

The Role of Macroeconomic Stability in Current Account Balances

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Abstract

The role of macroeconomic stability in current account balances has not been studied with a calculated index in the literature until now. It is aimed to find out the role of macroeconomic stability in current account balances for the first time in the study. The analysis is completed for the period between 1980 and 2016 for 97 countries. The macroeconomic stability is represented by an index which is created with inflation rate, growth rate, unemployment rate and fiscal balance data of all the countries. It is found out that the macroeconomic stability is one of the important determinants of current account balances like institutional quality and financial development. It has a negative and statistically significant relationships with current account balances for four different country groups which are developing countries, all countries except industrial, all countries except industrial and African countries, and all countries. Results show that the macroeconomic stability is especially important for the developing countries rather than high income countries.

1. Introduction

Global imbalances exceeded 5% of the world GDP in 2008 from 2% in 1996. In 2018 it is still close to 3% of the world GDP (Fig.1). The most important change was the increase of USA's current account deficit. In 1997, it was less than 2% of GDP, and it increased to 5.8% in 2006. The current account deficit of the USA after financial crisis decreased to 2.3% of GDP in 2009. The latest deficit of the USA is still 2.6% in 2019. The USA is running current account deficits since 1992. China is running for 25 years of surpluses since 1994. Foreign trade of China increased quickly after the membership of the country in the World Trade Organization in 2001. Total trade between the USA and China was nearly US\$559 billion in 2019. However, that trade between two countries was unbalanced. USA started to run a huge trade deficit. The USA trade deficit increased to US\$375.6 billion in 2017 just before the start of the trade war. It was only US\$103.1 billion in 2002. It increased up to US\$378 billion in 2018. Eventually, in 2019, it decreased slightly to US\$345.6.

Canada is running current account deficits since 2009. Two developed countries, New Zealand and Australia are running deficits for years. In Europe, the UK, France, Italy, Portugal, and Greece are some of the developed countries that have deficits for some years. Italy and Portugal have started to run surpluses only since 2013. In Far East Asia, Japan (1981-2019), South Korea (1998-2019), Malaysia (1998-2019), and Singapore (1998-2019) had significant surpluses for many years. And in Latin America, Brazil (2008-2019) and Mexico (1988-2019) have significant current account deficits for years.

In appendix table1, it can be seen the current account balances of some of the world economies between 2016 and 2019. When it is checked, in Europe Croatia, Denmark, Estonia, Luxembourg, Netherlands, Norway, Russia, Malta, Germany, Iceland, Italy, Slovenia, Spain, Sweden, Switzerland, Bulgaria had current account surpluses for the following 4 years between 2016 and 2019. Finland, France, Cyprus, Albania, N. Macedonia, Greece, Slovak Republic, United Kingdom, Romania, Serbia, Ukraine had deficits each year during that period. In Latin America Argentina, Honduras, Mexico, Bolivia, Brazil had deficits and only

Guatemala had surpluses between 2016 and 2019. In Africa Morocco, South Africa, Egypt and Uganda are some of the countries that ran deficits during that period. Slovenia, Bulgaria, Japan, S. Korea, Hong Kong, Malta, Luxembourg, Netherlands, Norway, Russia, Singapore, Germany, Thailand, Sweden and Switzerland are the countries with outstanding trade performance with huge current account surpluses.

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2. Macroeconomic Stability

Macroeconomic stability means the balance of key economic variables. There is not a clear distinction between stability and instability. It is the evaluation of different combinations of key economic variables such as growth rate, inflation rate, fiscal balance, unemployment, debt level, current account deficits that give information about the macroeconomic stability. However, huge current account deficits financed by

short-term borrowing, high level of unemployment rate, high level of increasing public debt, two digit increasing inflation rates, negative or declining GDP growth rates show a country's level of macroeconomic instability quite easily. Likewise, positive fiscal balance, current account balance surplus with decreasing debt levels, decreasing inflation rate in one digit, increasing growth rate are the signs of macroeconomic stability (Ames et al., 2001). Empirical studies also show that there is a positive relationship between macroeconomic stability and FDI inflows.

