

# Current Account Dynamics and Saving-Investment Nexus In a Changing and Uncertain World

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**Abstract:** We re-examine the determinants of current account balances (CAB) and the saving-investment nexus with focus on emerging market and developing economies (EMDEs). A great deal of analyses have been made to shed more light on the behavior of CAB. However, we are in a new age in terms of facing not just economic challenges but also other non-economic challenges such as global climate changes, increasing natural disasters, and wars. We face the need to reexamine the determinants of CAB along with national saving and investment. We first take an event study approach, examining how these variables have evolved historically in the wake of wars, natural disasters, and pandemics. The second is a cross-country panel investigation of CAB, national saving, and of investment. In the presence of global financial instability, EMDEs tend to experience an improvement in CAB and a rise in national saving. A rise in oil prices will increase investment but worsen the CAB. Contractionary monetary policy by the U.S. Federal Reserve Board tends to cause EMDE to lower national saving and thereby worsen CAB. The more frequently a country experiences wars, on average, its CAB tends to improve. When a climatological disaster happens, its CAB and national tends to improve. Geophysical disasters can have significantly positive impacts on all three of CAB, national saving, and investment. A country a currency crisis is accompanied by a slowdown in the economy, which may decrease spending but increase savings.

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## 1. Introduction

In recent years, we have faced many major events, affecting the global economies, politics, and geopolitics. To name a few, climate and environmental challenges have been on the rise in recent decades. The COVID pandemic broke out in 2020, resulting in an economic disaster. In the winter of 2022, while the global economic situation was on the road to full recovery, Russia invaded Ukraine, not only wreaking havoc on the Ukrainian economy but also destabilizing the global economy through soaring commodity prices.

Overall, uncertainty has affected savings and investment behavior, thereby adversely affecting external balances (current account and capital flows) globally. Cross-country and systematic analysis of the determinants of these variables has been somewhat neglected over the past few decades. However, we know from past pandemics that macroeconomic behavior has changed, albeit not as much as during the Black Death, for example (Jorda, Singh, and Taylor (2020) infer a drop in investment and an increase in savings from a decline in real interest rates).

Figure 1 shows the evolution of the world current account balance as of October 2019 and October 2022. In the former, the volatility of the current account balance appears to have decreased since the end of the global financial crisis (GFC) in 2008. The smooth shrinking trend of global current account imbalances appears to be disrupted with the variation of CAB becoming larger around 2021 through 2023. Considering the impacts of the COVID pandemic and the Russian invasion, the behavior of saving and investment, and relatedly the current account, seems likely to be affected by the uncertainty, which is a topic of interest from both an academic and policy perspective.

In this paper, we investigate the impact of external shocks and uncertainties on current account, saving, and investment. For that, we use the following two methods:

1. An event study, focusing on major events (wars, natural disasters, epidemics).
2. A panel analysis of the determinants of CAB, saving, and investment behavior.

The major research questions are:

1. How do CAB behave around the time of high uncertainty, or economic or non-economic calamity? How can we identify the impacts of saving and investment?
2. Can we identify the impacts of uncertainty-related factors on medium-term behavior of CAB, saving, and investment?

In what follows, we first briefly observe the development of CAB, national savings, and investment over a 50-year period. Next, we conduct event study analyses to examine how CAB, national saving, and investment fare when an economy faces external shocks or events that increase the level of uncertainty, such as natural disasters, wars, and financial crises of various types. In Section 3, we conduct a more systematic regression analysis to estimate the determinants of CAB, national saving, and investment. Section 4 augments the regression analysis with variables representing various types of external and global shocks and uncertainties. In Section 5, we will make concluding remarks.

## **2. Trends in Current Account Balances, Saving, and Investment**

### **2.1 Trends in Current Account Balances**

Figure 2 illustrates the medians of CAB for AEs and EMDEs.<sup>2</sup> One characteristic to note is that whether for AEs or EMDEs, CAB tends to worsen around the times when the world experienced major financial crises such as the Latin American debt crisis of 1982, the Asian

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<sup>2</sup> The sample period is from 1970 to 2021.

Financial Crisis of 1997-1998, and the GFC. Except for the GFC, worsening of CAB is followed by an improvement of the balance.

When we compare CAB by regional groupings (Figure 2),<sup>3</sup> we can see that the meddle eastern economies (MNA), many of which are also oil exporters, experienced large CA surplus in the 1970s, early 1980s, 2000s, and early 2010s. These are the times when oil prices rose. Figure 3 shows a consistent picture. Oil importing EMDEs persistently experienced CA deficit while oil exporters experienced large surplus expect for the late 1980s through the 1990s and late 2010s.

Oil exporters do not necessarily represent other commodity exporters. In Figure 5, where the CAB of commodity exporters and of commodity importers are compared<sup>4</sup>, except for the late 2000s and early 2010s, the median of commodity exporters traces that of commodity importers are. In the late 2000s and early 2010s, the prices of many commodities rose, that contributed to worsening of CAB for commodity importing EMDEs.

## **2.2 Behavior of CAB, saving, and investment – Event study analyses**

How does CAB, saving, or investment behave when the economy of concern faces an external shock or an event that increases the level of uncertainty.

We focus on the following shocks or events:

- ☐ Climatological disasters (e.g., wild fires, drought, Glacial Lake Outburst)
- ☐ Biological disasters (e.g., epidemic, insect infestation, animal accident)
- ☐ Geophysical disasters (e.g., earthquake, mass movement, volcanic activity)
- ☐ Wars

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<sup>3</sup> In Figures 3, 4, and 5, the sample is composed only of EMDEs.

<sup>4</sup> The definition of commodity exporters or importers is based on the World Bank's categorization.

- ☐ Currency crisis
- ☐ Banking crisis
- ☐ Debt crisis

The data for climatological, biological, and geophysical disasters are extracted from the EM-DAT: The International Disaster Database, created by the Centre for Research on the Epidemiology of Disasters (CRED).<sup>5</sup> The dummy for wars is provided by the World Bank. The data for currency, banking, and debt crisis is based on Laeven and Valencia (2008, 2012). Then, we look at the behavior of CAB, national saving, investment, and real output growth around the time of a disaster or crisis of concern. We only focus on EMDEs.

Figures 6 through 12 illustrates the mean of CAB, real output growth rates, national saving, or investment in the period from three years before and after the occurrence of a disaster or crisis which happens at time  $t-0$ .<sup>6</sup> The mean of an economic variable of concern is calculated for the sample that only includes the economies that experienced the disaster or crisis of concern in the sample from 1973 through 2018.<sup>7</sup>

Figure 6 shows that the means of CAB, real output growth rates, national saving, and investment. From the figure, we can see that those economies that experienced climatological disasters experience a slight worsening of CAB in year  $t+1$  while their national saving remains constant throughout the sample period. At the time of the occurrence of a climatological disaster, real output growth deteriorates, though in the next two years the growth rates become robust. The investment ratio slightly improves in those years as well. Hence, the small deterioration of CAB

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<sup>5</sup> <https://www.emdat.be/>

<sup>6</sup> When a disaster or crisis occurs over more than one year, the value of an economic variable of concern as of  $t_0$  is the average of the variable over the period of the disaster/crisis situation. The value as of  $t+1$  will be the year after the last year of the disaster/crisis situation.

<sup>7</sup> The data is available for the period from 1970 through 2021. But only the economies that have the data from  $t-3$  though  $t+3$  are included in the sample. Also, only the economies all of whose CAB, national saving, and investment are available are included in the sample.

must be driven by an improvement of domestic absorption.

Figure 7 repeats the same exercise for the occurrences of wars. Once a war breaks out, CAB starts worsening in year  $t+1$  through  $t+2$ , that corresponds to a significant decline in the growth rates in year  $t=0$  through  $t+1$ . Compared with  $t-1$ , both national saving and investment decline somewhat and national saving rises more than investment in  $t+2$ , but although national saving rises, investment also improves, that contributes to a deterioration in CAB in  $t+2$ .

When a geological disaster happens, national saving rises though investment only slightly declines (Figure 8). Geophysical disasters do not affect (national) output growth, probably because the damage of a geophysical disaster tends to be geographically concentrated. In years  $t+2$  and  $t+3$ , the CAB of an economy that experienced a geophysical disaster tends to worsen moderately, that can be experienced by a moderate rise in investment and a constant level of national saving in those years.

Figure 9 shows that biological disasters do not affect CAB or output growth. One notable characteristic is that both national saving and investment rise in years  $t+2$  and  $t+3$  while the former's rise is somewhat steeper. However, CAB does not response to changes in national saving and investment.

Once a currency crisis occurs output growth falls sharply, that also leads to a rise in national saving (Figure 10). After peaking at  $t=0$ , national saving declines in the following two years while investment rises moderately. These changes in saving and investment do not appear to affect CAB.

Banking crisis also involves deterioration of output growth, but the bottom of output growth occurs at year  $t+1$  (Figure 11). While national saving slowly rises in response to banking crisis, investment falls significantly in the crisis occurrence year ( $t=0$ ) till  $t+1$ . Although it recovers from  $t+2$  on, the investment ratio does not go back to the level of pre-crisis level, that contributes to

improving CAB. The underperformance of investment in the post-banking crisis period may be due to persistent credit constraints in the post-crisis period, like what happened in many EMEs that went through banking crises during the Asian Financial Crisis period.

Those economies that experience debt crisis experience negative output growth even before the occurrence of the crisis, and the fall in the growth rate peaks at  $t=0$ . Like in the case of currency crisis, the investment ratio falls significantly during and immediate aftermath of the currency crisis. Although the investment levels starts recovering in  $t+2$ , the investment level does not return to the pre-crisis period. Both the decline in the investment level and moderate rise in national saving lead to a mild improvement in CAB in the post-crisis period.

These visual presentations and interpretation of the development of CAB, saving, and investment focus on the short-term dynamics, and also these graphs do not control for other factors and variables that can affect CAB, national saving, and investment.

In the following sections, we will take a more systematic approach by conducting panel data analysis.

### **3. Systematic Empirical Analysis of CAB, National Saving, and Investment**

#### **3.1 Literature review on the determinants of CAB**

The national income accounting identity states that the current account is identically equal to the gap between national saving and investment. This means that findings relevant to the current account relationship should also be important for saving and investment, and vice versa.<sup>8</sup> That means that the empirical findings of Chinn and Prasad (2003) and subsequent related papers (e.g.,

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<sup>8</sup> Among many papers, for saving, refer to Loayza, Schidt-Hebbel and Serven (2000), Lopez et al. (2000), Aizenman, Cheung, and Ito (2019), and Aizenman and Noy (2013). For investment, Attanasio, et al. (2000) and Mody and Murshid (2005). On the nexus between saving and investment, refer to David, Gonçalves, and Werner (2020).

Chinn, Ito (2022)) as well as the IMF’s External Balance Assessment approach (Phillips, et al. 2013) should be relevant. However, to the extent that common shocks hit saving and investment, factors important to saving and investment individually might be obscured when examining the current account. For instance, measures of financial openness rarely show up as statistically important in current account analyses, but might for saving or investment.<sup>9</sup>

### 3.2 Basic Specification

We rely upon the panel cross-country time series analysis of all available countries (as in Chinn-Ito-Eichengreen (2014) or Chinn-Ito (2022)), viz.

$$y_{it} = \alpha + X'_{it}\beta + \varepsilon_{it} \quad (1)$$

where  $y_{it}$  is CAB, national saving or investment, expressed as a share of GDP).

We attempt to examine the correlation between  $y_{it}$  and four sets of independent variables:

- Fiscal variable (budget balance)
- Demographic variables (youth and elderly dependency ratio)
- Financial development variables (financial deepening, institutional development, financial openness)
- Other control variables (growth, initial net international investment position, terms of trade volatility, relative income)

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<sup>9</sup> On the theoretical debates on the determinants of CAB, refer to Chinn and Ito (2022).



