggests that indebtedness is often and on average about twice the level attributable to current account balances and reserve changes. In Southern Europe, debt should have increased, but it increased more than expected. In East Asia, particularly since 1997, debt should have decreased, but it followed and upward trend. We attribute this phenomenon to the incomplete structure of the international payment system and, as a general solution, we call for the implementation of a regional real-time gross settlement system.

Keywords: External debt, Current account, Growth models, Comparative Political Economy, East Asia, Southern Europe

Jel classification: F33; F34; F41

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I. Introduction

The accumulation of foreign debt and its prospective ramifications on a nation's economic performance have long been a focal point of discourse within the field of international economics (Eichengreen & Hausmann 2010; Epstein 2018; Eichengreen 2019), in particular following the external debt crisis in Southeast Asia during the 1990s and the Eurozone crisis throughout the 2010s (Frieden & Walter 2017). There is a renewed emphasis on scrutinizing the external borrowing process and its plausible determinants (Schoder 2014) by analyzing the different components of the balance of payments (BoPs), namely current, financial, and capital accounts.

Following the International Monetary Fund methodology, current account balance should always be identical to the sum of financial account and capital account balances. However, the reality of facts is such that the identity is never respected. Large amounts of errors and omissions are registered in balance-of-payments statistics to fill the enormous imbalances at current, financial, and capital account levels. Things get even more intricated if we refer to the aggregate current account balance or the aggregate financial and capital account balance at world level. Global imbalances are the rule and, as observed by Krugman and Obstfeld (2017), they seem to be due, not to mere errors

and omissions, but rather to a structural problem. Indeed, statistical analysis shows aggregate current account values negative until 2004 and positive afterwards –two discrepancies respectively known as "mysteries" of the "missing surplus" and "missing deficit". The presence of huge imbalances at national and global levels, either due to errors and omissions or to a more profound problem, makes it difficult to calculate the current account balance in terms of capital and financial balances as stated by the beforementioned identity. This alone seems to be a reason to think that traditional balance-of-payment methodology is only partially useful to dig into the relation between the current account, on the one hand, and the financial and capital accounts, on the other hand.

Because of BoPs imbalances, if we resort to the traditional BoPs analysis, any attempt at calculating the value of the external debt through current, financial, and capital account values may prove to be failing since the very start. What is sure, as highlighted later on in this paper, is the fact that gross external debt values are usually similar to country financial stocks, which are recollected in the BoPs financial account. It follows that, in the absence of imbalances, a rough estimate of the external debt may be arrived at as the difference between the current and capital account positions accumulated over the years. In the absence of capital flows –because of capital controls, for instance–, external debt values would roughly coincide with the current account balances accumulated over the considered period. Unfortunately, BoPs imbalances impede any robust study into this line of reasoning. As statistical analysis proves, in fact, numbers do not match theory.[1]

If one attempts to compare external debt values with BoPs account values, it must be observed that financial account values have a far greater impact on external debt formation than capital account entries. External debt values are generally derived from financial account items rather than from capital account balances essentially because of two

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[1] In this regard, the authors have carried out a statistical analysis of balance-of-payment and external debt data as published by Milesi-Ferretti and Lane (2022) and the World Bank (2023) (see Section 2 for a detailed data explanation). The authors estimated external debt values resorting to the IMF's BoPs methodology and compared them to official the external debt values. Estimates and official values did not match. Future research in this regard remains nonetheless pivotal for a full comprehension of external debt and balance of payment relationship.

reasons. First, countries' debt positions may change due to capital movements linked to financial flows, in which case they are correctly registered in the financial account and cannot be counted twice in debt calculation. Second, debt positions are not affected by other kinds of capital movements such as capital flights, for instance. Capital flights escape double-entry bookkeeping and, consequently, no role should be ascribed to them in external debt formation. The previous observations do not imply that capital movements are void of relevance in today's world. They certainly convey attention to be paid on the relationship between external debt changes and the series of current account balances over the years –mostly determined by exports and imports. This paper seeks to contribute accordingly.

A relatively recent research line (see, *e.g.*, Cencini and Schmitt 1991; Carrera, Cárdenas, and Martínez 2023; Carrera and Cencini 2024) suggests that, in the absence of BoPs imbalances at national and global levels, current account balances and reserve variations should almost entirely explain countries' external indebtedness. However, delving into the issue, the same literature also observes that external indebtedness is usually higher than –actually, twice the value of– the one explainable by current account balances and official reserve variations. Taking up this line of thought, our current work seeks to study the relationship between the external debt, on the one hand, and the current account balances together with changes in total exchange reserve of foreign currencies and gold, on the other hand. Current account balances are surely a great component of changes in the external debt, but reserves should not be forgotten, given that increases in official reserves have led to increases in the external debt. Sticking to the traditional BoPs methodology, we can argue that there is no apparent reason to think of a general trend or ratio between external debt changes and current account balances (plus reserve change). In Section 2 and Section 3, we seek to prove this observation or to find statistical evidence against it. If the debt-current account ratio had a precise value range, it would follow that the relationship between external indebtedness and current account balances is stronger than usually believed.

The external debt, conceived as the debt of a country (its banking system) toward the rest of the world, is the amount of debt accumulated over time toward the countries (the banking systems) of the rest of the world. This debt does not include the debt among residents (households, firms, public administrations) of the domestic economy.

A first approach to compare the debt and current account balances (plus reserve changes) can be made by considering the sum of current account deficits plus the variation in total reserves over the period object of study. Following the recent methodology (*e.g.*, Cencini and Schmitt 1991; Carrera, Cárdenas, and Martínez 2023; Carrera and Cencini 2024), in the case of Greece, for instance, with chronic current account deficits since the 1970s, an approximate value of sovereign debt could be calculated as the sum of current account deficits (absolute value) plus the variation in the total reserves of foreign currencies and gold –we delve into a methodological discussion in the other Sections. We would expect to fully explain the actual debt by current account deficits and the change in reserves. That is, the accumulation of current account deficits and the increase in total reserves should lead to equal increases in sovereign debt. If this held true in the real world, the ratio between the actual accumulated debt and deficit periods, taking also into account the variation in reserves, should turn out to be close to the unit.

Carrera, Cárdenas and Martínez (2023) analyze external debt in the Mediterranean countries of Greece, Italy, Portugal and Spain and the four "frugal" countries of Austria, Denmark, the Netherlands and Sweden over periods of current account deficits. They also study other developed economies, including the United States. Results show over-indebtedness in deficit periods in all countries, that is, a debt increase much higher than the one explainable by the accumulation of current account deficits and the increase in reserves.[2] The study leads to think that the external indebtedness may be due to structural reasons rather than to mere behavioral or cultural reasons. Remarkably, the debt accumulated by these countries is usually between 1.5 and 2.5 times the value explainable by deficits and reserve changes, with a statistically significant coefficient and a high R^2 value.

Another way to analyze the evolution of a country's sovereign debt is through the study of current account deficits and surpluses, together with the variation in total reserves. This is the approach adopted in this paper in the cases of East Asia and Southern Europe. We suppose that, without any structural problem in the international payment

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[2] Throughout this paper, we will adopt this definition of the term "over-indebtedness".

system giving rise to BoPs imbalances, the realization of current account deficits/surpluses, once the reserve change is duly considered, should largely explain the increase/decrease in the external debt. In the presence of structural over-indebtedness, we can expect instead a relationship between the debt and current account balances together with reserve changes higher than the unity, as shown in Carrera, Cárdenas and Martínez (2023).

Two groups of countries are analyzed: Greece, Italy, Portugal and Spain (GIPS) and Indonesia, Korea, Malaysia, the Philippines and Thailand (IKMPT). The two country groups share a common feature. The four Mediterranean countries had chronic current account deficits until the Great Crisis of 2008. Since the crisis, they made important efforts to reduce the deficit and even to get surpluses. A similar situation had occurred with the five countries of East Asia object of this study. These countries were affected by the financial crisis of 1997. With the outburst of the crisis, they were able to realize current account surpluses, putting an end to the deficits they had experienced until then. This study aims to determine the extent to which the variation in the sovereign debts of these countries took place because of current account balances and total reserve changes.