2.1 Macroeconomic Stability and FDI Inflows

In several studies growth rate, inflation rate, total debt divided by GDP, exchange rate are found some of the determinants of FDI inflows representing macroeconomic stability. Onyeiwu and Shrestha (2004) find for the period between 1975 and 1999, the economic growth and the inflation rate are some of the key determinants for FDI inflows for 29 African countries. Kok and Ersoy (2009) find out that for the period between 1976 and 2005, the economic growth in developing countries has a positive significant relationship with FDI flows, and the total debt service/GDP and inflation have a significant negative relationship with FDI inflows for 24 developing countries. Ranjan and Agrawal (2011) study foreign direct investment inflow determinants in BRIC countries: Brazil, Russian Federation, India and China between 1975 and 2009. They find that macroeconomic stability is one of the determinants of FDI. Inflation rate is also used for macroeconomic stability in this study.

Chan et al. (2014) find out that for the short and long term, GDP growth is one of the determinants of FDI flows for China. Shah (2016) studies the determinants of FDI flows for 43 African developing countries between 1990 and 2015. In his study inflation rate and direct exchange rate are used to proxy the macroeconomic stability. The result shows slow, predictable and steady depreciation of exchange rate with low inflation rate increase FDI flows. These studies mainly are completed for the developing countries. If macroeconomic stability is one of the determinants of FDI flows, it has to affect current account balances. If capital inflows increase when macro stability increases current account deficits have to increase as well. This study aims to understand if there is a relationship between macroeconomical stability and current account balances.

2.2 Macroeconomic Stability Index

In literature, there are different ways to define macroeconomic stability. For example, in the field of decentralization, price stability, which is measured by inflation as the proxy, is used for macroeconomic stability (Treisman, 2000; King and Ma, 2001; Neyapti, 2004; Shah, 2006 and Thornton, 2007). Martinez-Vazquez and McNab (2006), Iqbal and Nawaz (2010), suggest using the Misery Index which is the combination of inflation and unemployment to proxy for measuring macroeconomic stability. Misery Index (invented by Arthur Okun) is calculated by taking the sum of the unemployment rate and the inflation rate for a given period. Bilan et al. (2019) use macroeconomic stability index which is the combination of five different factors, in their study.

Macroeconomic stabilization is a very important subject for the policymakers in all countries, irrespective of their level of development. Although the indicators used to evaluate macroeconomic stability, are defined differently, it increases the ability of the countries to prevent and absorb different external and internal shocks and increases economies' capacities to minimize their negative effects. Macroeconomic stabilization is therefore estimated in different ways, depending on the purpose of analysis and the aim of the governments' economic policies. These indicators shouldn't be regarded separately, as they are highly interdependent. For instance, high foreign debt is not necessarily showing low macroeconomic stability alone, if the debt is used for investment purposes which will increase the growth rates. In most of the cases, the macroeconomic stability is evaluated through five basic indicators (Zaman and Drcelic, 2009):

- a) GDP growth rate, showing the overall potential of the economies to sustain a positive economic growth.
- b) The unemployment rate, showing the capacity of the economies' full utilization of the human potential.
- c) The inflation rate is generally measured by the Consumer Price Index (CPI), which shows the purchasing power of the citizens.
- d) The fiscal balance (as a percentage of GDP), showing how the public resources are allocated.
- e) The foreign debt, showing how many financial resources are borrowed from foreign countries.

For macroeconomic stability, there must be a certain growth rate. The unemployment rate must be as low as possible. The inflation rate must be decreased to a level that does not cause any wealth or income redistribution. The government budget must be balanced and if possible, there must be a budget surplus. For our study, we will use a macroeconomic stability index which is combined of sub-indexes of the GDP growth rate index, the unemployment rate index, the inflation rate index and the fiscal balance (as a percentage of GDP) index. The indicators are calculated according to the UN methodology of international comparisons. It is a multi-criteria analysis. The original values are recalculated on a scale between 0 and 1. For translating the original levels into the new scale, any initial point X_i which is between the minimum value of X_{min} and the maximum value of X_{max} , will have a correspondent Y_i on the new scale.

$$Y_i = \frac{X_i - X_{min}}{X_{max} - X_{min}}$$

The original values of the consumer price indexes are generally converted in natural logarithmic terms. The effect of the inflation cannot be considered as linear. Inflation reduction from 400% to 40% is significantly less important than the decrease of inflation from 40% to 4%. Inflation is 10 times lower for

both situations, but 400% and 40% are still high rates of inflation. On the other hand, 4% of inflation can be assumed acceptable (Kolodko, 1993). We agree with this approach and use natural logarithmic terms for inflation.