Financial openness is measured using the *KAOPEN* index of Chinn-Ito (2006) and legal/institutional development (*LEGAL*) is measured as the first principal component of law and order, bureaucratic quality, and anti-corruption measures. As for financial development, we measure it with private credit creation as a share of GDP). Net foreign assets as a ratio to GDP (from Lane and Milesi-Ferretti, 2001, 2007, 2017); relative income (to the U.S.) together with its quadratic term; terms of trade volatility; output growth; trade openness (exports plus imports as a share of GDP); a dummy variable for oil exporting countries; and time fixed effects.

Furthermore, to capture any evidence for the saving glut hypothesis, that is, the less developed the financial system, the more likely savings are to be redirected externally, we include in the estimation the interaction terms of financial development, financial openness, and the *LEGAL* variable.

We estimate this model using panel data for 35 industrial and 91 developing countries between 1972 and 2019, using non-overlapping 5-year averages of the data, thereby permitting a focus on medium-term variation in current account balances, rather than short-term, cyclical, behavior. All the variables, except for net foreign assets to GDP, are converted into the deviations from their GDP-weighted world mean prior to the calculation of five-year averages while net foreign asset ratios are sampled from the first year of each five-year panel as the initial conditions.<sup>10</sup> The use of demeaned series controls for rest-of-world effects. In other words, a country's current account balance is determined by developments at home relative to the rest of the world.<sup>11</sup>

A large literature focuses on the contrasting saving, investment and current-account-

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<sup>10</sup> Terms-of-trade volatility (*TOT*), trade openness (*OPN*), and legal development (*LEGAL*) are averaged for each country, i.e., they are time-invariant. The five year periods are 1972-76, 1977-1981, etc.

<sup>11</sup> The data are mainly drawn from World Bank, *World Development Indicators*, IMF, *International Financial Statistics*, and IMF, *World Economic Outlook*. Further detail can be found in the Data Appendix.

balance behavior of industrial and developing countries, often disaggregating further between emerging markets (middle-income countries with relatively extensive access to international capital markets) and other developing countries, pointing out that potential determinants of these outcomes – growth rates, financial development, demographic structure, for example – differ importantly across these groupings. In addition, a number of studies (e.g. Alfaro, et al. 2008; Chinn and Ito, 2007; Ito and Chinn, 2009) have suggested that the impact of these variables and not only their values may differ systematically across these groupings. We therefore estimate separate regressions for AEs, EMDEs, and emerging market economies (EMEs), in addition to the full sample.<sup>12</sup>

### 3.3 Basic findings

Table 1 reports estimates of CAB, national saving, and investment for the full sample and the subsamples of AEs, EMDEs, and EMEs.

The table shows that fiscal balance, i.e., public saving, plays an important role in external balances. A one percentage point increase in the fiscal deficit results in a 0.35 to 60 percentage point increase in the current account deficit, depending on country groups.<sup>13</sup> Among the subsamples, the EMDE sample tends to have the largest magnitude of estimated coefficients, while the AE and EME groups tend to have smaller estimated coefficients though the estimates remain statistically important.

From Table 1-2, we can see that the significantly positive coefficients of fiscal balance are mainly reflecting significantly positive coefficients of fiscal balance in national saving, not so

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<sup>12</sup> Emerging economies are those classified as either emerging or frontier in 1980–1997 by the International Financial Corporation, plus Hong Kong and Singapore.

<sup>13</sup> These estimates are relatively large compared the findings in Erceg et al. (2005), Bussière (2010), Corsetti and Muller (2006), and Gruber and Kamin (2007).

much of investment. According to the estimations of national saving, a one percentage point increase in budget balance would lead to a 0.74 percentage point increase in national saving for industrialized countries and 0.77 for EMDEs. In the investment estimation, the estimate of fiscal balance is significantly positive only for AEs with its estimate small. For the EME group, the coefficient of fiscal balance is significantly negative.

Let us take a closer look at the findings on the impact of the fiscal balance on national savings and discuss them in the context of the Ricardian equivalence. The Ricardian hypothesis predicts that any change in public saving would be offset by the exact same change but with the opposite sign in private saving, thus making the estimated coefficient of budget balances zero. The Ricardian framework can be extended to predict public dissaving would not crowd out private investment, thus making public saving and investment uncorrelated. In fact, for the full sample and the EMDE subsample, the estimate of fiscal balance is found to be insignificant.

Based on these findings, the behavior of most of our sample countries is not consistent with the Ricardian equivalence – public saving does affect national saving.

The estimations provide some evidence consistent with the life-cycle hypothesis. Countries with higher young dependency ratios tend to have lower national saving investment. For AEs and EMEs, higher old dependency ratios also have the same effects on national saving and investment. The findings of the CAB estimations are not much robust, which may be because the impacts of demographical factors in national saving and investment cancel out each other.

Our findings suggest that countries, especially developing ones, with deeper financial markets tend to have higher national saving. We can predict that financial development has either positive or negative impacts on national saving. Agents in a country with more developed financial markets may be able to face more investment opportunities and means, which may encourage more

financial investment, thereby leading to higher national saving.<sup>14</sup>

In countries with well-developed financial markets, agents can cover and share risks more effectively and efficiently. For example, in China, down payments are larger, so more saving is needed to prepare for the purchase of a home. In such an economy, financial markets tend to be less complete. Hence, cash provides safer liquidity, that makes the volume of down payments higher.

We find that greater financial development can have negative impacts on CAB for AEs and EMEs. The negative impact on CAB for AEs is primarily because financial development tends to lead greater investment. For EMEs, the negative impact is driven by the native impact of financial development on national saving.

According to the saving glut hypothesis, the degree of financial openness and the extent of institutional/legal development matters. Our estimations suggest that greater financial openness tends to lead to lower national saving (though not significantly for EMEs). For the full and EMDE samples, countries with more open financial markets tend to experience lower investment. The significantly negative impacts of greater financial openness on CAB are consistent with the greater magnitude of the KAOPEN estimate for national saving than for investment. The negative impact of financial openness on national saving is greater for countries with more developed institutions and legal systems, another consistent result to the saving glut hypothesis. However, the negative interaction effect is also found in the investment estimation. Hence, the interactive effect is nonexistent for the CAB estimation.

Besides the saving glut effects, countries experiencing high economic growth tend to save more and invest more, although the impacts on saving and investment again seem to cancel each

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<sup>14</sup> Mendoza, Quadrini and Rios-Rull model financial development as the increase in the degree of enforcement of financial contracts.

other. The impact of high growth on national saving and investment especially appears to be larger for EMEs.

The other control variables, while not of central importance, largely enter in as expected.

Larger net foreign asset positions, which tend to generate a stronger income account, affect the current account balance positively, as anticipated. The relative income terms, which tend to be jointly, if not always individually, significant, indicate that higher income countries generally have more positive current account balances (capital tends to flow from richer to poorer countries as suggested by the standard neoclassical growth model – see e.g. Lucas 1990). Terms of trade volatility induces precautionary saving and CAB improvement for AEs and EMEs, though the positive impact of TOT volatility on investment is somewhat counterintuitive while the negative impact for AEs and EMEs makes sense. Finally, oil exporting countries have stronger current account balances and national saving, other things equal.

### **3.4 Robustness Tests**

We have conducted the estimations so far by using the simple pooled OLS method (with robust standard errors). One attribute of pooled OLS is that one imposes the restriction that the effect of a change in a given right hand side variable has the same cross-country effect as within-country. That is, if the budget balance were to increase in a given country, for example, the effect over time would be quantitatively the same as between countries. This restriction can be relaxed by using a fixed effects specification. That is, a fixed effect model controls for time-invariant variables or variables that grow only slowly, that yields within impacts of independent variables.

While estimation with fixed effects is effective in capturing unobservable country-specific or systematic effects, estimation with random effects would be more effective when country-specific

effects are non-systematic.

Clearly, all the variables involved in our analysis are to one degree or another endogenous. Hence, one has to worry about simultaneity bias. One particularly plausible source of simultaneity can arise from the possible feedback of the current account balance on government budget balances (through tax receipts or government spending, for instance). We implement two-stage least squares (2SLS) estimation by instrumenting the budget balance variable with selected variables. The instruments include the dummy for the left-wing government (LEFT); military spending as a ratio to GDP (MILEXP); yearly changes in unemployment rates (D\_U); and regional dummies. For each sample, we remove instruments that are found to be insignificant in the first-stage estimation.

Although the purpose of our estimation exercise is to focus on medium-run movements in CAB, national saving, and investment, but one may wonder if the same or more consistent results could be obtained by estimating with annual data, so that we could also examine the dynamics of the variables of our. Hence, we also conduct a robustness check using annual data.

When conducting panel data analysis using annual data, how to properly handle the dynamics of the data in the panel context and how to control for endogeneity can be important issues. As another robustness check, we use the system generalized method of moments (GMM) estimation method. This estimation method allows us to consistently estimate dynamic panels while accounting for joint endogeneity and controlling for potential biases arising from country-specific effects. Hence, we choose the system GMM method over the difference GMM (Arellano and Bond, 1991; Arellano and Bover, 1995; Blundell and Bond, 1998). Last, considering that the time dimension of our panel is larger than the cross-country dimension, an overabundance of moment conditions can lead to an over-identification and downward bias in standard errors. To mitigate

this, we make a finite-sample correction (Windmeijer, 2005) to standard errors.<sup>15</sup>

Here, we conduct estimations by applying fixed effects and 2SLS models to five-year panels, GMM, fixed effect, random effect, and pooled OLS to the annual data for the estimation. In the models with annual data, we also include the first-lag variable of the dependent variable. The estimation results are reported in Tables 2-1, 2-2, and 2-3 for CAB, national saving, and investment, respectively. We only present the robustness check results for the EMDE group. In column (1) of each table, the results of the OLS estimation for EMDE reported Tables 1-1, 1-2, and 1-3 are reproduced for comparison.

Among the different model specifications, the estimate of government budget balance is most persistent. It is significantly positive, except for the 2SLS estimation model, with the magnitude ranging from 0.36 to 0.58. Interestingly, even including the first lag variable does not so much affect the significance of budget balance. The national saving estimation also yields persistently and significantly positive across all the estimation models. For the estimation of investment, when the budget balance variable enters the model statistically significantly, its estimate is negative. Theoretical prediction suggests that the estimate of budget balance should be positive – if a government conducts deficit spending, that can crowd out investment with higher interest rates. However, our findings are not consistent with this prediction.

In all dynamic models with annual data for the three dependent variables, the first-lag variable enters the estimation with significantly positive estimates, suggesting that CAB, saving, and investment are persistent.

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<sup>15</sup> The explanatory variables can be categorized to a vector of endogenous variables (internal instruments) and a vector of exogenous variables. The former includes budget balance, net foreign asset, relative income level and its squared, and financial development. Exogenous instruments include young-age and old-age dependency ratios, financial openness, the interaction of financial openness with legal development and financial development, the interaction between financial development and legal development, TOT volatility, trade openness, oil exporter dummy, and output growth.

Generally, the signs of the estimates appear to be qualitatively consistent. Whether using annual data or five-year panels, fixed effects models yield more statistically significant estimates. That suggests that time variations also contribute to the variances of the three dependent variables.

### **3.5 Other Factors**

Change in labor force

Urbanization

International aids

FDI inflows

The extent to which a country belongs to the USD zone

[Table 3]

## **4. Analyzing the Impacts of Economic and Non-Economic Uncertainties**

### **4.1 Global events**

In the estimations we have had thus far, we included time fixed effects to capture the impacts of global factors. However, time fixed effects do not represent ‘what kind of’ external or global shocks. Here, we redo the regression analyses, replacing the time fixed effects with variables that specifically represent some kind of external or global shock.