The time series analyzed in this paper includes data between the end (Q4) of 1971 and the end (Q4) of 2021. The five-decade period starts at the beginning of the flexible-rate regime (with the so-called "Nixon shock") and includes the years of the Asian Crisis of 1997 and the Great Crisis of 2008. The econometric analysis is carried out for the 1971-2021 period and for subperiods. In the case of East Asia, we consider the two periods 1971-1997 and 1997-2021. In the case of Mediterranean countries, we consider the period 1971-2008 and 2008-2021. The year 2008 in Europe was special for two reasons: the outburst of the global crisis and the implementation of the official payment system in the Eurozone (TARGET2).

The article is structured as follows. The first section provides a comparative analysis of debt evolution in Southern Europe and East Asia during the period 1971-2021. The following section presents the econometric evidence regarding the relationship between current account balances together with reserve changes and external debt in Southern Europe and East Asia. In the following section, we discuss the obtained results and provide a potential explanation. The paper concludes with final remarks.

II. Debt evolution in Southern Europe and East Asia: 1971-2021

The data used in this paper include balance-of-payment statistics from the World Bank Database (2023) and the External Wealth of Nations database (Milesi-Ferretti and Lane 2022). Time-series data regard the evolution of current account balances, total reserves of foreign currencies and gold, debt and gross domestic product between the last quarter of 1971 and the last quarter of 2021 (except for Portugal, for which information starts in 1972). As regards external debt data, an observation is in order. Data about a country's gross external debt position (World Bank 2023) start in 1998, thus putting a time restraint to our analysis. It must be noted, however, that Milesi-Ferretti and Lane's (2022) debt liabilities data are similar in value and in evolution to the values of the gross external debt position published by the World Bank (2023). Defined as "[s]um of the stocks of portfolio debt liabilities and other investment liabilities to non-residents" (*ibid.*), debt liabilities are an important part of the financial account of any balance of payment, consisting of portfolio stocks and other non-FDI investments. In the absence of more precise and free data, we regard the data published by Milesi-Ferretti and Lane (2022) as largely explaining a country's external debt.

In order to compare the change in the external debt and the series of current account balances (plus the change in reserves), we ask the increase in debt from one year to the following one (from t_0 to t_1) to be equal to the change in reserves minus that year's current account balance. If reserve change were zero[3] and the whole debt was due to current account transactions, a yearly increase in the debt (a positive variation) would be due to a current account deficit; a yearly decrease in the debt (a negative variation) would be due instead to a current account surplus. Thus, we expect that:

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[3] This assumption is made for the sake of explanation. In the current world monetary order, reserves of foreign currencies and gold are often large. At the end of 2022, the currency composition of official foreign exchange reserves (COFER) consisted in US dollar 6,471 billion, euro 2,270 billion, Chinese renminbi 298 billion, Japanese yen 610 billion and British pound sterling 548 billion. Other currencies followed, including the Australian dollar, the Canadian dollar, the Swiss franc and other currencies (International Monetary Fund 2023).

$$(debt\ t_1 - debt\ t_0) = [(total\ reserves\ t_1 - total\ reserves\ t_0) - current\ account\ balance\ t_1] \tag{1}$$

We will call the left and the right sides of Equation 1 respectively *actual* debt change and *explainable* debt change –that is, the amount of the change in the external debt that can be attributed to current account balances and reserve changes.

Now, the evolutions of the external debt (actual debt change) and the current account balance plus reserve change (explainable debt change) are represented graphically in Figures 1 and 2, respectively for Southern Europe and East Asia. External debt and GDP data (Milesi-Ferretti & Lane 2022) are used to build the actual debt change curve; current account data (Milesi-Ferretti & Lane 2022; IMF 2023) and reserve data (IMF 2023) are used to build the explainable debt change curve. Both the actual and the explainable debt changes are expressed in GDP percentages for scaling reasons. Figures 1 and 2 show that, in general, the actual debt change curve lies above the explainable debt
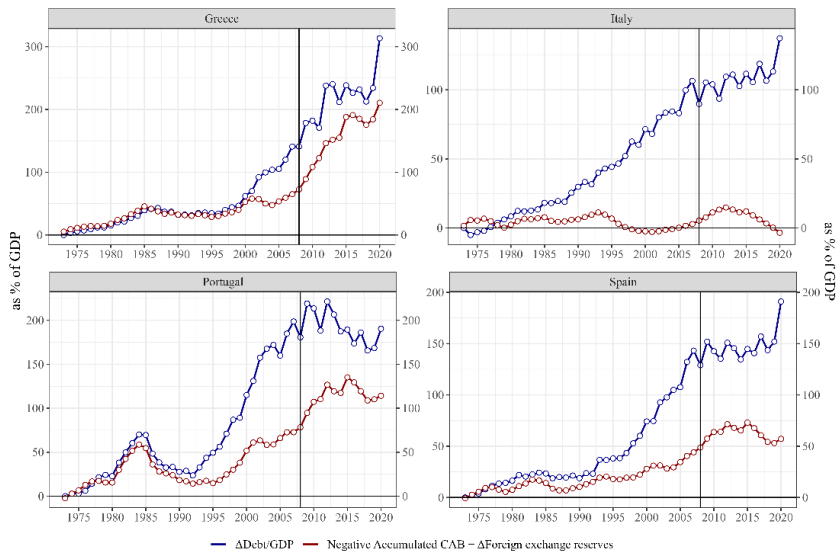
Source: authors' elaboration based on Milesi-Ferretti & Lane (2022), IMF (2023)

FIGURE 1

THE EVOLUTION OF ACTUAL AND EXPLAINABLE DEBT IN SOUTHERN EUROPE (1971-2021)

change curve. This means that, in general, yearly actual variation of the external debt (as GDP percentage) is larger than the external debt variation explainable in terms of the yearly current account and reserve changes (as a percentage of GDP).

If we look at debt data in Southern Europe (Figure 1), it can be observed that the crisis year did not mark any change in the evolution of actual and explainable debt values. The remarkable separation between the actual debt and the explainable debt curves started indeed far before the crisis: around 1985 in Italy, the early 1990s in Portugal and Greece, and around 2000 in Greece.

It's crucial to consider that, when expressing debts as a percentage of the GDP, we are encompassing not only variations in the gross debt arising from current account deficits and interest payments but also the impact of economic growth. Consequently, if the debt service and the trade deficit can be offset by a rising GDP, the debt-GDP ratio may stabilize, even with a persistent trade deficit (as observed in the case of the United States). Conversely, in times of economic crisis, external debt may increase, even when the trade deficit is corrected thanks to falling imports and/or rising exports. This is the reason why the expected external debt (explainable debt) in terms of the GDP has increased in European countries, even though they corrected their trade deficit from the beginning of the Great Recession in 2008.

Similar trends of the actual and explainable debt lines can be observed until 1997 in East Asia. Then, different behaviors can be observed, especially in Korea, Malaysia, and Thailand. Contrary to Southern Europe, the crisis of 1997 in East Asia marks a watershed, as it coincides with a change in the evolution of actual and explainable debt lines. All five of the countries experienced a downward trend in the explainable debt curve. The difference between actual and explainable debt values started growing in the same year, particularly in Korea, Malaysia, and Thailand (Figure 2).