The scale is reversed for three indicators, as a higher value for these indicators is equivalent to less stabilization. This is valid for the unemployment rate, the fiscal balance, and the inflation rate. For the growth rate the upper limit 10% and the lower limit 0% are selected. For the unemployment rate, the upper limit 25% and the lower limit 4% is selected. For the inflation rate, the upper limit 4.61 (ln 100) and the lower limit 0.69 (ln 2) are selected. For the fiscal balance, the upper limit of 2% and the lower limit of -10% are selected.

Zaman and Drcelic (2009) preferred to use 2.5% inflation for the analysis of the Serbian economy for the lower limit. Since most of the central banks use an inflation target of 2%, we use 2% instead of 2.5%. For the fractional component of unemployment, we use 4% instead of 5%. A lot of countries can reach that level without a high level of inflation. Based on these upper and lower limits sub-indexes are calculated. Finally, by adding up these sub-indexes, the macroeconomic stability index is calculated for all countries. Maximum score for the macroeconomic stability index can be 4. Values will be distributed between 0 and 4.

3. Data And Methodology

It is aimed to find out the role of macroeconomic stability in current account balances the first time in the study. The analysis is completed for the period between 1980 and 2016 of 97 countries. The macroeconomic stability is represented by an index which is created with inflation rate, growth rate, unemployment rate and fiscal balance data of all the countries.

3.1 Data and model

7 macroeconomic variables that are added in the study. They are growth rate, terms of trade, real effective exchange rate, trade openness, net crude oil export, fiscal balance, and the relative income. Total private credit by financial sector is the only financial variable that is used in the study. Macroeconomic and financial variables are added in the study starting from year 1980.

7 institutional variables are included in the study. The legal system and property rights index is available since 1980. Other institutional variables, voice and accountability, political stability and absence of violence, regulatory quality, control of corruption and rule law are available starting from 1996. The sources of the data can be seen appendix table 2.

To find out the role of macroeconomic stability in current account balances, they are regressed onto a set of macroeconomic, financial and institutional variables as well as macroeconomic stability index. First baseline results are estimated only based on the regression of macroeconomic factors. Then institutional and financial factors are included. Eventually, the macroeconomic stability index is added to the base

model. Cheung et al. (2013), Chinn et al. (2014), Altayligil and Çetrez (2020) have similar approaches. It is estimated as:

$$\text{Current Account Balances} = \text{Macroeconomic Variables} + \text{Financial Variable} \\ + \text{Institutional Variables} + \text{Macroeconomic Stability Variable}$$

$$CA_{it} = \alpha_{it} + \beta M_{it} + \mu F_{it} + \theta I_{it} + \pi S_{it} + u_{it}$$

CA represents current account balances, M represents macroeconomic variables, F represents financial variable, I is the set of institutional variables and S is the macroeconomic stability variable.

3.2 Econometric methodology

Panel data analysis method is used to test the role of the macroeconomic stability in current account balances. Annual data is used in the model. Legg et al. (2007) use annual data in their analysis. Chinn and Prasad (2003) use both non-overlapping 5-year averages of the data and annual data as well. We are not just concentrated on the mid-term determinants of current account balances. We also include short term key variables like growth rate, the real effective exchange rate to see the full picture. So specially to capture the short-term effects better our model comprises annual data. The panel data set is unbalanced.

A lot of panel datasets may show significant cross-sectional dependency. Cross-sectional dependency must be checked at the beginning of the analysis. In the study, Paseran test (2004) is used to check the cross-sectional dependency among all the variables. First generation unit root tests must not be used when there is cross-sectional dependency among the variables. It is observed that most of the time that there is cross-sectional dependency among them. Only second-generation root tests consider cross sectional dependency. So, both second generation Paseran (2007) and first-generation Fisher (Choi, 2001) panel root tests are used at the same time whether there is cross-sectional dependency or not.