We first test to see if global financial instability affects CAB, national saving, or investment. In the estimation in column (1) of Table 4, we use the VIX index from the Chicago Board Options Exchange as a measure of the extent of investors’ risk aversion, and include the index as the maximum level within each five-year panel.<sup>16</sup> The estimation results show that when a severe

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<sup>16</sup> The other explanatory variables are included, but their estimates are not reported in the table to conserve space. We also tested by including the five-year average of the VIX index, and found that the estimation results are intact.



financial instability occurs (which is to be captured by a rise in the VIX index), CAB tends to improve, though both national saving and investment are unaffected. Usually, a severe global financial shock involves capital outflow from EMDEs, that improves CAB. When the (maximal) VIX index is included in the estimation along with other global shocks, its estimate on national saving becomes significantly positive. That may reflect that, facing a rise in financial instability, economic agents would increase precautionary saving.

Oil price movements can exert shocks to the global economy as we experienced in the 1970s, mid-2010, and last few years. When we include the oil price variable (as five-year average) in the estimation, its estimate is insignificant for the CAB estimation, but it is significantly positive in both national saving and investment estimations. However, when the index is included along with other global shock variables, the estimate of oil prices becomes statistically insignificant for national saving while it becomes significantly negative in the CAB estimation. We can interpret these findings as that higher oil prices may worsen the CAB, mainly because they lead to higher investment.

As happened in 2022 and other past events, U.S. monetary policy or expectations on its possible change can have a great influence on the economic behavior of other economies. Hence, we include the U.S. federal fund rate in the estimation. Its estimate for national saving is negatively significant while its estimate for investment is also negatively significant, both of which make economic sense. When other external factors are also included in the estimation, the impact of the U.S. interest rate becomes significantly negative not only for national saving but also CAB, while the estimate for investment becomes insignificant. Thus, we can conclude that a rise in U.S. interest rates has a negative impact on national saving, which in turn leads to a deterioration in CAB.

## 4.2 Wars, disasters, pandemics

Do wars, disasters, and pandemics affect saving and investment? This is a crucial question given what we have experienced from 2020 through 2023.

In Table 4, we augment the regression model with the dummy variables we used in Section 2 that represent war, climatological disasters, biological disasters, and geophysical disasters. Here, we include these dummies as the number of a disaster of concern occurs in each five-year panel. For all three dependent variables, these variables are included individually in columns (1) through (4) and jointly in columns (5) and (6).<sup>17</sup>

According to the estimation results in table 4, the more frequently a country experiences wars in a five year period, on average, its CAB tends to improve, though we do not observe any significant effects in either national saving or investment estimations. One possible explanation for this is that when a war breaks out, capital tends to flow out of the war-torn country. The increase in capital outflow improves CAB.

When a climatological disaster happens, both national saving and investment tend to rise, but the disaster's impact on investment is not robust to inclusion of other disasters. A rise in national saving may be attributed to a rise in precautionary saving. As such, that leads the CAB of the disaster-driven economy to improves as a result.

Countries with biological disasters tend to experience lower levels of national saving and investment. Its estimate is significantly positive for CAB, but is not robust when other disasters are also included in the estimation.

Geophysical disasters are found to have significantly positive impacts on all three of CAB, national saving, and investment. It is interesting to see that a country that experiences more

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<sup>17</sup> Time fixed effects are included in the estimations again.

frequent geophysical disasters tends to increase its investment. That must reflect reconstruction efforts and aids in the immediate aftermath of a geophysical disaster.

### 4.3 Uncertainty

Lastly, we test the impacts of some variables that pertain to uncertainties.

The World Uncertainty Index (WUI) measures the extent of uncertainty for sample countries. it is constructed by counting the frequency of the word “uncertainty” appearing in the Economist Intelligence Unit (EIU) country reports.<sup>18</sup> For our estimation, we use WUI for individual countries instead of WUI Global so as to focus on the extent of uncertainty each individual country faces.

The extent of uncertainty can certainly rise if a country faces a crisis situation. To capture it, we also examine whether the occurrence of currency, banking, and debt crisis can affect the nexus between CAB, national saving, and investment by using the crisis dummies introduced in Section 2. Table 6 reports the estimated coefficients for the WUI and the financial crisis dummies. The WUI is included in the estimation in the same as the VIX was included in a previous estimation. That is, the highest value of the WUI for a country in each five-year panel is used for the estimation.

If a country faces a higher degree of uncertainty, its national saving tends to fall. The estimate is robust even when other uncertainty variables are included in the estimation. This effect is somewhat inconsistent with the behavior of precautionary saving. The impact of uncertainty on investment is found to be negative, but the estimate is not statistically significant.

A country that experiences currency crisis tends to increase national saving. In Figure 10, we saw that a currency crisis is accompanied by a slowdown in the economy, which may decrease spending but increase saving.

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<sup>18</sup> Refer to <https://worlduncertaintyindex.com/> and Ahir, Bloom and Furceri (2022).

## 5. Concluding Remarks

We live in a world of uncertainty, environmental changes, disasters, war, energy crisis, to name a few, affect our economic lives. Understanding how our economic behavior is affected by uncertainty is one way to mitigate the impact of uncertainty. In particular, because small open economies are vulnerable to external shocks, it is important to understand how they respond to uncertainty and adjust their saving and investment behavior. This paper focused on analyzing how economies respond to uncertainty in terms of the saving-investment nexus that constitutes the dynamics of current account.

We first conduct event studies to examine if there is any regularities in the saving and investment behavior in response to major events (wars, natural disasters, epidemics). Second, we implement a panel regression analysis to identify the determinants of current account, saving, and investment behavior, including variables that represent major events.

From the regression exercises, we found interesting results.

When financial instability occurs on a global scale, EMDEs tend to experience an improvement in CAB due to a rise in national saving. A rise in oil prices will increase investment, but worsen net saving, i.e., current account balance. Contractionary monetary policy by the U.S. Federal Reserve Board tends to cause EMDE to lower national saving and thereby worsen CAB. The more frequently a country experiences wars, on average, its CAB tends to improve. When a climatological disaster happens, its CAB and national tends to improve. Geophysical disasters can have significantly positive impacts on all three of CAB, national saving, and investment. A country a currency crisis is accompanied by a slowdown in the economy, which may decrease spending but increase savings.

## **Appendix 1: List of Countries**

## Appendix 2: Data Appendix

We provide below a listing of the mnemonics for the variables used in the analysis, descriptions of these variables and the source(s) from which the primary data for constructing these variables were taken.

<u>Mnemonic</u>	<u>Source*</u>	<u>Variable description</u>
CAGDP	WDI, WEO	Current account to GDP ratio
GOVBGDP	WDI, IFS, WEO	General government budget balance, ratio to GDP
MILSPEND		Military spending, ratio to GDP
PRIVSAVGDP	WDI, WEO	Domestic saving minus budget balance, ratio to GDP
INVGDP	WDI, WEO	Investment, ratio to GDP
NFAGDP	LM	Stock of net foreign assets, ratio to GDP
RELY	PWT	Relative per capita income, adjusted by PPP exchange rates, Measured relative to the U.S., range (0 to 1)
RELDEPY	WDI	Youth dependency ratio (relative to mean across all countries), Population under 15 / Population between 15 and 65
RELDEPO	WDI	Old dependency ratio (relative to mean across all countries), Population over 65 / Population between 15 and 65
YGRAVG	WDI	Average 5-year real GDP growth
TOT	WDI	Terms of trade
OPEN	WDI	Openness indicator: ratio of exports plus imports of goods and nonfactor services to GDP
PCGDP	WBFS	Ratio of private credit to GDP
KAOPEN	CI	Capital account openness
BQ	ICRG	Quality of Bureaucracy
LAO	ICRG	Law and order
CORRUPT	ICRG	Corruption index
LEGAL	Authors' calc.	General level of legal development, first principal component of BQ, LAO, and CORRUPT.

\* These are mnemonics for the sources used to construct the corresponding. CI: Chinn and Ito (2006); DPI2004: ICRG: *International Country Risk Guide*; IFS: IMF's *International Financial Statistics*; LM: Lane and Milesi-Ferretti (2006); OECD: *OECD Economic Outlook Database*; PWT: *Penn World Table*; WBFS: World Bank Financial Structure Database; WDI: *World Development Indicators*; and WEO: *World Economic Outlook*.

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**Table 1-1: Basic Model Current Account B**

	FULL (1)	AE (2)	EMDE (3)	EME (4)
Gov't budget balance	0.542 (0.060)***	0.364 (0.088)***	0.581 (0.081)***	0.273 (0.075)***
NFA (initial cond.)	0.026 (0.005)***	0.016 (0.008)**	0.024 (0.006)***	0.035 (0.006)***
Relative income	0.104 (0.030)***	0.268 (0.072)***	0.095 (0.038)**	0.106 (0.039)***
Relative income squared	-0.032 (0.015)**	-0.101 (0.042)**	-0.029 (0.017)*	0.002 (0.029)
Relative dependency ratio (young)	-0.003 (0.010)	-0.048 (0.018)***	-0.005 (0.014)	-0.018 (0.013)
Relative dependency ratio (old)	0.001 (0.006)	-0.015 (0.014)	0.005 (0.008)	-0.035 (0.012)***
Fin Dev. – PCGDP	-0.011 (0.007)	-0.019 (0.009)**	0.025 (0.027)	-0.050 (0.017)***
Legal	-0.002 (0.004)	-0.004 (0.006)	0.015 (0.010)	-0.016 (0.009)*
Financial Development x legal	-0.006 (0.005)	-0.005 (0.011)	0.014 (0.011)	-0.028 (0.012)**
Financial Openness (KAOPEN)	-0.005 (0.004)	-0.006 (0.005)	-0.013 (0.006)**	0.003 (0.007)
KAOPEN x legal	0.002 (0.001)*	0.012 (0.002)***	-0.001 (0.002)	0.005 (0.002)**
KAOPEN x pcgdp	-0.008 (0.004)*	-0.010 (0.010)	-0.012 (0.006)*	-0.008 (0.007)
TOT volatility	0.116 (0.054)**	0.221 (0.152)	0.107 (0.055)*	0.202 (0.079)**
Output growth, 5-yr avg	-0.066 (0.111)	-0.297 (0.166)*	-0.033 (0.124)	-0.048 (0.099)
Trade Openness	-0.005 (0.006)	0.013 (0.007)*	-0.025 (0.009)***	-0.001 (0.012)
Dummy for 2005-09	0.007 (0.010)	-0.010 (0.013)	-0.002 (0.012)	0.021 (0.016)
Dummy for 2010-14	0.002 (0.010)	0.019 (0.013)	-0.020 (0.012)*	0.004 (0.014)
Dummy for 2015-19	-0.001 (0.009)	0.017 (0.013)	-0.019 (0.011)*	0.012 (0.013)
oil exporting countries	0.015 (0.010)	-0.004 (0.019)	0.030 (0.011)***	0.025 (0.015)*
<i>N</i>	917	278	638	326
Adj. R2	0.46	0.56	0.46	0.52
# of coutries	126	35	91	42

Notes: \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . Point estimates from OLS, heteroskedasticity robust standard errors in parentheses. Time fixed effects are included in the estimation, but only those for the 2002-06, 2007-11, and 2012-16 periods are reported in the table.