The evolution of the two variables object of this study can be initially approached by analyzing the ratios between the actual and explainable debt changes on a yearly basis (the ration between the left and the right sides of Equation 1). Following Cencini and Schmitt (1991), Carrera, Cárdenas, and Martínez (2023), and Carrera and Cencini (2024), yearly ratios should be equal or as close as possible to 1.0. The reality of facts however imposes a degree of flexibility upon the observer, because of statistical errors, omissions, and debt cancellations. It seems thus
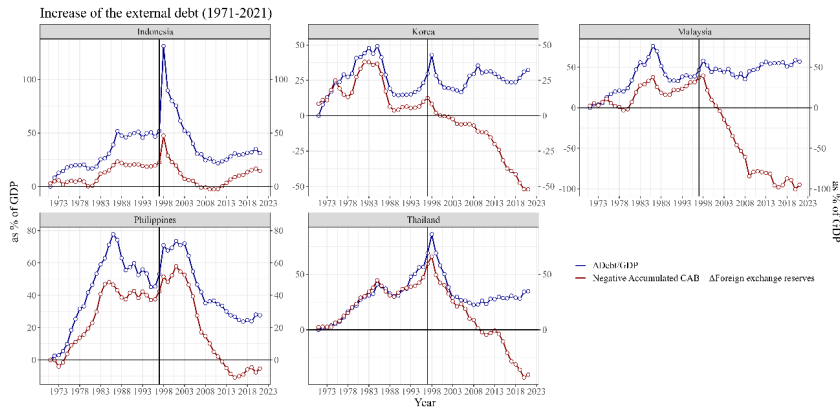
Source: authors' elaboration based on Milesi-Ferretti & Lane (2022), IMF (2023)
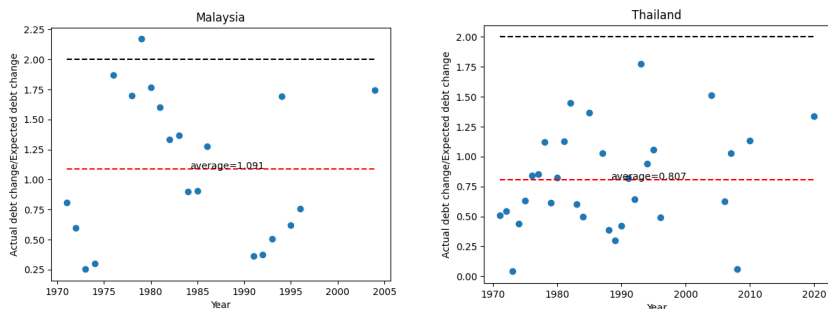
FIGURE 2

THE EVOLUTION OF *ACTUAL* AND *EXPLAINABLE* DEBT IN EAST ASIA (1971-2021)

appropriate to consider the average of the yearly ratios as the best expression of the relationship between the actual and the explainable changes in debt. Therefore, we consider the cases, between 1971 and 2021, in which actual debt increases correspond to the explainable accumulation of new debt (both actual and explainable debt changes being positive).

Of the nine countries under study, only Malaysia and Thailand have average ratios close to 1.0 (respectively, 1.09 and 0.81), despite an interesting data dispersion (Figure 3).

In the other cases, except for Italy, the yearly ratios have average values closer to 2.0 rather than 1.0 (Figure 4 and Figure 5). Interestingly, the yearly ratios before the 2000s in Italy had values in line with the averages of the other countries, smaller or higher than two.

The average yearly ratios are thus 1.74 in Greece, 7.36 in Italy, 2.39 in Portugal, 2.53 in Spain, 1.72 in Korea, 2.69 in Indonesia and 1.77 in the Philippines. Such results seem to show an *actual-explainable* debt ratio adjusting around two. In order to explore this issue, we develop a seminal econometric study in the next section.

Source: authors' elaboration based on Milesi-Ferretti & Lane (2022), IMF (2023)

FIGURE 3

ACTUAL-EXPLAINABLE DEBT RATIO (YEARLY AND AVERAGE, 1971-2021): MALAYSIA AND THAILAND
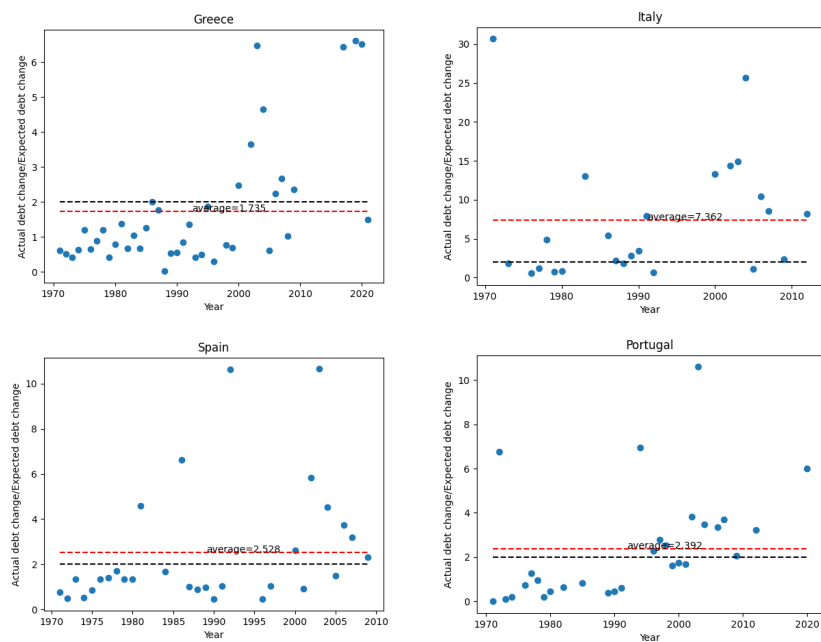
Source: authors' elaboration based on Milesi-Ferretti & Lane (2022), IMF (2023)

FIGURE 4

ACTUAL-EXPLAINABLE DEBT RATIO (YEARLY AND AVERAGE, 1971-2021): GREECE, ITALY, SPAIN AND PORTUGAL

Source: authors' elaboration based on Milesi-Ferretti & Lane (2022), IMF (2023)
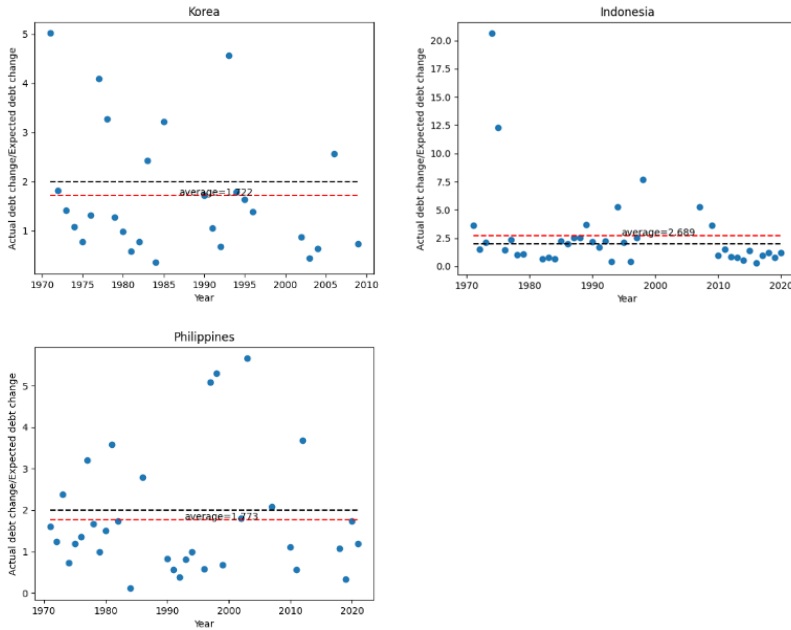
FIGURE 5
ACTUAL-EXPLAINABLE DEBT RATIO (YEARLY AND AVERAGE, 1971-2021): KOREA, INDONESIA, AND THE PHILIPPINES

III. Econometric results for Southern Europe and East Asia

We carry out a correlation study to the two groups of countries in the Mediterranean region and in East Asia. We seek to study the functional dependence of the debt (dependent variable) on current account balances and changes in total reserves. If the correlation does not prove robust enough, we will proceed with a ratio analysis, in the attempt to study the relationship (quotient) between the actual change in debt (left hand side of (2)) and the explainable variation in the debt itself (right hand side of (2)). Therefore, we seek to verify the following:

$$(debt\ t_f - debt\ t_0)$$
$$= \{(total\ reserves\ t_f - total\ reserves\ t_0) - \sum_{t_1}^{t_f} current\ account\ balance\} \quad (2)$$

where $t = t_0, t_1, ..., t_f$.