The results of Paseran (2007) and Fisher (Choi, 2001) unit root tests show that the first differences of all the variables are always stationary. Unlike, most of the time variables themselves are not stationary. OLS models are used with the first differences of the variables. F results confirmed the usage of OLS models. Gruber and Kamin (2005), Chinn and Ito (2007), Cheung et al. (2013) express the variables as deviations from GDP-weighted averages. This is one way for controlling for unobserved heterogeneity (or common errors) by using OLS estimation of transformed models (Gromley and Matsa 2014). The other way to do that is to use the first differences OLS models (Wooldridge, 2002).

So only the first differences of all the variables are stationary and at the same time we want to control for unobserved heterogeneity, we decide to use the first differences OLS model. Autocorrelation and heteroscedasticity for all the models are checked by using White (1980) and Wooldridge (2002) tests,

individually. The only heteroscedasticity is identified in most of the models and OLS models are fixed by Huber (1967), Eicker (1967) and White (1980) robust estimators.

4. Results

Before we add the macroeconomic stability index, we must create a baseline model with macroeconomic, financial and institutional determinants. The first step, estimation results for the macroeconomic variables are shown in Table 1. The last column shows the results of all countries. Institutional and financial variables are included in the model step by step.

4.1 Baseline: Macroeconomic Institutional and Financial Determinants

Baseline model must be created before the estimation of the role macroeconomic stability in current account balances. The growth rate, fiscal balance, terms of trade, real effective exchange rate, trade openness, crude oil export, and financial market development are estimated as the determinants of current account balances for different country groups for the baseline equation (table 1).

Table 1. The Role of Macroeconomic Variables in Current Account Balances (1980-2016)

	Industrial Countries	High Income	Developing Countries	All Countries- Industrial	All Countries- Africa&Indust.	All Countries
Growth Rate	.1459 (2.01)**	-.1032 (-2.01)**	-.0774 (-1.82)*	-.1301 (-3.53)***	-.1768 (-4.13)***	-.1079 (-3.06)***
Fiscal Balance/GDP	.0857 (1.01)	.0421 (0.59)	.2376 (3.78)***	.2187 (3.86)***	.1213 (1.62)	.1969 (3.96)***
Terms of Trade	.0807 (2.66)***	.0283 (2.15)**	.0311 (2.80)***	.0242 (2.49)***	.0155 (1.51)	.0244 (2.57)***
Real Effective Exchange Rate	-.0749 (-1.76)*	-.0513 (-2.76)***	-.0071 (-1.81)*	-.0072 (-1.97)**	-.0411 (-2.79)***	-.0074 (-2.05)**
Trade Openness	-.0642 (-1.54)	-.0266 (-1.48)	-.1111 (-4.78)***	-.0511 (-3.10)***	-.0337 (-1.80)*	-.0495 (-3.15)***
Relative Income	-12.2301 (-0.90)	-10.4258 (-0.83)	-151.4218 (-2.90)***	-37.1469 (-2.31)**	-24.5204 (-1.56)	-18.9631 (-1.36)
Average Net Crude Oil Export/GDP	.2153 (0.72)	.2041 (1.32)	.7576 (5.48)***	.6930 (5.77)***	.8034 (3.62)***	.6881 (5.90)***
R-sq	0.1014	0.0902	0.2644	0.2092	0.1847	0.1874
Number of Observations	336	696	1015	1375	1032	1711

First differences of the variables are used. t- statistics are shown in parenthesis. *, **, *** indicate significance level at 10%, 5%, 1%, respectively. The constants' estimations are not shown.

There is a negative relationship between growth rate and current account balances for five different country groups. When growth rate increases, the current account deficits increase for all country groups except industrial countries. Only for industrial countries, there is a positive relationship which means export supports growth rates for industrial countries. In line with expectations, there is a positive relationship between fiscal balance and current account balance which means, when the public deficit increases, the national savings reduce. There is a positive relationship for the terms of trade. Results support Harberger, Laursen and Metzler (1950) effect.