**Table 1-2: Basic Model Augmented with Saving Glut Variables, National Saving and Investment**

	National Saving				Investment			
	(1) Full	(2) AE	(3) EMDE	(4) EME	(1) Full	(2) AE	(3) EMDE	(4) EME
Government budget balance	0.717 (0.137)***	0.738 (0.119)***	0.594 (0.082)***	0.172 (0.124)	-0.012 (0.059)	0.239 (0.085)***	-0.042 (0.069)	-0.341 (0.089)***
Net foreign assets (initial)	0.009 (0.007)	0.012 (0.006)*	0.008 (0.005)*	0.023 (0.010)**	-0.010 (0.005)*	-0.006 (0.007)	-0.012 (0.006)**	-0.013 (0.007)*
Relative income	-0.026 (0.040)	0.118 (0.075)	0.015 (0.045)	0.101 (0.055)*	-0.072 (0.030)**	-0.105 (0.078)	-0.050 (0.039)	0.016 (0.046)
Relative income squared	0.003 (0.017)	-0.035 (0.046)	-0.007 (0.016)	-0.058 (0.035)*	0.011 (0.010)	0.040 (0.052)	0.014 (0.012)	-0.056 (0.032)*
Dependency ratio (young)	-0.055 (0.013)***	-0.099 (0.020)***	-0.037 (0.017)**	-0.110 (0.021)***	-0.052 (0.012)***	-0.073 (0.017)***	-0.020 (0.016)	-0.095 (0.018)***
Dependency ratio (old)	-0.007 (0.010)	-0.031 (0.022)	0.000 (0.010)	-0.088 (0.017)***	-0.012 (0.009)	-0.036 (0.016)**	0.005 (0.011)	-0.056 (0.016)***
Financial Develop. (PCGDP)	0.025 (0.011)**	-0.005 (0.010)	0.002 (0.040)	-0.046 (0.022)**	0.036 (0.008)***	0.016 (0.009)*	0.044 (0.031)	-0.006 (0.016)
Legal development (LEGAL)	0.003 (0.005)	-0.002 (0.006)	-0.017 (0.014)	-0.014 (0.012)	0.004 (0.004)	0.002 (0.005)	-0.022 (0.010)**	-0.023 (0.009)**
PCGDP x LEGAL	-0.009 (0.007)	0.002 (0.012)	-0.021 (0.015)	-0.043 (0.014)***	-0.001 (0.005)	0.006 (0.008)	-0.019 (0.012)	-0.033 (0.011)***
Financial open. (KAOPEN)	-0.016 (0.005)***	-0.013 (0.005)***	-0.036 (0.009)***	0.004 (0.007)	-0.009 (0.004)**	-0.003 (0.004)	-0.014 (0.008)*	-0.003 (0.006)
KAOPEN x LEGAL	-0.002 (0.002)	0.021 (0.004)***	-0.009 (0.003)***	0.003 (0.002)	-0.004 (0.001)***	0.006 (0.003)**	-0.009 (0.003)***	-0.007 (0.002)***
KAOPEN x PCGDP	-0.002 (0.007)	-0.012 (0.011)	-0.006 (0.010)	-0.005 (0.009)	0.006 (0.005)	-0.003 (0.006)	0.018 (0.009)**	0.007 (0.007)
TOT volatility	-0.047 (0.081)	0.472 (0.223)**	-0.006 (0.075)	0.221 (0.119)*	-0.124 (0.054)**	0.124 (0.148)	-0.103 (0.058)*	0.278 (0.101)***
Avg. GDP growth	0.590 (0.163)***	0.277 (0.221)	0.736 (0.107)***	1.280 (0.165)***	0.856 (0.118)***	0.808 (0.215)***	0.823 (0.123)***	1.450 (0.131)***
Trade openness	0.018 (0.007)**	0.031 (0.011)***	0.009 (0.012)	0.011 (0.011)	0.015 (0.005)***	0.004 (0.007)	0.028 (0.012)**	0.030 (0.010)***
Dummy for 2005-09	0.020 (0.013)	-0.063 (0.015)***	0.062 (0.017)***	0.075 (0.021)***	0.019 (0.013)	-0.061 (0.016)***	0.077 (0.014)***	0.041 (0.016)**
Dummy for 2010-14	0.025 (0.013)*	-0.051 (0.016)***	0.063 (0.017)***	0.070 (0.020)***	0.029 (0.014)**	-0.077 (0.017)***	0.093 (0.014)***	0.051 (0.016)***
Dummy for 2015-19	0.028 (0.013)**	-0.050 (0.016)***	0.068 (0.016)***	0.078 (0.021)***	0.033 (0.014)**	-0.071 (0.017)***	0.095 (0.014)***	0.050 (0.016)***
Oil exporting countries	0.104 (0.015)***	-0.013 (0.020)	0.120 (0.014)***	0.038 (0.020)*	0.076 (0.011)***	0.013 (0.017)	0.083 (0.013)***	-0.003 (0.017)
Observations	909	278	630	323	919	278	640	326
Adjusted R-squared	0.46	0.60	0.48	0.57	0.27	0.49	0.28	0.53
# of countries	126	35	91	42	126	35	91	42

**Table 2-1: Robustness Checks, EMDE, Current Account Balances**

	Five-year panels				Annual data		
	OLS (1)	Fixed Effect (2)	2SLS (3)	GMM (4)	FE (5)	RE (6)	Pool (7)
National saving ( $t-1$ )				0.365 (0.086)***	0.505 (0.016)***	0.634 (0.014)***	0.634 (0.031)***
Government budget balance	0.581 (0.081)***	0.462 (0.058)***	0.161 (0.165)	0.506 (0.084)***	0.378 (0.026)***	0.351 (0.023)***	0.351 (0.037)***
Net foreign assets (initial)	0.024 (0.006)***	0.010 (0.005)**	0.021 (0.006)***	0.006 (0.007)	-0.002 (0.002)	0.003 (0.001)**	0.003 (0.003)
Relative income	0.095 (0.038)**	0.264 (0.050)***	0.157 (0.052)***	0.024 (0.126)	0.103 (0.025)***	0.024 (0.014)*	0.024 (0.018)
Relative income squared	-0.029 (0.017)*	-0.062 (0.016)***	-0.038 (0.022)*	0.002 (0.031)	-0.022 (0.008)***	-0.006 (0.005)	-0.006 (0.007)
Dependency ratio (young)	-0.005 (0.014)	-0.072 (0.019)***	-0.006 (0.016)	-0.036 (0.026)	-0.038 (0.010)***	0.007 (0.005)	0.007 (0.004)
Dependency ratio (old)	0.005 (0.008)	0.005 (0.016)	-0.000 (0.010)	-0.017 (0.037)	-0.023 (0.011)**	-0.004 (0.005)	-0.004 (0.006)
Financial Develop. (PCGDP)	0.025 (0.027)	-0.076 (0.041)*	0.024 (0.027)	-0.000 (0.019)	0.003 (0.009)	0.000 (0.004)	0.000 (0.004)
LEGAL	0.015 (0.010)		0.017 (0.011)	0.012 (0.008)		0.001 (0.002)	0.001 (0.002)
PCGDP x LEGAL	0.014 (0.011)	0.007 (0.017)	0.020 (0.011)*	-0.009 (0.017)	-0.015 (0.006)***	0.006 (0.005)	0.006 (0.005)
Financial open. (KAOPEN)	-0.013 (0.006)**	-0.009 (0.008)	-0.020 (0.007)***	0.004 (0.005)	0.002 (0.002)	0.000 (0.002)	0.000 (0.001)
KAOPEN x LEGAL	-0.001 (0.002)	0.001 (0.003)	-0.001 (0.002)	-0.001 (0.003)	-0.000 (0.002)	-0.001 (0.001)	-0.001 (0.001)
KAOPEN x PCGDP	-0.012 (0.006)*	-0.015 (0.008)**	-0.016 (0.006)**	-0.016 (0.009)*	-0.004 (0.004)	-0.005 (0.003)*	-0.005 (0.003)*
TOT volatility	0.107 (0.055)*		0.175 (0.064)***	-0.061 (0.050)		-0.063 (0.024)***	-0.063 (0.044)
Avg. GDP growth	-0.033 (0.124)	-0.022 (0.072)	-0.015 (0.135)	0.061 (0.051)	-0.084 (0.025)***	0.026 (0.022)	0.026 (0.026)
Trade openness	-0.025 (0.009)***		-0.019 (0.009)**	-0.021 (0.014)		-0.013 (0.004)***	-0.013 (0.005)***
Oil exporting countries	0.030 (0.011)***		0.017 (0.013)	0.026 (0.014)*		0.013 (0.004)***	0.013 (0.006)**
Observations	638	645	601	2,601	2,672	2,601	2,601
Adjusted R-squared	0.46	0.16	0.42				0.68
# of countries	91	93	89	92	95	92	92
Hansen test (p-value)				1.00			
AR(1) test (p-value)				0.00			
R(2) test (p-value)				0.92			

**Table 2-2: Robustness Checks, EMDE, National Saving**

	Five-year panels				Annual data		
	OLS (1)	Fixed Effect (2)	2SLS (3)	GMM (4)	FE (5)	RE (6)	Pool (7)
National saving ( $t-1$ )				0.644 (0.124)***	0.675 (0.013)***	0.828 (0.010)***	0.828 (0.016)***
Government budget balance	0.594 (0.082)***	0.440 (0.071)***	0.508 (0.222)**	0.264 (0.108)**	0.217 (0.021)***	0.194 (0.019)***	0.194 (0.028)***
Net foreign assets (initial)	0.008 (0.005)*	0.009 (0.006)	0.009 (0.005)	0.006 (0.005)	0.001 (0.002)	0.002 (0.001)	0.002 (0.002)
Relative income	0.015 (0.045)	0.291 (0.061)***	-0.015 (0.058)	0.051 (0.109)	0.071 (0.021)***	-0.008 (0.012)	-0.008 (0.014)
Relative income squared	-0.007 (0.016)	-0.070 (0.019)***	0.007 (0.018)	-0.011 (0.027)	-0.016 (0.006)***	0.001 (0.004)	0.001 (0.006)
Dependency ratio (young)	-0.037 (0.017)**	-0.057 (0.024)**	-0.040 (0.019)**	0.014 (0.031)	-0.010 (0.008)	0.003 (0.004)	0.003 (0.004)
Dependency ratio (old)	0.000 (0.010)	-0.011 (0.019)	-0.001 (0.012)	0.002 (0.029)	-0.000 (0.009)	-0.007 (0.004)	-0.007 (0.005)
Financial Develop. (PCGDP)	0.002 (0.040)	0.010 (0.050)	0.016 (0.040)	0.007 (0.013)	-0.004 (0.008)	0.001 (0.003)	0.001 (0.003)
LEGAL	-0.017 (0.014)		-0.012 (0.014)	0.003 (0.008)		0.005 (0.002)**	0.005 (0.002)**
PCGDP x LEGAL	-0.021 (0.015)	0.006 (0.021)	-0.016 (0.016)	-0.005 (0.015)	0.006 (0.009)	-0.003 (0.004)	-0.003 (0.004)
Financial open. (KAOPEN)	-0.036 (0.009)***	-0.014 (0.009)	-0.036 (0.010)***	-0.004 (0.005)	0.001 (0.002)	-0.002 (0.001)	-0.002 (0.001)
KAOPEN x LEGAL	-0.009 (0.003)***	-0.005 (0.003)	-0.009 (0.003)***	-0.003 (0.002)	-0.002 (0.001)	-0.002 (0.001)*	-0.002 (0.001)**
KAOPEN x PCGDP	-0.006 (0.010)	0.001 (0.009)	-0.005 (0.010)	-0.006 (0.011)	-0.005 (0.004)	-0.002 (0.003)	-0.002 (0.003)
TOT volatility	-0.006 (0.075)		0.027 (0.084)	0.216 (0.042)***		0.209 (0.021)***	0.209 (0.034)***
Avg. GDP growth	0.736 (0.107)***	0.515 (0.087)***	0.760 (0.112)***	-0.025 (0.065)	0.194 (0.022)***	-0.003 (0.019)	-0.003 (0.019)
Trade openness	0.009 (0.012)		0.008 (0.012)	0.000 (0.012)		0.003 (0.003)	0.003 (0.003)
Oil exporting countries	0.120 (0.014)***		0.123 (0.016)***	0.036 (0.014)**		0.018 (0.004)***	0.018 (0.005)***
Observations	630	645	601	2,562	2,619	2,562	2,562
Adjusted R-squared	0.48	0.16	0.49				0.85
# of countries	91	93	89	91	93	91	91
Hansen test (p-value)				1.00			
AR(1) test (p-value)				0.00			
R(2) test (p-value)				0.55			