A. Greece, Italy, Portugal and Spain (GIPS)

The correlation study applied to the GIPS shows a significant general trend toward over-indebtedness, that is, a higher indebtedness than explicable by current account balances and reserve changes, with few exceptions.

Over the five decades (1971-2021), over-indebtedness was of 43% in Greece (slope of 1.43, $R^2 = 0.93$), about 100% in Portugal (slope of 2.02 and $R^2 = 0.77$), and over 100% in Spain (slope of 2.23 and $R^2 = 0.80$). The case of Italy deserves further study, because of a relatively low robustness ($R^2 = 0.29$).

If we consider subperiods, we obtain a clearer picture of the evolution of the debt compared to the evolution of current account balances and reserve changes. Italy is the only case with low robustness between
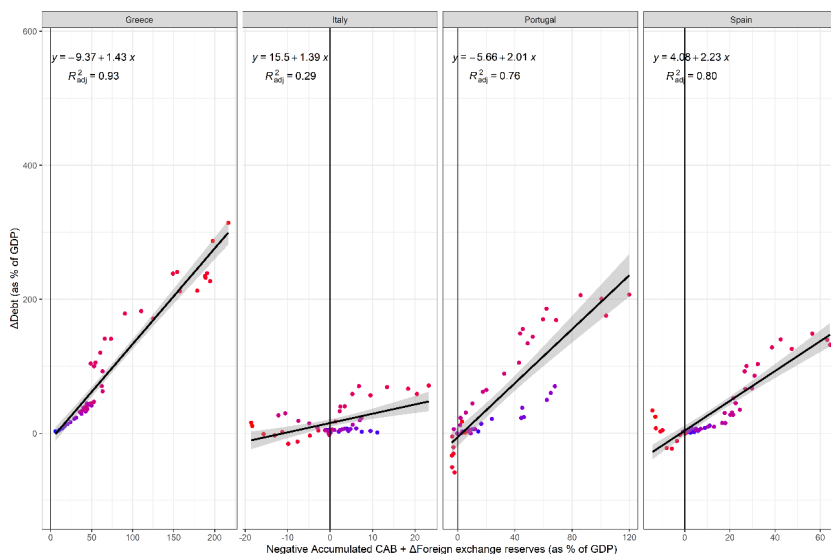
Source: authors' elaboration based on Milesi-Ferretti & Lane (2022), IMF (2023)
*Note: In the case of Portugal, the starting year is 1972, due to lack of data in 1971.

FIGURE 6
ACTUAL AND *EXPLAINABLE* DEBT CORRELATION: GIPS (1971-2021)
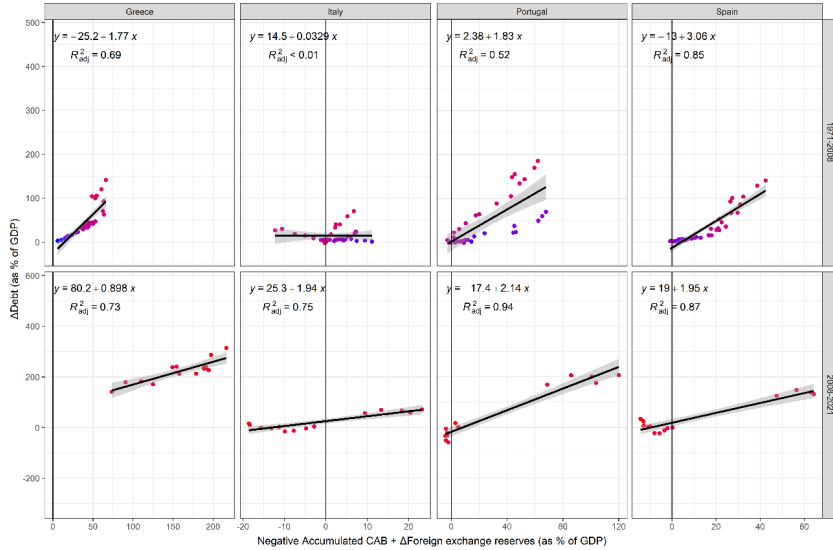
Source: authors' elaboration based on Milesi-Ferretti & Lane (2022), IMF (2023)
*Note: In the case of Portugal, the starting year is 1972, due to lack of data in 1971.

FIGURE 7
ACTUAL AND *EXPLAINABLE* DEBT CORRELATION: GIPS (1971-2008 AND 2008-2021)

1971 and 2008. In the same period, though, we obtain significant regression results. Correlation lines show a slope of 1.77 in Greece (R^2 =0.69), 1.86 in Portugal (R^2 =0.54), and 3.06 in Spain (R^2 =0.85). The post-crisis period, between 2008 and 2021, shows robust results in all the four Mediterranean countries. Of the four countries, Greece is the only one capable of keeping an almost unitary relationship between the change in debt and the current account balance together with the variation in reserves (R^2 =0.73). Regression line slopes were 1.94 in Portugal (R^2 =0.75), 2.14 in Spain (R^2 =0.94), and 1.95 in Italy (R^2 =0.87).

B. Indonesia, Korea, Malaysia, Philippines and Thailand (IKMPT)

The regression analysis in East Asia shows relatively robust results in the pre-crisis period (1971-1997). Relatively low R^2 values since the Asian crisis of 1997 impose a ratio analysis for the whole period and the two subperiods.
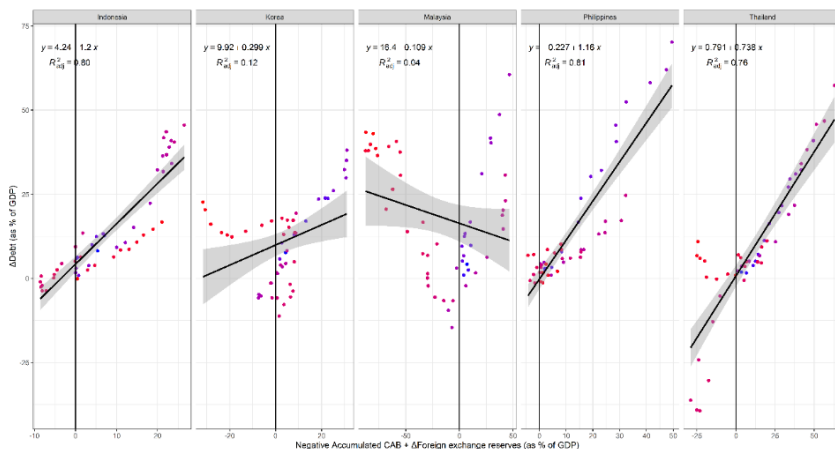
Source: authors' elaboration based on Milesi-Ferretti & Lane (2022), IMF (2023)

FIGURE 8

ACTUAL AND EXPLAINABLE DEBT CORRELATION: IKMPT (1971-2021)

In the case of Indonesia, the regression coefficient in the two periods has values of 1.57 and 0.791 (robustness of 0.91 and 0.68). We observe that the whole-period ratio, between the end of 1971 and the end of 2021, is 1.2 (robustness of 0.80). Between 1971 and 1997, the debt rose 1.79 than explicable by current account and reserve transactions. This excessive over-indebtedness was remarkably reduced since the crisis. In fact, in this subperiod, the ratio was of 0.97.

The Korean case is extremely interesting. Although Korea's regression coefficient is around 1 (1.02, with $R^2=0.97$) between 1971 and 1997, the regression analysis for the whole period 1971-2021 and for the subperiod 1997-2021 is not statistically robust. The analysis of ratios helps understand the evolution of debt, showing striking over-indebtedness. Between 1971 and 2021, Korea has been able to decrease its deficit position; yet debt has increased. In fact, over the 1971-2021 period, debt should have decreased by USD million 478.463; nonetheless, it rose by USD million 577.156. That is, the inexplicable rise in debt was 2.21 times what it should have been decreasing. In the deficit years, in the period between 1971 and 1997, the over-indebtedness of Korea reflects features like those of Southern Europe. In this period, debt had to be equal to USD million 90.533, far from the

actual value of USD million 169.355. Accumulated debt was 1.87 times its explicable value. The major effort to reduce indebtedness was made in the post-crisis period, between 1997 and 2021. The debt should have decreased by USD million 568.996 and, on the contrary, it rose by USD million 407.802. The inexplicable debt was 1.72 times the explicable value.