Real effective exchange rate has a negative sign. Results show an increase in real effective exchange rate leads to an increase in the current account deficit. Results support Marshall Lerner condition. Based on the results, there is a negative relationship between trade openness and the current account balances. Countries, when they are more open to international trade, will run higher current account deficits. But this factor is not significant for industrial and high-income countries groups.

The stage of economic development is found as another determinant of current account balances only for two country groups, developing countries and full sample without industrial countries. When the stage of economic development increases, current account deficit increases for these country groups. These results support the validity of Lucas Paradox for these country groups.

Results show countries with important crude oil export run higher current account balances, this relationship is not significant only for industrial countries and high-income countries. Financial market development is found to have overall negative and statistically significant relationships with current account balances for all country groups (table 2).

Table 2. The Role of Financial Development in Current Account Balances (1980-2016)

	Industrial Countries	High Income	Developing Countries	All Countries- Industrial	All Countries- Africa&Ind.	All Countries
Growth Rate	.07470 (0.79)	-.0997 (-2.33)**	-.0963 (-2.22)**	-.1308 (-3.54)***	-.1714 (-4.03)***	-.1137 (-3.24)***
Fiscal Balance	.07801 (-2.55)	.0735 (0.96)	.2125 (3.41)***	.2146 (3.72)***	.1306 (1.68)*	.1962 (3.83)***
Terms of Trade	.0650 (1.93)*	.0308 (-0.97)**	.0276 (2.42)**	.0225 (2.26)**	.0151 (1.50)	.0222 (2.28)**
Real Effective Exchange Rate	-.0769 (-1.67)*	-.0692 (-4.59)***	-.0070 (-1.74)*	-.0075 (-2.03)**	-.0562 (-3.95)***	-.0075 (-2.05)**
Trade Openness	-.0471 (-0.94)	-.0188 (-0.97)	-.1164 (-4.83)***	-.0530 (-2.98)***	-.0353 (-1.77)*	-.0498 (-2.95)***
Relative Income	-28.7995 (-2.34)**	-17.6522 (-1.89)*	-146.1198 (-2.68)***	-27.6096 (-1.75)*	-12.85 (-0.87)	-27.1591 (-2.63)***
Net Crude Oil Export/GDP	.3338 (0.92)	.2577 (1.65)*	.8041 (5.52)***	.7406 (5.81)***	.8576 (3.65)***	.7349 (5.90)***
Total Private Credit/GDP	-.0289 (-2.55)**	-.0148 (-2.35)**	-.0615 (-2.72)***	-.0199 (-2.49)**	-.0133 (-1.85)*	-.0218 (-3.20)***
R-sq	0.1460	0.1288	0.2811	0.2177	0.1958	0.2055
Number of Observations	285	602	949	1266	951	1551

First differences of the variables are used. t- statistics are shown in parenthesis. *, **, *** indicate significance level at 10%, 5%, 1%, respectively. The constants' estimations are not shown.

4.2 The Role of Macroeconomic Stability

Ben Bernanke's (2005) one of the suggestions is, developing countries must improve their investment climate by continuing to raise macroeconomic stability. Macroeconomic stability index is added to the base model. When macroeconomic stability gets higher more financial capital out of the country is expected to enter the country. As a result, the current account deficits will increase. Negative relationship is expected between the macroeconomic stability index and current account balances for especially the developing countries. Altayligil and Çetrez (2020) find a positive relationship between inflation rate and current account balances for some country groups. They use consumer price index to represent the macroeconomic stability.

Macroeconomic and financial determinants are added to the base model. Institutional determinants are not added in the base model because there is not even one same institutional determinant for more than one country group (appendix table 4). Since the growth rate and macroeconomic stability index are highly correlated growth rate is excluded from the model. There is a negative relationship between macroeconomic stability index and current account balances. Higher macroeconomic stability for all country groups except industrial and high-income countries (table 3) increases the current account deficits. When economic stability gets better, this causes more capital inflow to these countries and ends up with higher current account deficits.