**Table 2-3: Robustness Checks, EMDE, Investment**

	Five-year panels			Annual data			
	OLS (1)	Fixed Effect (2)	2SLS (3)	GMM (4)	FE (5)	RE (6)	Pool (7)
National saving ( $t-1$ )				0.554 (0.105)***	0.693 (0.014)***	0.822 (0.010)***	0.822 (0.033)***
Government budget balance	-0.042 (0.069)	-0.119 (0.063)*	-0.076 (0.211)	-0.120 (0.076)	-0.091 (0.022)***	-0.050 (0.018)***	-0.050 (0.025)**
Net foreign assets (initial)	-0.012 (0.006)**	0.009 (0.005)*	-0.009 (0.006)	0.000 (0.004)	0.003 (0.002)*	0.000 (0.001)	0.000 (0.002)
Relative income	-0.050 (0.039)	0.088 (0.054)	-0.101 (0.050)**	-0.004 (0.086)	0.013 (0.021)	-0.012 (0.012)	-0.012 (0.011)
Relative income squared	0.014 (0.012)	-0.026 (0.017)	0.028 (0.014)**	-0.002 (0.022)	-0.005 (0.006)	0.002 (0.004)	0.002 (0.004)
Dependency ratio (young)	-0.020 (0.016)	0.038 (0.021)*	-0.032 (0.017)*	0.068 (0.025)***	0.009 (0.009)	-0.000 (0.004)	-0.000 (0.003)
Dependency ratio (old)	0.005 (0.011)	-0.016 (0.017)	-0.002 (0.012)	-0.001 (0.026)	0.007 (0.010)	-0.007 (0.004)	-0.007 (0.004)
Financial Develop. (PCGDP)	0.044 (0.031)	0.087 (0.044)**	0.048 (0.030)	0.003 (0.014)	-0.007 (0.008)	-0.001 (0.003)	-0.001 (0.003)
LEGAL	-0.022 (0.010)**		-0.020 (0.010)*	-0.008 (0.010)		0.003 (0.002)	0.003 (0.003)
PCGDP x LEGAL	-0.019 (0.012)	0.012 (0.019)	-0.016 (0.012)	0.007 (0.017)	0.008 (0.006)	-0.004 (0.004)	-0.004 (0.005)
Financial open. (KAOPEN)	-0.014 (0.008)*	-0.004 (0.008)	-0.017 (0.009)*	-0.008 (0.004)*	-0.001 (0.002)	-0.002 (0.001)*	-0.002 (0.001)*
KAOPEN x LEGAL	-0.009 (0.003)***	-0.008 (0.003)**	-0.011 (0.002)***	-0.003 (0.002)	-0.002 (0.001)*	-0.001 (0.001)*	-0.001 (0.001)*
KAOPEN x PCGDP	0.018 (0.009)**	0.014 (0.008)*	0.017 (0.009)*	0.013 (0.010)	-0.000 (0.004)	0.001 (0.003)	0.001 (0.002)
TOT volatility	-0.103 (0.058)*		-0.083 (0.066)	0.281 (0.047)***		0.253 (0.021)***	0.253 (0.036)***
Avg. GDP growth	0.823 (0.123)***	0.525 (0.077)***	0.818 (0.125)***	-0.031 (0.064)	0.248 (0.021)***	-0.015 (0.019)	-0.015 (0.018)
Trade openness	0.028 (0.012)**		0.027 (0.013)**	0.014 (0.015)		0.006 (0.003)*	0.006 (0.003)*
Oil exporting countries	0.083 (0.013)***		0.086 (0.014)***	0.034 (0.019)*		0.015 (0.003)***	0.015 (0.005)***
Observations	640	645	601	2,593	2,657	2,593	2,593
Adjusted R-squared	0.28	0.05	0.33				0.79
# of countries	91	93	89	92	95	92	92
Hansen test (p-value)				1.00			
AR(1) test (p-value)				0.00			
AR(2) test (p-value)				0.48			

**Table 3: Impacts of Other Variables – EMDE**

<b>(a) Current Account</b>							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Monetary policy rate							
Change in labor force							
Urbanization (% of total population)							
FDI inflow							
Belonging to USD zone							
N							
Adj. R2							
<b>(b) National Saving</b>							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Monetary policy rate	0.076 (0.060)						
Change in labor force		0.280 (0.260)					
Urbanization (% of total population)			-0.035 (0.018)*				
FDI inflow				-0.012 (0.019)			
Belonging to USD zone					0.000 (0.016)		
						0.032 (0.016)*	
							0.389 (0.105)***
N	566	501	461	461	461	461	639
Adj. R2	0.28	0.26	0.39	0.38	0.38	0.39	0.30
<b>(c) Investment</b>							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Monetary policy rate	0.074 (0.059)						
Change in labor force		0.203 (0.300)					
Urbanization (% of total population)			-0.039 (0.021)*				
FDI inflow				-0.052 (0.021)**			
Belonging to USD zone					0.013 (0.033)		
						0.016 (0.027)	
							-0.244 (0.108)**
N	563	501	456	456	456	456	633
Adj. R2	0.34	0.37	0.44	0.44	0.43	0.43	0.35

Note: The other explanatory variables are included, but their estimates are not reported in the table to conserve space.

**Table 4: Impacts of Global Shocks– EMDE**

(a) Current Account				
	(1)	(2)	(3)	(4)
Max VIX in 5-yr period	0.000 (0.000)**			0.001 (0.000)***
Oil price		-0.000 (0.000)		-0.001 (0.000)***
US interest rate			-0.043 (0.089)	-1.262 (0.334)***
N	552	593	647	552
Adj. R2	0.48	0.46	0.43	0.49

(b) National Saving				
	(1)	(2)	(3)	(4)
Max VIX in 5-yr period	-0.000 (0.000)			0.001 (0.001)**
Oil price		0.001 (0.000)***		-0.000 (0.000)
US interest rate			-0.684 (0.134)***	-1.624 (0.530)***
N	545	585	635	545
Adj. R2	0.44	0.45	0.43	0.47

(c) Investment				
	(1)	(2)	(3)	(4)
Max VIX in 5-yr period	-0.000 (0.000)			-0.000 (0.000)
Oil price		0.001 (0.000)***		0.001 (0.000)**
US interest rate			-0.583 (0.117)***	-0.112 (0.427)
N	545	585	641	545
Adj. R2	0.22	0.26	0.26	0.27

Note: Time fixed effects are not included in the estimations. The other explanatory variables are included, but their estimates are not reported in the table to conserve space.



**Table 5: The Impacts of Disasters on CAB, NS, <sup>INV</sup>**

**(a) Current Account**

	War	Climato- logical	Biological	Geophysical	ALL ex, bio.	ALL
	(1)	(2)	(3)	(4)	(5)	(6)
# of war	0.004 (0.001)***				0.003 (0.001)**	0.003 (0.001)**
# of climatological disasters		0.001 (0.000)***			0.001 (0.000)***	0.001 (0.000)***
# of biological disasters			0.002 (0.001)**			0.001 (0.001)
# of geophysical disasters				0.001 (0.000)***	0.000 (0.000)	0.000 (0.000)
N	656	656	656	656	656	656
Adj. R2	0.45	0.46	0.45	0.45	0.46	0.46

**(b) National Saving**

	War	Climato- logical	Biological	Geophysical	ALL ex, bio.	ALL
	(1)	(2)	(3)	(4)	(5)	(6)
# of war	0.002 (0.002)				0.001 (0.002)	0.001 (0.002)
# of climatological disasters		0.001 (0.000)***			0.001 (0.000)***	0.001 (0.000)***
# of biological disasters			-0.001 (0.001)			-0.002 (0.001)*
# of geophysical disasters				0.006 (0.001)***	0.004 (0.001)***	0.004 (0.001)***
N	645	645	645	645	645	645
Adj. R2	0.44	0.46	0.44	0.46	0.47	0.47

**(c) Investment**

	War	Climato- logical	Biological	Geophysical	ALL ex, bio.	ALL
	(1)	(2)	(3)	(4)	(5)	(6)
# of war	0.001 (0.002)				0.000 (0.002)	0.001 (0.002)
# of climatological disasters		0.001 (0.000)***			0.000 (0.000)	0.000 (0.000)
# of biological disasters			-0.002 (0.001)			-0.002 (0.001)**
# of geophysical disasters				0.005 (0.001)***	0.005 (0.001)***	0.005 (0.001)***
N	650	650	650	650	650	650
Adj. R2	0.28	0.29	0.28	0.32	0.32	0.32

Note: The other explanatory variables are included, but their estimates are not reported in the table to conserve space.

**Table 6: The Impacts of Uncertainties on CAB, NS, and INV**

**(a) Current Account**

	Max WUI (1)	Currency (2)	Banking (3)	Debt (4)	All
Max. World Uncert. Index (Indiv.)	-0.018 (0.031)				-0.018 (0.031)
D for currency crisis		0.005 (0.006)			0.007 (0.006)
D for banking crisis			-0.005 (0.007)		-0.005 (0.007)
D for debt crisis				-0.004 (0.009)	-0.006 (0.009)
N	625	656	656	656	625
Adj. R2	0.47	0.45	0.45	0.45	0.47

**(b) National Saving**

	Max WUI (1)	Currency (2)	Banking (3)	Debt (4)	All
Max. World Uncert. Index (Indiv.)	-0.082 (0.047)*				-0.085 (0.048)*
D for currency crisis		0.021 (0.010)**			0.024 (0.010)**
D for banking crisis			0.006 (0.010)		0.004 (0.011)
D for debt crisis				-0.013 (0.012)	-0.019 (0.013)
N	614	645	645	645	614
Adj. R2	0.47	0.44	0.44	0.44	0.47

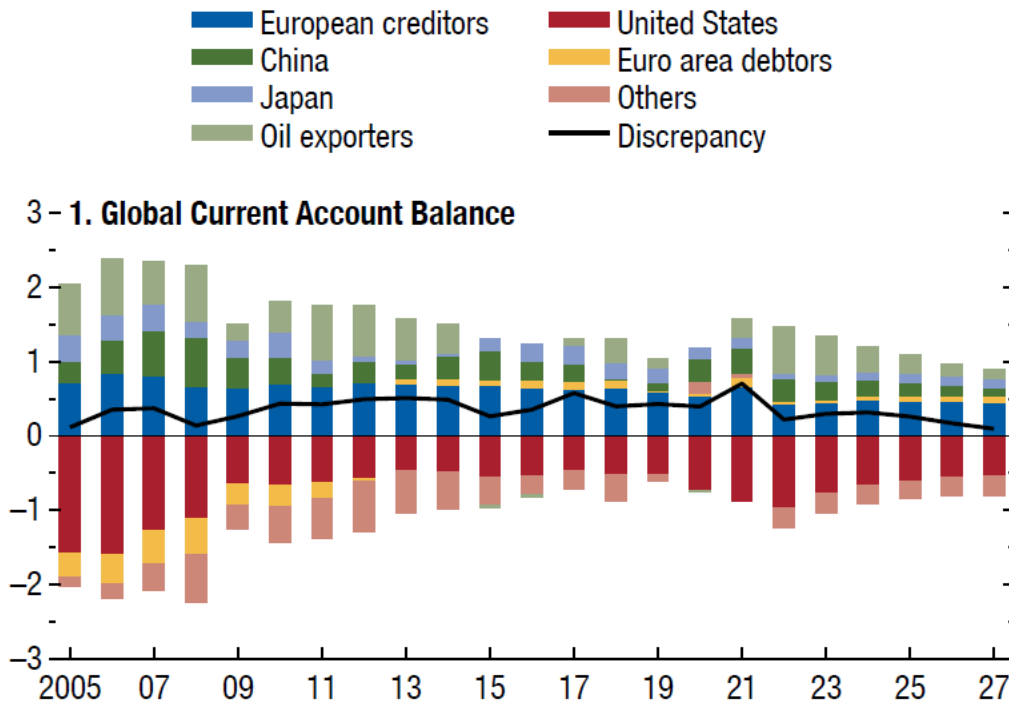
**(c) Investment**

	Max WUI (1)	Currency (2)	Banking (3)	Debt (4)	All
Max. World Uncert. Index (Indiv.)	-0.058 (0.048)				-0.063 (0.047)
D for currency crisis		0.011 (0.009)			0.010 (0.010)
D for banking crisis			0.008 (0.010)		0.005 (0.011)
D for debt crisis				0.008 (0.012)	0.008 (0.012)
N	619	650	650	650	619
Adj. R2	0.31	0.28	0.28	0.28	0.31