The case of Malaysia is similar to the Korean one. Results are robust between 1971 and 1997 (coefficient equal to 0.798 and R^2=0.56). The ratio analysis on its part turns out to be useful to understand the evolution of debt in the subperiods. Over-indebtedness can be detected in Malaysia too. This is evident for example in the entire period 1971-2021. Debt should had gone down by USD million 238.653 and, on the contrary, it rose by USD million 210.811. That is, inexplicable debt was 1.88 times the amount of the decrease that should have been observed. If it is true that the debt rose without any apparent structural anomalies until 1997 (ratio equal to 0.83), it must be observed that, between 1997 and 2021 Malaysia made an important effort to reduce its debt position, even though data reflect persistent indebtedness. In fact, in this period debt should have decreased by USD million 299.543 and, on the contrary, it rose by USD million 160.386. That is, the inexplicable debt was 1.54 times what it should have decreased.

The Philippines shows an over-indebtedness reflected by a regression coefficient of 1.34 and 0.54 in the two subperiods (R^2=0.82 and 0.62 respectively) and of 1.16 (R^2=0.81) between 1971 and 2021. Over-indebtedness can be shown through the analysis of ratios. In the Philippine case, the major over-indebtedness shows up in the post-crisis period and in the whole period 1971-2021 (accumulated debt in each period was of 1.50 and 1.24 times the expected ones respectively).

In the case of Thailand, the regression coefficient is equal to 0.872 and 0.722 in the two subperiods (R^2=0.95 and 0.53 respectively) and 0.738 for the whole period 1971-2021 (R^2=0.76). Yet, subperiod analysis clearly shows over-indebtedness starting from 1997 similar to the cases of Korea and Malaysia. As these countries, Thailand was able to reduce its expected debt level; yet actual debt kept on being relatively high. In fact, debt should had decreased by USD million 77.211 between 1997 and 2021; actually, it increased by USD million 70.076. That is, over-indebtedness was 1.91 times the expected debt reduction.

The previous results seem to confirm the existing literature on external over-indebtedness (see, *e.g.*, Cencini and Schmitt 1991;
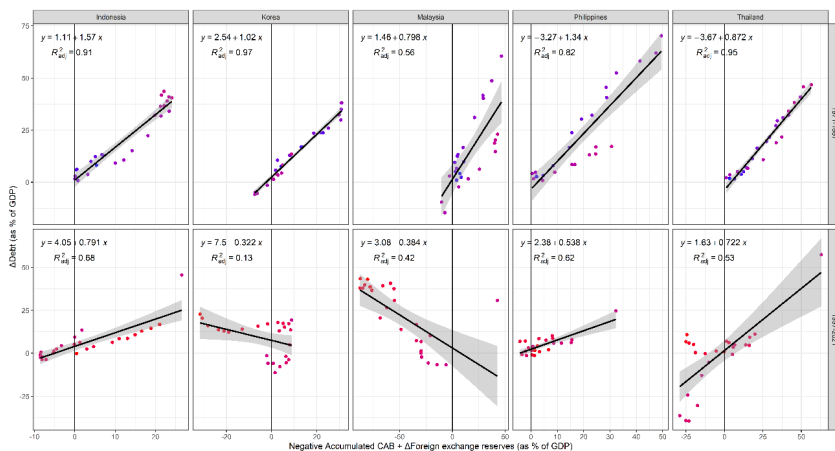
Source: authors' elaboration based on Milesi-Ferretti & Lane (2022), IMF (2023)

FIGURE **9**

ACTUAL AND *EXPLAINABLE* DEBT CORRELATION: IKMPT (1971-1997 AND 1997-2021)

Carrera, Cárdenas, and Martínez 2023; Carrera and Cencini 2024). Yet, prudence requires further statistical investigation. The regressions used always take normality of datasets to some extent. Despite that not being necessary to out conclusions, the very distribution of the data should be studied. Future studies should be aimed at confirming the robustness of empirical results, controlling for the different variables involved. Also, in line with other external debt studies (see, *e.g.*, Papadimitriou, Zezza, and Hannsgen 2006; Hale and Juvenal 2023), other data sources could be taken into account, in order to assess different balance-of-payment and debt valuations and test them through econometric analysis. Further analysis could also include the time component of the data. Considering the evolution of debt along time and not only the differences of two consecutive years can indicate trades and show discontinuities related to economic events.

Further investigation is also due in terms of exchange rate fluctuations and capital transactions because they could have an impact on the ratio between external indebtedness and current account balances (including reserve changes).

It must be observed that a number of Asian countries have often been inclined to peg their currency, formally or not, to the US dollar. This

is particularly true of East Asia. '[I]n the increasingly integrated East Asian economies before the 1997 crisis, all countries except Japan had been informally pegged to the dollar. [...] After the 1997-1998 crisis most of the East Asian countries resumed informal dollar pegging' (McKinnon 2005: 225). The usual belief was that the US dollar as an anchor gave the exchange rate stability required for sustained economic growth in East Asia. 'Given the historical association of economic growth and exchange rate stability, it is not surprising that Asian policymakers continue to long for stable currencies' (Chung and Eichengreen 2007: 2).

Pegging in the past has usually been a common choice in East Asia. Yet, different stabilization policies have emerged over the years. 'Thus, while Hong Kong maintains its dollar-based currency peg and Taiwan continues to stabilize its exchange rate against the dollar even more tightly than before the crisis, Indonesia, the Philippines, Singapore, South Korea, and Thailand have all moved to at least somewhat greater flexibility against the dollar. China and Malaysia appear to be in transition between these two states' (Chung and Eichengreen 2007: 6). Following Kawai (2007: 9), in the post-crisis years Indonesia adopted an exchange rate free to float, despite some interventions carried out by the central bank. The cases of Korea, the Philippines, and Thailand are somewhat less clear in this sense: 'it is hard to argue that these countries have reverted to pre-crisis dollar-based exchange rate stabilization policies. But it is equally hard to argue that they have shifted to free floats' (Kawai 2007: 9).

Criticism has come against the dollar-pegging policy in the region, because of the large current account imbalances that the exchange rate policy seemingly contributes to exacerbate. 'U.S. officials argue that Asian exchange rates pegged to the dollar at artificially low levels are contributing to imbalances jeopardizing global economic stability, or at least that they are preventing their orderly resolution' (Chung and Eichengreen 2007: 2). Accordingly, the continuance of the dollar-pegging policy may contribute to the radicalization of great deficits realized by the US and large surpluses resulting from Asian's exports. In our scope, all this deserves an in-depth analysis, because exchange rate policy may ultimately have an impact on ever-growing external debts. It could also have an influence on capital flow policy, given that the appreciation of East Asian currencies against the dollar could raise 'the specter of capital losses on the region's dollar reserves' (Chung and Eichengreen 2007: 3). Hence, some countries may find it necessary to impose capital

control policies, in order to avoid the detriment of dollar reserves and, ultimately, maintain sufficient reserves to meet liquidity needs with international partners. A future study should seek to studying the potential impact of capital control regimes on the relationship between external debt and current account balances (plus reserve changes), verifying whether it is low in those countries implementing capital control policies.

IV. Over-indebtedness? A potential explanation

The over-indebtedness shown by the previous empirical results has been suggested theoretically by rare literature cases. In this regard, Rueff (1963) and Cencini and Schmitt (1991) seem to be the most pertaining references. Debt amounts far beyond the levels explainable by current account balances and reserve changes would be due to the absence of a clearing and settlement mechanism between countries.