Table 3. The Role of Macroeconomic Stability in Current Account Balances (1980-2016)

	Industrial Countries	High Income	Developing Countries	All Countries - Industrial	All Countries - Africa&Ind.	All Countries
Fiscal Balance	.0353 (0.42)	.0958 (0.215)	.2182 (1.97)**	.2172 (2.42)**	.1616 (1.74)*	.1847 (2.52)**
Terms of Trade	.0710 (2.04)**	.0322 (2.26)**	.0303 (2.00)**	.0244 (1.93)*	.0191 (1.48)	.0248 (2.04)**
Real Effective Exchange Rate	-.0815 (-1.86)*	-.0747 (-2.42)**	-.0631 (-3.04)***	-.0574 (-3.18)***	-.0572 (-2.73)***	-.0583 (-3.38)***
Trade Openness	-.0387 (-0.90)	-.0291 (-1.51)	-.1213 (-3.68)***	-.0451 (-2.08)**	-.0376 (-1.72)*	-.0440 (-2.18)**
Relative Income	-29.7682 (-2.28)**	-19.2670 (-1.94)*	-131.2361 (-1.85)*	-15.5016 (-1.02)	-11.8465 (-0.78)	-20.2233 (-1.99)**
Average Net Crude Oil Export/GDP	.3159 (0.86)	.2155 (0.205)	1.1176 (4.83)***	.8235 (3.83)***	.8182 (3.44)***	.8068 (3.88)***
Total Private Credit/GDP	-.0270 (-2.31)**	-.0153 (-2.38)**	-.0364 (-1.56)	-.0136 (-1.93)*	-.0123 (-1.72)*	-.0185 (-2.87)***
MS Index	1.1204 (1.20)	-.7423 (-1.31)	-.9076 (-1.74)*	-1.5262 (-3.56)***	-1.8100 (-4.11)***	-1.1379 (-2.87)***
R-sq	0.1521	0.1021	0.3087	0.2071	0.1925	0.1904
Number of Observa.	285	578	550	843	753	1128

First differences of the variables are used. t- statistics are shown in parenthesis. *, **, *** indicate significance level at 10%, 5%, 1%, respectively. The constants' estimations are not shown.

When the same regressions are re-estimated using each of the components of the macroeconomic stability index, in order to isolate which factors, drive the results. The test results suggest that unemployment is the most significant contributor among the four variables. It has a statistically significant positive relationship with current account balances for all country groups. The growth rate follows unemployment it has a statistically significant negative relationship with current account balances for all country groups except industrial countries. The inflation rate has no significant relationship.

Fiscal balance has statistically significant positive relationship with current account balances for all country groups except industrial and high-income countries. This is expected when fiscal balance is considered alone because an increase in the public deficit can decrease national savings if there is not a Ricardian offset from private savings and this may end up with a rise of current account deficits. Positive relationship has been found in many studies. As a proxy for the macroeconomic stability index negative sign may be expected. But as seen the first effect is more important when fiscal balance is considered alone.

According to the results, macroeconomic stability is more important for developing countries. Macroeconomic stability is one of the determinants for all country groups except industrial and high-income countries. Better macroeconomic stability causes more capital inflows to these countries and ends up with higher current account deficits. So, to understand the effect better some of the emerging economies, like Poland, Russia, South Africa, Turkey, Brazil, and China are selected because they are some of the largest developing countries with high current account balances.

For the estimation, the equation for all countries except Industrial and African countries is used. The equation can simulate the direction of current account patterns reasonably well for the selected developing countries (Fig. 2). Figures show the time period until 2016 for S. Africa and Turkey, 2014 for Poland, Russia, Brazil and China because of some of the missing annual data.

When the decompositions of the first differences of current account balances are checked, it is seen that for Poland, Russia, Turkey and Brazil macroeconomic stability is one of the key determinants (Fig. 3). It has significant effect on current account balances of these countries. South Africa and China it has relatively less impact. It can be also seen the contribution of the other determinants in detail. Real effective exchange rate and oil export are two other key determinants for these countries.