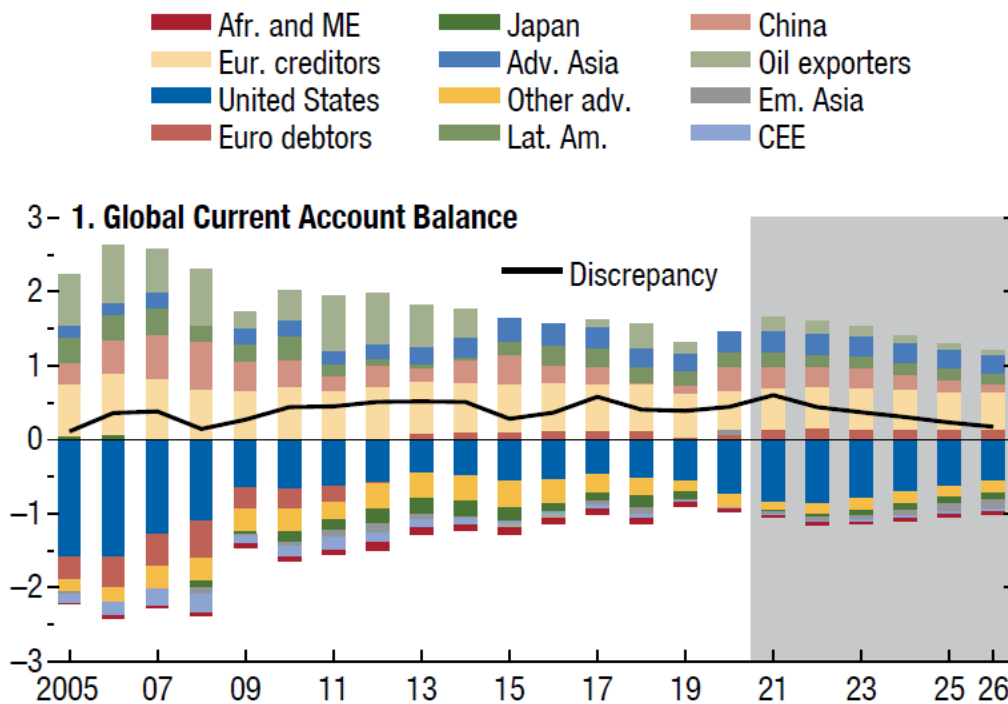
Note: The other explanatory variables are included, but their estimates are not reported in the table to conserve space.

**Figure 1: Global Current Account Balances**

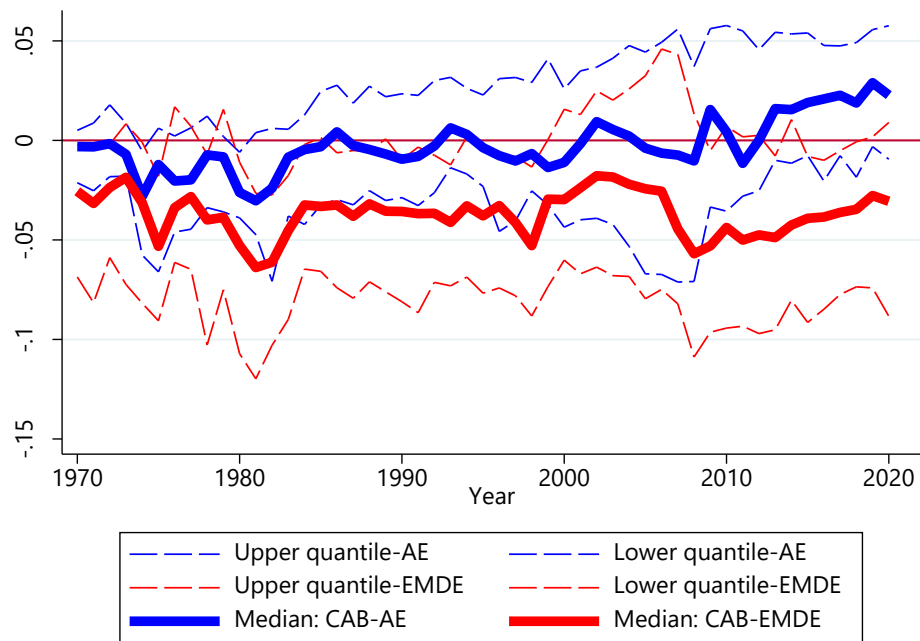
(a) Global current account as of Oct. 2022



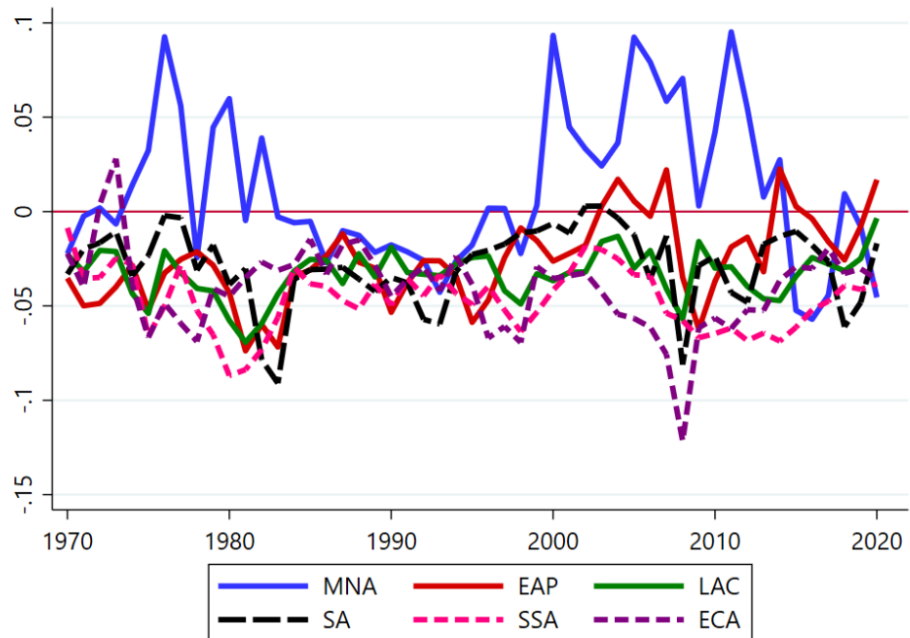
(b) Global current account as of Oct. 2019



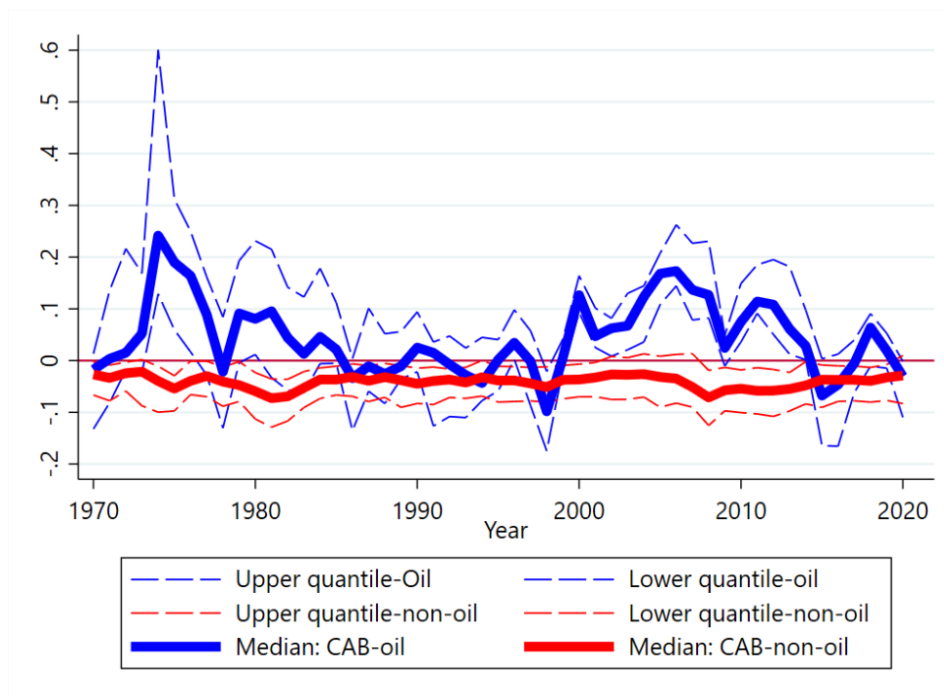
**Figure 2: Trends in CAB**



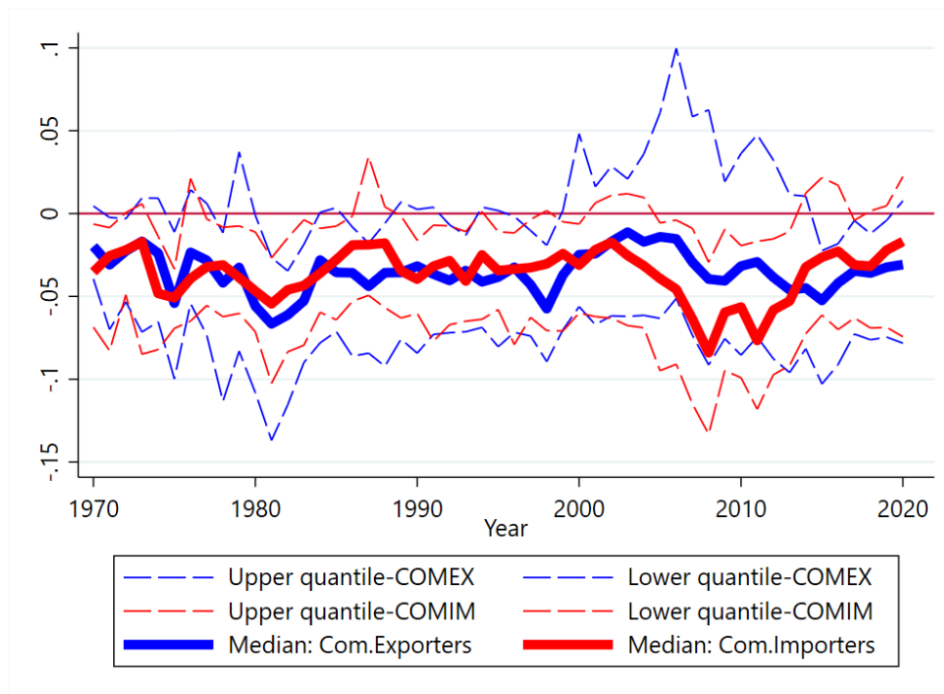
**Figure 3: Trends in current account balance, regional groupings**