Whenever a net importing country is allowed to pay for its commercial purchases in its own currency, the net exporting country is paid in a duplicate currency and the payment is never made effective. In the case of the US and China, for instance, the US dollar never leaves the United States and China is the beneficiary of claims on deposits in the United States. 'Entering the credit system of the creditor country, but remaining in the debtor country, the claims representing the deficit are […] doubled' (Rueff 1963: 324). To be true, banks in net exporting countries do not enter currency in their books, but credits or claims on bank deposits in net importing countries. Such credits are conceived of as monetary assets, duplicates of the currency entered in the banking system of the net importing country (on this see, *e.g.*, Carrera and Cencini 2024).

Let us refer to Table 1 for the sake of explanation. Acting on behalf of their clients, banks in the importing country (the US in our example) make a payment to their counterparts in the exporting country (China in our example). US importers are debited by their banks, which simultaneously credit foreign banks domestically (Entry 1). This operation gives rise to claims of Chinese banks on relative deposits in the United States (Entry 2).

The example, though simplified, shows the direct link between the two banking systems, which operate between each other without any intermediary bridge apt to settle and clear the reciprocal transactions

TABLE 1

THE PAYMENT OF NET IMPORTS AND EURO-CURRENCY FORMATION

US Banking System			
Assets		*Liabilities*	
(1) Loans to firms	USD x	Importers	– USD x
		Chinese Banking System	+ USD x

Chinese Banking System			
Assets		*Liabilities*	
(2) Reserves	USD x	Exporters	Yuan y

Source: authors' elaboration based on Carrera and Cencini (2024).

between the two countries. The current international payment system is such that transactions between countries are never settled nor cleared. This means that importers do pay, exporters are paid, but the net importing country (its banking system) turns out to be indebted toward the net exporting country (its banking system). Commercial imports are paid by reserve countries in their acknowledgments of debt (IOUs) and never in financial securities or real goods. This leads to the accumulation of external debts owed by net importing countries and overwhelming reserves in foreign currencies owned by net exporting countries.

A solution to the debt issue, which is suggested in the following pages, would require restructuring the way in which international payments are carried out, through monetary integration among countries. This would not necessarily imply the adoption of a common currency at regional level –which can be implemented (i) provided a common payment clearing and settlement system and (ii) once economic convergence is achieved. Regional monetary integration would fundamentally affect the euro-dollar or xeno-currency market, leading even to its end. This would lead to the end of the enormous speculation that nowadays affects exchange rates fluctuations. Either through the adoption of stable, periodically-adjustable exchange rates, or the adoption of a common currency, regional monetary integration would be achieved through a centralized bookkeeping system as will be described in this section. Inevitably, some considerations will also be made on the role of monetary policy in a monetarily integrated area.

The debate on monetary integration in Europe has been going on for at least three decades now and it has led to the creation of the Eurozone in the early 2000s. In East Asia, debates on potential forms of monetary integration have remained theoretical in nature, despite a widespread desire to join forces to create a sort of regional monetary area. '[I]n the increasingly integrated East Asian economies [...] the desire for a common monetary standard [...] remains strong' (McKinnon 2005: 225). This section explores the foundations of a regional payment system based on real-time gross settlement in Asia and in Europe.

Economic reasons are certainly good drivers of monetary integration. The economic reasons for monetary integration were the object of study about the Optimum Currency Area (OCA), first proposed by Mundell (1961) and further shaped by Fleming (1962), McKinnon (1963, 2005), Kenen (1969) and De Grauwe (1992). Applied to the case of East Asia, for instance, an OCA in the region would not necessarily be made of two or more countries –let us say Korea and Japan– but of national regions similar in economic terms. For example, if we could clearly distinguish industrial and agricultural regions in both Korea and Japan, there may be reasons to think of the Korean and the Japanese industrial regions as a potential locus for an OCA; likewise, the Korean and the Japanese agricultural regions may be the locus for another OCA.

According to Mundell, a major economic requirement for the formation of an OCA is internal factor mobility and immobility between areas. 'If the world can be divided into regions within each of which there is factor mobility and between which there is factor immobility, then each of these regions should have a separate currency which fluctuates relative to all other currencies' (Mundell 1961: 663). Different exchange rates would be established 'to make up for the lack of factor mobility among areas' (McKinnon 1963: 724). More or less rigid exchange rates could be fixed between regional currencies or, in rarer cases, a common currency could be established between regional countries. De Grawe (1992) referred to the former and to the latter as cases of *incomplete* and *complete* monetary unions, respectively. The concept of factor mobility, which was central to exchange rate determination, was then developed by McKinnon (1963) in terms of factor mobility between industries, rather than in geographical terms.

The economic requirements for an OCA to be formed were extended to the trade and the investment spheres. In these terms, regional countries with high levels of mutual trade and mutual investments may

represent a suitable space for monetary cooperation. This holds true for instance in East Asia. 'The East Asian economies are increasingly integrated in trade and direct investment. More than 50 percent of their foreign trade is with each other [...] and both the high growth and high level of trade integration are similar to what the Western European economies achieved in the 1960s' (McKinnon 2005: 199). Accordingly, the strong commercial and investment ties among regional countries seem a good reason to explore the likelihood of some form of monetary integration in the area.

Political factors, though, have also proven to be a major integration source. This observation is in line with Mundell's prediction, according to which '[t]he concept of an optimum currency area [...] has direct practical applicability only in areas where political organization is in a state of flux, such as in ex-colonial areas and in Western Europe' (Mundell 1961: 661). The Eurozone, for instance, has been created and put into motion although the European Community did not represent an optimal monetary union (e.g., see De Grauwe 1992: 91). Euro-sceptics in fact have often perceived the gains in economic efficiency – resulting from the absence of exchange rate volatility and transaction costs– as smaller than the costs associated with the loss of national monetary sovereignty.

Traditionally, Eurozone members have never met the conditions to join the monetary union as listed in Article 140 (former 121.1) of the Treaty on the Functioning of the European Union. These conditions, known as the Convergence Criteria of the Treaty of Maastricht, were purely economic ones and can be summarized as (i) price stability, (ii) low and stable public debt, (iii) exchange rate stability, and (iv) interest rate stability. When the Eurozone was formed, only Luxemburg met these economic criteria, testifying of the political reasons, rather than the economic ones, behind the monetary integration of Europe. As regards East Asia, it is highly plausible that monetary integration in the area would be subject to political reasons as occurred in Europe. In this sense, the path toward monetary integration will be shaped by the geopolitical order resulting from the confrontation between major world actors –likely the United States and China– together with their respective commercial and political allies.

If we assume that the economic conditions and the political will were strong enough to justify a form of monetary integration in East Asia, a common payment system may be created in the region. Monetary

integration in Asia would require a common layer, *i.e.*, a real-time gross settlement and clearing system that would constitute the foundations of a Clearing Integrated Monetary Area (CIMA) (on this, see Carrera and Cencini 2024), which resembles the architecture of national banking systems and applies it to the international arena.

At the national level, what makes unique the banking system is the presence of a plurality of commercial banks and a single central bank. A commercial bank issues its own money, provides credit to production, manages clients' deposits by lending income and making payments. Either that it acts on behalf of its clients as a pure intermediary or that it acts as a for-profit firm, any commercial bank always makes transactions through the intermediation of the central bank. The central bank in fact employs a real-time gross settlement (RTGS) system through which commercial bank moneys are replaced by the national (central bank) currency. The heterogeneity of commercial bank moneys is impeded thanks to the existence of a single, vehicular currency issued by the central intermediary. In this way, the central bank impedes commercial banks' payments to be made through acknowledgment of debt (commercial banks' IOUs).

The existence of central banks as pure intermediaries is relatively recent. Indeed, most central banks were created in the 20th century and their operations are still perfected. Before they surged as payment intermediaries, issuing their own currency, national monetary systems were similar to the current international system, characterized by a large number of banks that make payments among them directly, without the intermediation of any central bank. The existence of the central bank (of the RTGS) allows for a payment to be effectively made when commercial banks hold credits on the central bank. Commercial banks do make payments among themselves only when they hold a deposit at the Central Bank or when they are granted overnight credit by the Central Bank itself. Otherwise, no payment can be made. This principle is at the basis of the RTGS system.