5. Conclusions

The role of macroeconomic stability in current account balances has not been studied with a calculated index in the literature until now. It is aimed to find out the role of macroeconomic stability in current account balances the first time in the study. The analysis is completed for the period between 1980 and 2016 for 97 countries. The macroeconomic stability is represented by an index which is created with inflation rate, growth rate, unemployment rate and fiscal balance data of all the countries. It is found out that the macroeconomic stability is one of the important determinants of current account balances. It has a negative and statistically significant relationships with current account balances for four different country groups. Results support that the macroeconomic stability is especially important for the developing countries rather than high income countries.

The main aim of the study is to understand the role of macroeconomic stability on current account balances. The macroeconomic stability index is created and calculated for each country individually. For the first time, macroeconomic stability which is represented by a new index is added to the study. Macroeconomic stability is discussed by Bernanke (2005) as one of the potential determinants of current account balances. Macroeconomic stability which is represented with an index in the study, is found to have statistically significant relationships with current account balances for all the country groups except industrial countries and high income countries with negative signs. Higher macroeconomic stability increases the current account deficits. When economic stability gets better, this causes more capital inflows to these countries and ends up with higher current account deficits. It is also seen that for Poland, Russia, Turkey and Brazil macroeconomic stability is one of the key determinants of current account balances. South Africa and China, it has relatively less impact. It is found out that like institutional quality and financial development macroeconomic stability is one of the key determinants of current account balances especially for the developing countries.

Declarations

Acknowledgments

Not applicable.

Authors' contributions

MC and YA agreed on the content of the study. MC collected all the data for analysis. MC and YA agreed on the methodology. MC completed the analysis based on agreed steps. Results and conclusions are discussed and written together. Both authors read and approved the final manuscript.

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Availability of data and materials

The datasets used and analysed during the current study are available from the corresponding author on request.

Competing interests

The authors declare that they have no competing interests.

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Appendix

Appendix Table 1. Current Account Balances of the World Economies (2016 – 2019) (%GDP)

Years	Country	CAB	Country	CAB	Country	CAB	Country	CAB
2016	Germany	8,51	Singapore	17,64	Bolivia	-5,62	Romania	-1,39
2017		7,84		16,26		-4,93		-2,79
2018		7,42		17,18		-4,52		-4,35
2019		7,15		16,97		-3,33		-4,55
2016	Greece	-1,67	Slovak Rep.	-2,71	Brazil	-1,35	Serbia	-2,93
2017		-1,77		-1,92		-0,73		-5,26
2018		-2,86		-2,61		-2,20		-4,86
2019		-1,40		-2,86		-2,69		-6,88
2016	Hungary	4,59	Slovenia	4,83	Bulgaria	3,27	South Africa	-2,82
2017		2,31		6,15		3,60		-2,55
2018		0,09		5,69		5,28		-3,63
2019		-0,77		6,56		4,04		-3,04
2016	Iceland	7,71	Spain	3,19	China	1,80	Thailand	10,51
2017		3,79		2,71		1,58		9,63
2018		3,08		1,92		0,18		5,62
2019		5,81		1,99		0,99		6,97
2016	Ireland	4,77	Sweden	3,51	Egypt	-6,16	Turkey	-3,11
2017		1,01		3,08		-3,37		-4,76
2018		10,69		1,74		-3,07		-2,69
2019		-9,36		3,92		-3,37		1,15
2016	Israel	3,52	Switzerland	9,86	Fiji	-3,67	Uganda	-2,88
2017		2,32		6,42		-6,69		-4,84
2018		2,50		8,21		-8,47		-7,02
2019		3,56		12,26		-12,58		-6,78
2016	Italy	2,58	UK	-5,26	Georgia	-12,45	Ukraine	-1,44
2017		2,62		-3,49		-8,05		-2,18
2018		2,47		-3,85		-6,78		-3,34
2019		2,94		-3,78		-5,08		-0,

Appendix Table 1. (cont.) Current Account Balances of the World Economies (2016 - 2019)
(%GDP)