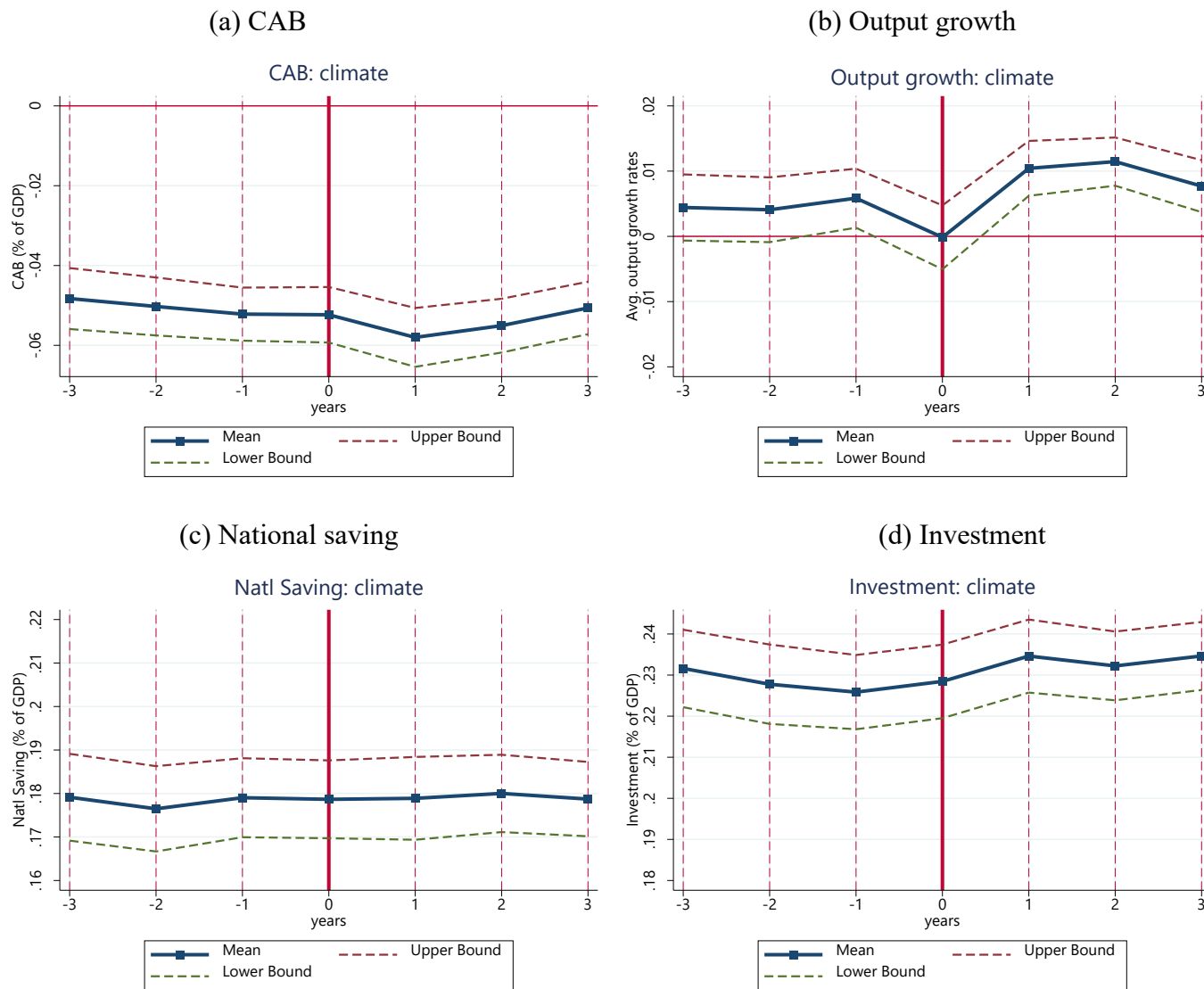
**Figure 4: Trends in current account balance,  
oil exporters vs. non-oil exporters**



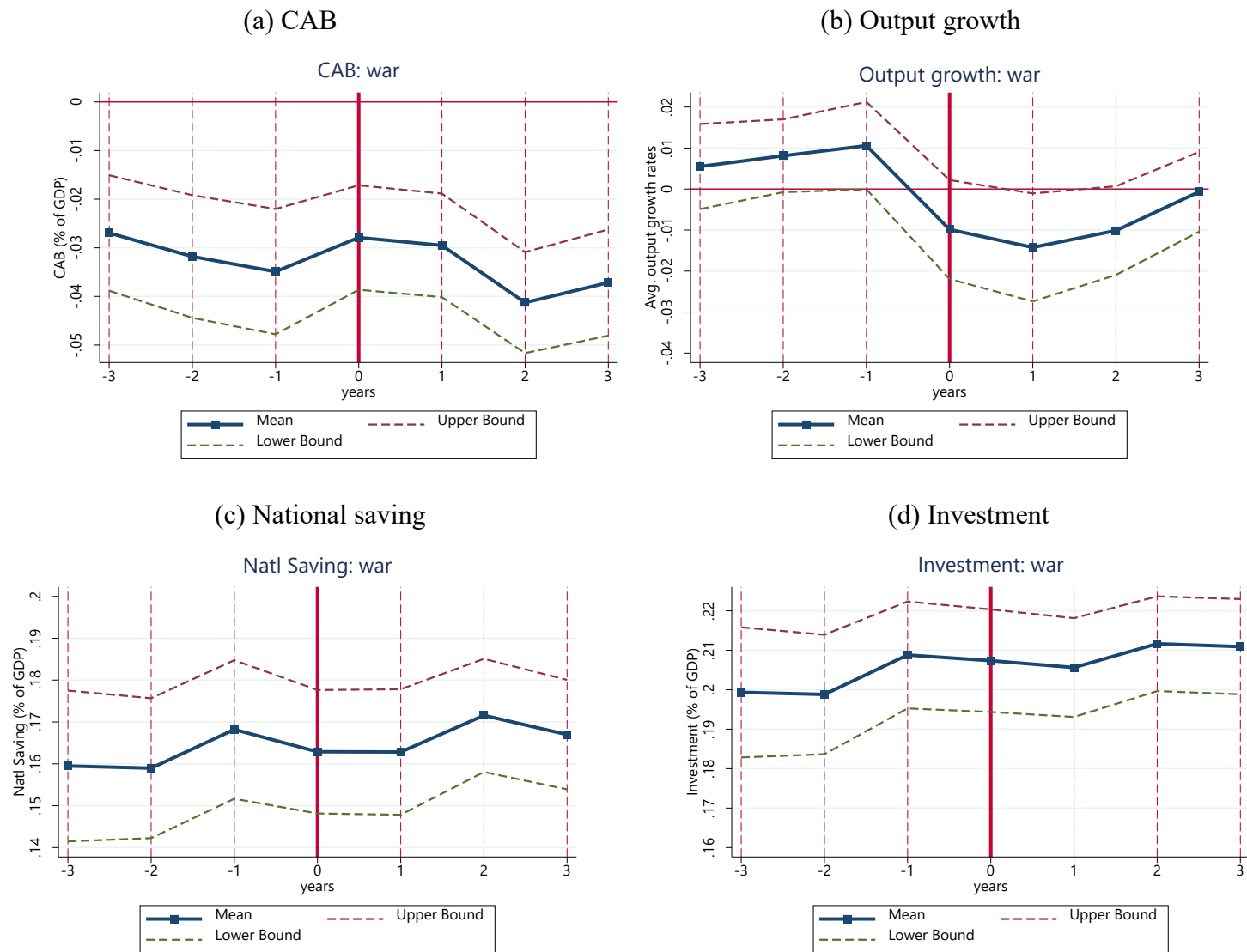
**Figure 5: Trends in current account balance,  
commodity exporters vs. commodity importers**



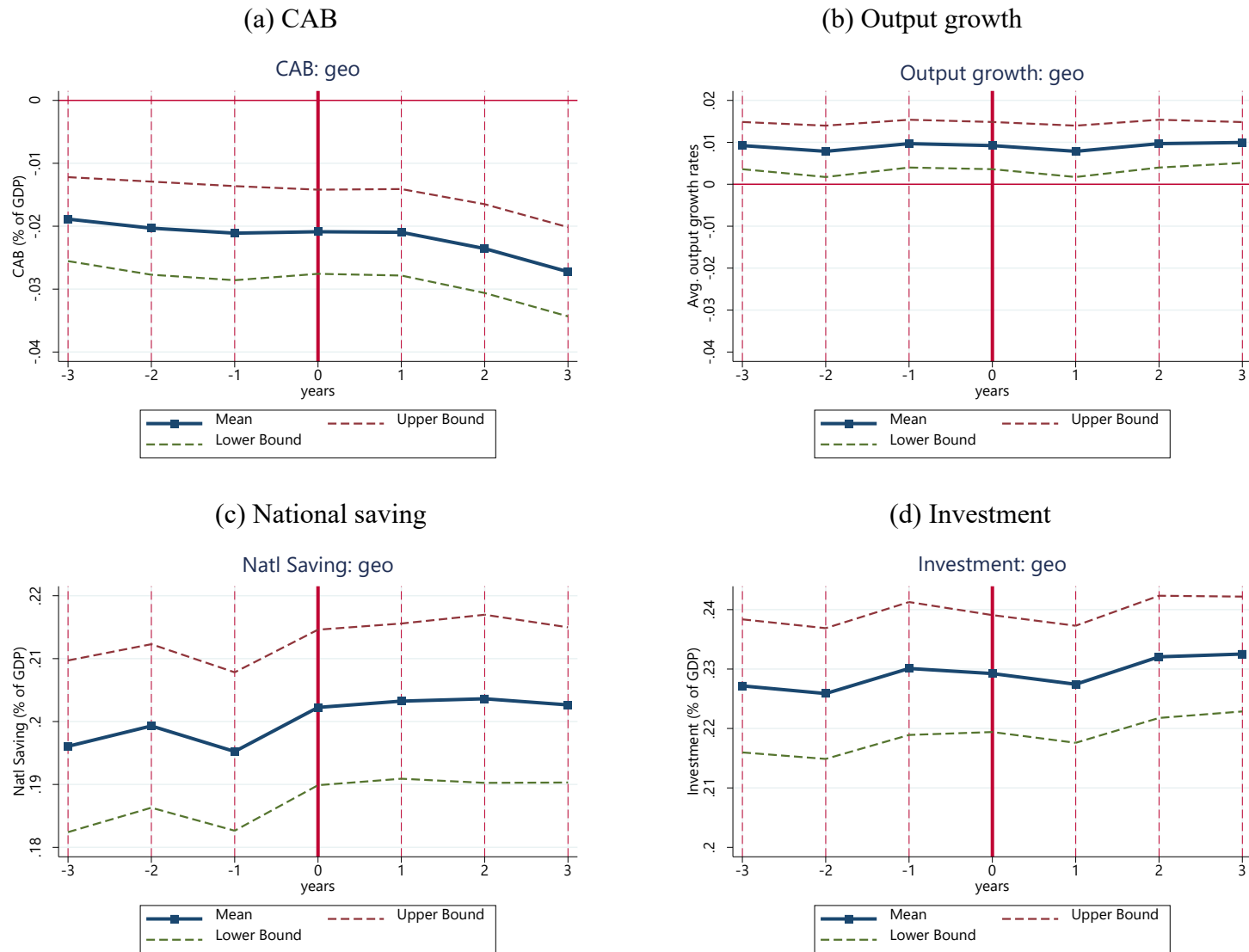
**Figure 6: Impacts of Climatological disasters**