If the RTGS system were implemented at the regional level, a common intermediary would function with the aim of ensuring monetary homogenization among countries, thus impeding the payment of goods and services with a simple acknowledgment of debt on the part of the national banking system of any net importing country. In this way, the accumulation of foreign currencies would be impeded and, accordingly, net exporting countries would be effectively paid. Monetary

homogenization would be guaranteed through the respect of the identity between net exports and net imports –commercial or financial. In no case, in fact, the RTGS would allow for the payment of any commercial purchase through the formation of foreign claims on domestic deposits.

Impeding the formation of foreign claims on domestic deposits, the new regional payment system would lead to a fundamental change in the euro-dollar or xeno-currency market. Payments from Korea to Thailand, for instance, would no longer lead to the creation of Thailand's claims on Korean bank deposits. This would put most currency speculation to an end, implying that exchange rate fluctuations would drastically slow down.[4] It is no mystery, indeed, that exchange rate floating is largely due to speculation, by the part of international investors in the market for euro-dollars or xeno-currencies; only to a minimal part it is due to other reasons, such as the deliberate decision of policy makers determined to protect domestic exports or to make imports cheaper. This means that, once the RTGS system is functioning, exchange rates of member countries' currencies would largely stop floating.

As a result of the new clearing and settlement system, exchange rates among member countries' currencies would not float. The exchange rate between the Korean won and the Malaysian rupia, for instance, would not fluctuate. Being the RTGS system implemented at regional level only, the creation of euro-dollars or xeno-currencies would still be the result of payments with non-area countries. Payments of US imports of Korean products, for instance, would still imply the recording of claims in US dollars as assets of the East Asian supranational bank managing the clearing and settlement system of the new East Asian currency area. Such euro-dollars or xeno-currencies would be then invested, without any impact on the exchange rate between the US dollar and the Korean won.

Once a common RTGS system were implemented, monetary integration would pass through the determination of stable exchange rates among national currencies that would depend on the macroeconomic conditions of the single economy. Temporary revisions of the exchange rate could be made, in order to guarantee the correspondence between the nominal exchange rate and the conditions of the real economy. If catch-up were effective in enabling economic

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[4] See Carrera and Cencini 2024 on this.

convergence between the regional economies, then integration could eventually be developed on the path toward the constitution of a common, single currency. In that case, the exchange rate between any national currency and the currency issued by the central bank would be on a par. It is evident that, at present, the common-currency option should be discarded, being economic conditions in East Asia different from country to country, so that economic convergence is far from being realized (on this theme see, *e.g.*, Lee 2013, 2019).

Given the current configuration of world institutions, the creation and the management of the new RTGS could be entrusted to a new supranational bank or to one of a few long-established institutions, namely the Bank for International Settlement (BIS) or the International Monetary Fund (IMF). The IMF, through an RTGS system, could adopt a supranational currency, called *e.g.* the "international dollar", to manage transactions among its members.[5] The choice of the common intermediary will inevitably be subject to geopolitical interests. From a purely technical perspective, though, the RTGS could also be managed by a regional institution like the European Central Bank in Frankfurt in the Eurozone.

Before sketching the accounting mechanism behind a potential RTGS system in East Asia, let us make some considerations about the economic trilemma concerning exchange rates, capital mobility, and monetary policy in the region.

In recent years, East Asian countries have taken steps to move away from dollar-anchoring. Reasons are quite important. 'With the high volatility of yen-dollar and euro-dollar exchange rates and given their diverse economic relationships globally—through trade, FDI, and other forms of capital flows—the benefits of using the US dollar as sole anchor have become limited. For much of emerging East Asia, the US is no longer the most dominant economic partner due to the traditional trade and FDI partnership with Japan and the European Union as well as the rising importance with other emerging economies in the region' (Kawai 2007: 10). This moving toward a currency basket system –which includes the Chinese yuan, the euro, the Japanese yen and the US dollar, for instance– has given more space of action to national monetary policy in the case of overheat. 'So long as exchange rates

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[5] For a detailed explanation, see Carrera and Cencini 2024.

were pegged, growing capital mobility left less scope for autonomous monetary policies that might prevent economies from overheating and protect them from potentially dangerous lending booms' (Chung and Eichengreen 2007: 5).

Hence, it seems rather pivotal for monetary policy to keep contributing to the economic benefits of East Asian countries, even in the case in which a common RTGS system came to light. In this regard, it must be observed that East Asian countries belonging to the RTGS system could still implement autonomous exchange rate regimes regarding their own currencies and currencies of countries outside the system. Korea, for instance, could independently adopt the type of US dollar – won exchange rate regime that most suits national economic and social interests. Compared to the present time, monetary and economic policies toward the rest of the world would be left summarily unchanged. The novelty of a regional RTGS system would lie in the collective agreement on intraregional exchange rates. Members of the RTGS system would agree on fixed (albeit modifiable) exchange rates between each member country's currency and the currency issued by the common central bank. For instance, the Korean won, the Indonesian rupia, the Malaysian rupia, the Philippine rupia and Thailand's bat would be expressed in terms of the supranational currency issued by the supranational bank. Depending on the evolution of economic conditions of every member country, exchange rates could be modified. The initial determination of exchange rates could be made along lines similar to the ones adopted by European countries when exchange rates were determined between each currency of Eurozone members and the euro.

The adoption of the RTGS system and the set of intraregional exchange rates would be a first step away from pegging to one key-currency or the other –the US dollar or the Chinese yuan, for instance. Therefore, the system would contribute to the 'cooperative management' that has been longed for quite a few years now. 'Opponents [of dollar-pegging] argue that cooperative management of exchange rates and reserves would be facilitated by creating a common set of agreed currency targets and commitments: in other words, by agreeing on a regional exchange rate regime' (Chung and Eichengreen 2007: 3). The kernel of the issue lies in the working out of an intraregional exchange rate system, rather than on focusing exclusively on establishing an exchange rate regime toward the rest of the world.

It is argued that emerging East Asia should concentrate on stabilizing intraregional exchange rates rather than exchange rates vis-à-vis the United States, Europe, and Japan. Intraregional trade has been the most rapidly growing component of East Asia's total trade. Regional supply chains and production networks are best fostered by limiting exchange rate variability within the region, not by limiting variability vis-à-vis the rest of the world. Since exchange rate stability is valued by foreign investors, stable intra-Asian exchange rates may be important for encouraging the cross-border participation in local currency bond markets that is the goal of the Asian Bond Fund and the Asian Bond Market Initiative. These observations provide the motivation for proposals that East Asian countries agree on the creation and maintenance of a multilateral regional currency grid.

(Chung and Eichengreen 2007: 8)

Let us now sketch the working of real-time gross settlement at the regional level in the cases, for instance, of Korea and Thailand.

In 2021, Korea's exports to Thailand were worth $8.7 billion. Thailand's exports to Korea were worth $6.28 billion. Net exports from Korea (Thailand's net imports from Korea) were thus worth $2.42 billion (OEC 2023). Table 2 depicts the payments of exports and imports between the two countries through a proper RTGS system. Entry 1 shows the presence of bank deposits in favor of a commercial bank's clients in Korea, equivalent to loans to production for the same amount. Entry 2 reflects the debiting of commercial importers in favor of the Bank of Thailand (the central bank). Entry 3 depicts the debiting of the importers' bank in favor of the Bank of Thailand and the corresponding crediting of the Supranational Bank in supranational bank money (SBM). Entry 4 corresponds to the management, on the part of the Supranational Bank, of the debit of the Bank of Thailand and the credit of the Bank of Korea as part of the payment of Thailand's commercial purchases. Entry 5 shows the credit in favor of a Korean commercial bank and the correspondent debit of the Supranational Bank, both operated by the Bank of Korea. Entry 6 represents the final debiting of the Bank of Korea and crediting of Korea's commercial exporters granted by their commercial bank.

Now, it must be recalled that, in the current configuration of the international payment system, the payment of one's purchases leads to the formation of reserve currencies in the exporting country. The RTGS,

as sketched in Table 2, avoids this phenomenon. In fact, it prevents the formation of domestic currencies abroad, substituting them with the currency issued in the inter-national space by the Supranational Bank. Further, the RTGS allows for the effective settlement and clearing of payments, counterbalancing commercial purchases by financial sales (stocks, obligations, and any title granting right to a future real product produced by the commercial importing country). Entries 7 to 12 represent the purchase of financial securities in Korea (tantamount to a sale of financial securities by Thailand).

Entry 7 depicts the debiting of Korea's financial importers in favor of the Bank of Korea. Entry 8 shows the final balance of commercial bank books in Korea. Entry 9 represents the debiting of the commercial bank and the credit of the Supranational Bank operated by the Bank of Korea. Accordingly, Entry 10 records the Supranational Bank's credit on the Bank of Korea and its debit on the Bank of Thailand. Books at the Supranational Bank are cleared. Entry 11 registers the debit of the Supranational Bank and the equivalent credit of a commercial bank (the clients of which are financial exporters) in Thailand in the books of the Bank of Thailand. Books at the Bank of Thailand are cleared. Entry 12 represents the debiting of the Bank of Thailand and final payment of Thailand's financial exporters operated by their commercial bank. Commercial bank books are finally cleared.

The RTGS system sketched in Table 2 does not differ in nature from the payment mechanism usually implemented by any national banking system taken as a whole. It also sheds light on the few, shy attempts made by some world regions to develop and implement some sort of monetary integration. In this regard, it is licit to think that the Eurozone system works alike. Yet, as we will briefly observe hereafter, the working of the RTGS in the Eurozone does not seem to reflect the typical settlement and clearing logics (on this, see *e.g.* Rochon and Rossi 2023).

The Eurozone adopts a settlement and clearing system known as TARGET (acronym of Trans-European Automated Real-time Gross-settlement Express Transfer System), which is defined as a 'decentralised system consisting of the […] national RTGS systems, the ECB payment mechanism (EPM) and the Interlinking system' (ECB 2007: 31). The 'decentralized' character of the system makes the bell ring. One expects the European Central Bank (ECB) to be the central intermediary of the Eurozone, channeling all payments among member countries. Yet, '[t]

Commercial importer: Thailand

Commercial Bank (Thailand)			
Assets		Liabilities	
(2) Commercial importers	฿y	Bank of Thailand	฿y
(12) Bank of Thailand	฿y	Financial exporters	฿y

Bank of Thailand			
Assets		*Liabilities*	
(3) Commercial banks	฿y	Supranational Bank (commercial transactions)	SBMx
(11) Supranational Bank (financial transactions)	SBMx	Commercial bank	฿y

International central bank

Supranational Bank			
Assets		*Liabilities*	
(4) Bank of Thailand (commercial transactions)	SBMx	Bank of Korea (commercial transactions)	SBMx
(10) Bank of Korea (financial transactions)	SBMx	Bank of Thailand (financial transactions)	SBMx

Commercial exporter: Korea

Bank of Korea			
Assets		*Liabilities*	
(5) Supranational Bank (commercial transactions)	SBMx	Commercial bank	₩x
(9) Commercial bank	₩x	Supranational Bank (financial transactions)	SBMx

Commercial Bank of Korea			
Assets		*Liabilities*	
(1) Firms (Korea)	₩X	Income-holders (Korea)	₩X
(6) Bank of Korea	₩x	Commercial exporters of Korea	₩x
(7) Income-holders (financial importers of Korea)	₩x	Bank of Korea	₩x
(8) Firms	₩(X − x)	Income holders	₩(X − x)

Source: authors' elaboration based on Carrera and Cencini (2024).

he TARGET set-up can be described as a decentralized system in which payment messages are exchanged on a bilateral basis without a central counterparty' (ibid.: 34). The European Central Bank apparently does not work as a central bank of central banks, because it does not settle and clear payments among Eurozone members. Payments, indeed, are made directly between the payer and the payee through their National Central Banks (NCBs). 'Cross-border TARGET payments are processed via the national RTGS systems and exchanged directly on a bilateral basis between NCBs' (*ibid.*: 34).

Provided the existence of commercial bank's deposits within the central institution, the central bank in the importing country will credit its counterpart in the exporting country. For instance, if the importer's bank in Italy constitutes deposits within the Bank of Italy, the Italian central bank will credit the German Bundesbank, giving rise to German claims on Italian bank deposits. 'Once the sending NCB has checked the validity of a payment message and the availability of funds or sufficient overdraft facilities, the amount of the payment is debited irrevocably and without delay from the RTGS account of the sending credit institution and credited to the Interlinking account of the receiving NCB' (*ibid.*: 35). The Bundesbank finally credits the German commercial bank, beneficiary of the payment. '[T]he receiving NCB […] credits the beneficiary RTGS account and delivers a positive acknowledgment to the sending NCB or the ECB. Finally, the receiving NCB sends the payment message, through the local RTGS system, to the beneficiary credit institution' (*ibid.*: 35).

The emerging picture of the Eurozone's RTGS system shows a bilateral system in which national banking systems carry out direct transactions between themselves. In this non-system, the European Central Bank plays a minimal role or none at all in settling transactions among member countries. '[W]ith the multi-addressee access in TARGET2, direct participants will be able to authorise branches and other credit institutions belonging to their group, located in EEA [European Economic Area] countries, to channel payments through the direct participant's main account without its involvement, by submitting/receiving payments themselves directly to/from the system. […] The payments will be settled on the account of the direct participant' (*ibid.*: 38).

The RTGS system in the Eurozone lacks a central intermediary that, issuing its own currency as sketched in Table 2, provides a multilateral

service to the banking systems of member countries. This implies that payments between two member countries (their banking systems) are never settled. Payment orders in importing countries give rise to debt acknowledgments in favor of exporting countries. For them to be effective, however, payments should not be made in IOUs. A truly functioning RTGS in the Eurozone should ensure the exchange of commercial products with financial securities through the vehicular use of the currency issued by the European Central Bank. Once this goal is achieved, the identity between exports and imports would be respected, both domestically and globally, thus avoiding the structural indebtedness of net importing countries.

V. Conclusion

This study has sought to contribute to a better understanding of external debt accumulation based on existing statistical information. The present work is an empirical exploration into external debt changes in the East Asian countries of Indonesia, Korea, Malaysia, the Philippines and Thailand, on the one hand, and the Mediterranean countries of Greece, Italy, Portugal and Spain, on the other hand. The Asian group was struck by the Asian crisis of 1997, while the European group of countries was hit by the Great Crisis of 2008. Both groups of countries have generally accumulated external debt liabilities larger than expected, far beyond the levels explainable by current account balances and the changes in total reserves. Comparing the evolution of countries' debts with their current account balances and the change in total reserves of foreign currencies and gold, the first econometric results show two different trends. In the five decades running from 1971 to 2021, debt liabilities in Southern Europe have increased below or beyond twice their expected increases; in East Asia –particularly in Korea, Malaysia, and Thailand– debts have increased below or beyond twice their expected reductions.

The econometric results presented in these pages should become the focus of future investigations. Further data treatment and a better data quality are also needed. Further statistical analysis on capital flows is also required. Still, the current work shows interesting trends that call for increased attention, to be paid by the economic profession and policy makers, on the current flaws of the international payment system.

Based on the existing literature on external indebtedness, this work advocates the creation of a system of real-time gross settlement (RTGS) as the layer of future regional monetary integration in East Asia and in Europe. Clearing Integrated Monetary Areas (CIMAs), founded on a multilateral or centralized payment system managed by a regional, supranational bank or a global one, like the Bank for International Settlements (BIS) or the International Monetary Fund (IMF), would achieve monetary integration through stable exchange rates within each area. The existence of CIMAs would avoid the accumulation of claims, exerted by net exporting countries, on bank deposits in net importing countries. Thus, contrary to what happens today, payments would not be made in debt acknowledgments. Payments would be made in the respect of the identity between commercial and financial sales and purchases, both domestically and globally, avoiding the pathological formation of balance-of-payment discrepancies.

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