**Figure 7: Impacts of wars**

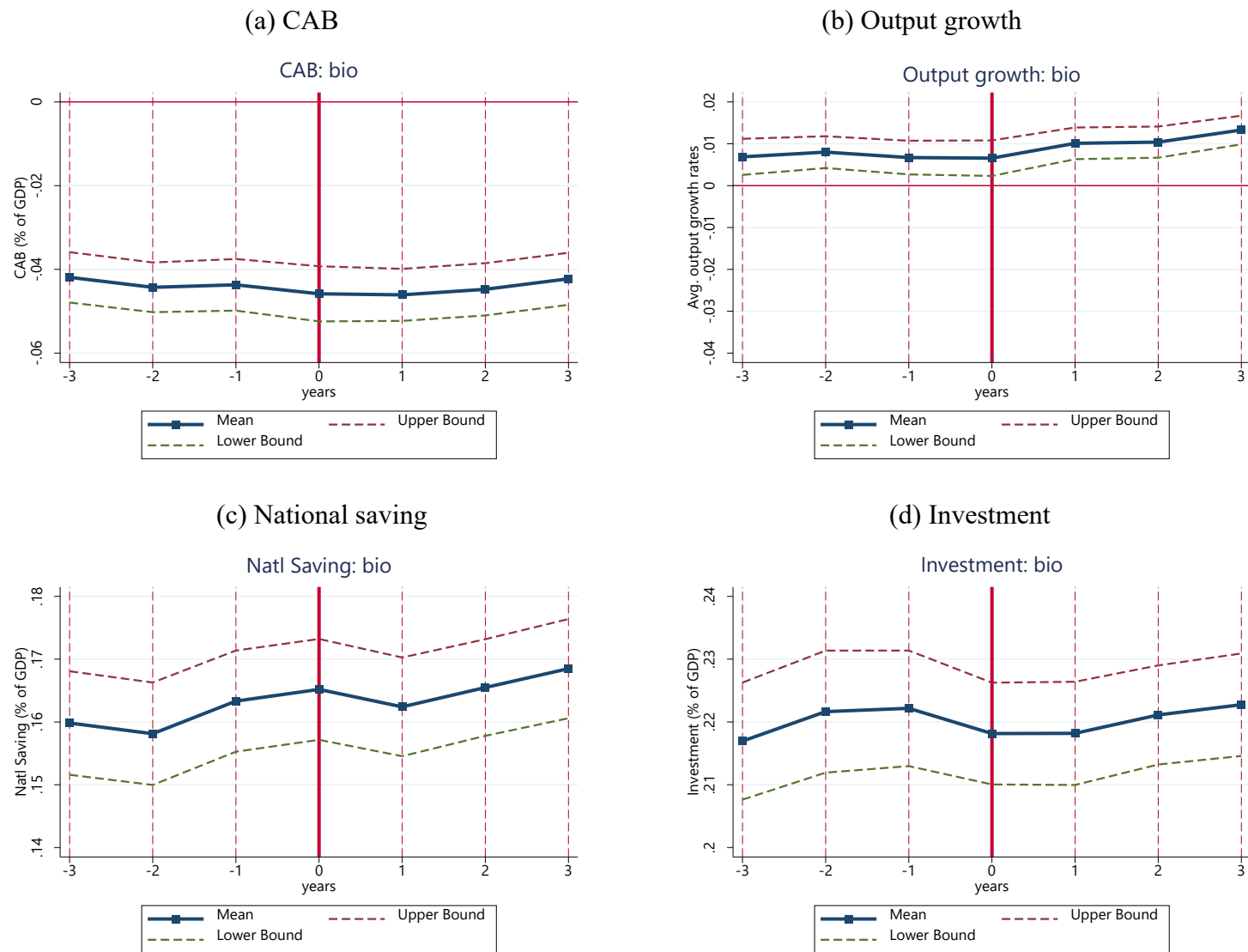


**Figure 8: Impacts of Geophysical disasters**

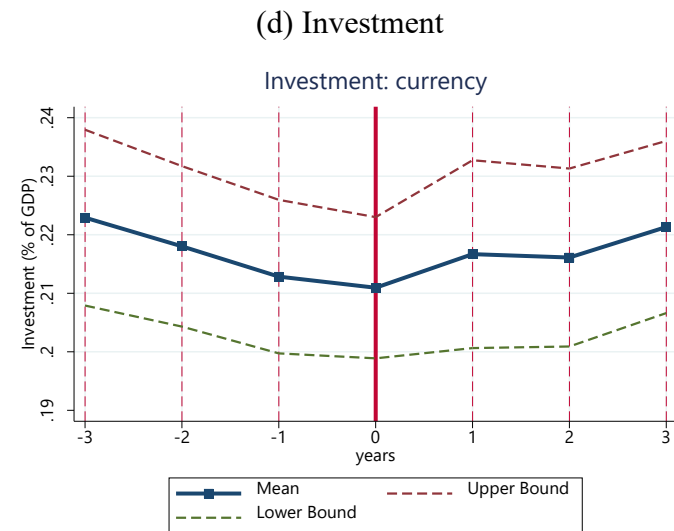
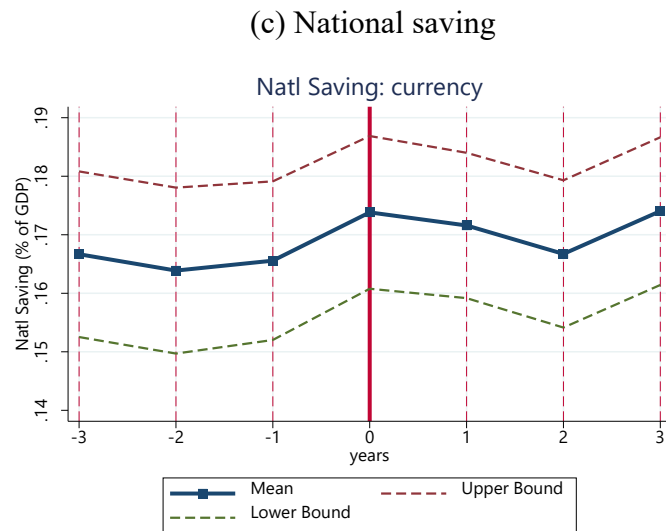
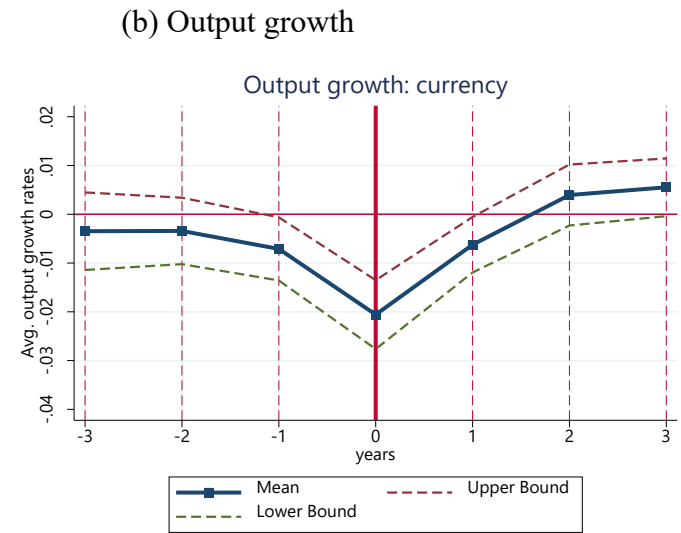
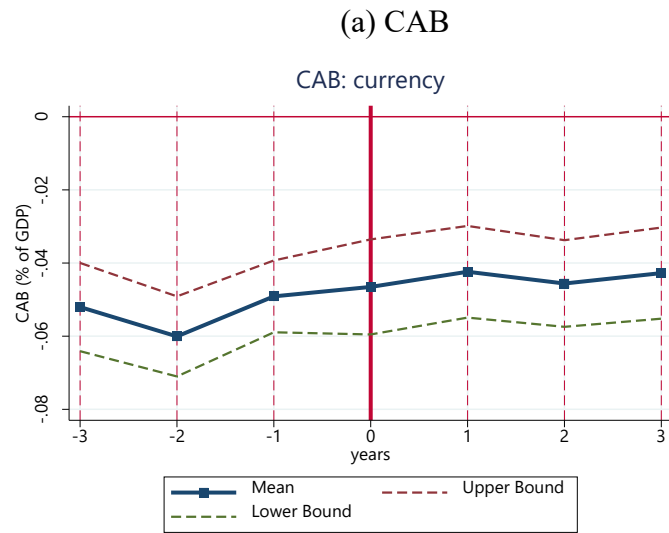




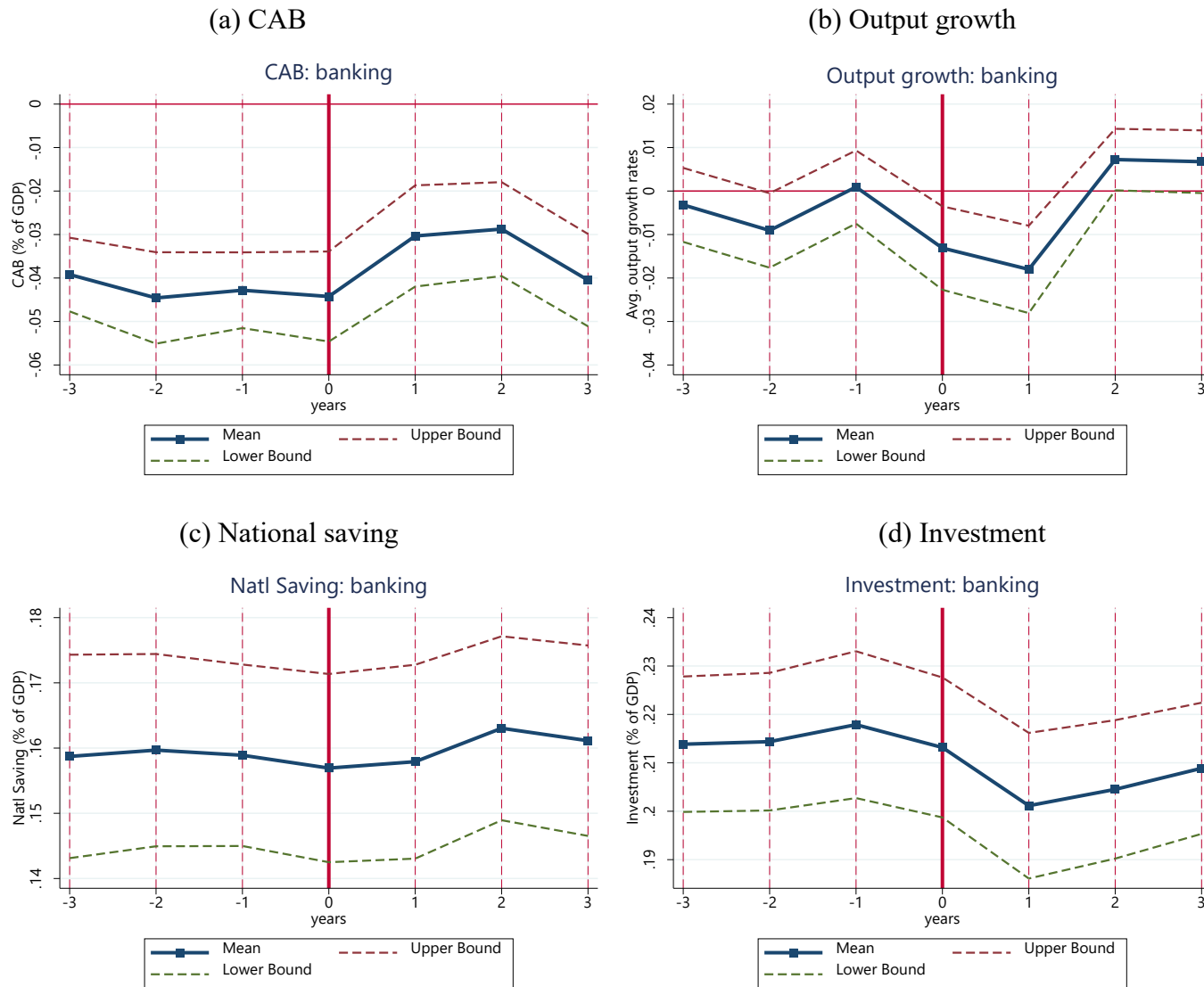
**Figure 9: Impacts of Biological disasters**



**Figure 10: Impacts of Currency Crisis**



**Figure 11: Impacts of Banking Crisis**



**Figure 12: Impacts of Debt Crisis**