Years	Country	CAB	Country	CAB	Country	CAB	Country	CAB
2016	Argentina	-2,71	Japan	4,00	USA	-2,29	Guatemala	0,96
2017		-4,85		4,17		-2,26		1,12
2018		-5,25		3,55		-2,39		0,81
2019		-0,77		3,63		-2,33		2,42
2016	Australia	-3,40	S.Korea	6,53	Uruguay	0,59	Honduras	-2,61
2017		-2,69		4,63		0,70		-0,76
2018		-2,04		4,50		0,09		-5,34
2019		0,51		3,65		0,75		-0,65
2016	Austria	2,73	Latvia	1,43	Cyprus	-4,13	India	-0,53
2017		1,53		0,99		-5,00		-1,44
2018		2,37		-0,61		-4,27		-2,42
2019		2,62		-0,52		-6,74		-0,94
2016	Belgium	0,56	Lithuania	-0,80	Hong Kong	3,95	Indonesia	-1,82
2017		1,23		0,97		4,58		-1,59
2018		-1,35		1,53		3,74		-2,94
2019		-1,23		4,24		6,21		-2,72
2016	Canada	-3,09	Luxembourg	4,87	Malta	3,80	Kazakhstan	-5,92
2017		-2,81		5,20		10,59		-3,06
2018		-2,51		4,70		11,10		-0,12
2019		-1,97		4,35		9,71		-3,61
2016	Croatia	2,21	Netherlands	8,03	Afghanistan	-12,96	N.Macedonia	-2,90
2017		3,80		10,81		-16,31		-0,86
2018		1,69		10,84		-20,00		-0,20
2019		2,41		10,21		-19,89		-2,78
2016	Czech Rep.	1,55	New Zealand	-2,11	Albania	-7,59	Mexico	-2,26
2017		1,46		-2,71		-7,54		-1,77
2018		0,49		-3,71		-6,67		-1,88
2019		-0,35		-2,88		-7,63		-0,19
2016	Denmark	7,76	Norway	4,00	Angola	-3,05	Morocco	-4,05
2017		7,80		4,57		-0,52		-3,35
2018		6,97		7,17		7,30		-5,26
2019		7,92		3,98		5,43		-4,14
2016	Estonia	1,67	Poland	-0,52	Armenia	-2,06	Pakistan	-2,58
2017		2,69		0,02		-2,99		-5,31
2018		1,99		-0,99		-9,35		-6,00
2019		2,20		0,47		-8,18		-2,57
2016	Finland	-0,74	Portugal	1,17	Azerbaijan	-3,60	Paraguay	3,62
2017		-0,68		1,38		4,12		3,11
2018		-1,66		0,38		12,84		-0,17
2019		-0,77		-0,10		9,08		-1,17
2016	France	-0,49	Russia	1,92	Bangladesh	0,42	Philippines	-0,38
2017		-0,63		2,06		-2,40		-0,65
2018		-0,68		6,81		-2,77		-2,53
2019		-0,68		3,80		-1,02		-0,12

Appendix Table 2. Sources of the Data

Variables	Number of Observations	Data Sources
Dependent Variables		
1 Current Account Balances/GDP (%)	3239	World Bank
Macroeconomic Determinants		
2 Growth Rate (%)	3471	World Bank
3 Real Effective Exchange Rate	3501	Bruegel Economic Think Tank
4 Fiscal Balance/GDP (%)	2617	World Bank
5 Trade openness (Ex+Im) / GDP (%)	3409	World Bank
6 Net Crude Oil Export/GDP (%) *	3119	EIA, World Bank
7 Terms of Trade	2614	World Bank
8 Relative Income (US=1)	3495	World Bank
Macroeconomic Stability Determinant		
9 Macroeconomic Stability Index *	2057	World Bank
Financial Determinant		
10 Total Private Credit/GDP (%)	2938	World Bank
Institutional Determinants		
11 Legal System and Property Rights Index	1933	Fraser Institute
12 Political Constraint (Polcon V) Index	3144	Wharton Management. Faculty
13 Voice and Accountability Index	1897	World Bank
14 Control of Corruption Index	1897	World Bank
15 Political Stability and Absence of Violence Index	1897	World Bank
16 Regulatory Quality Index	1897	World Bank
17 Rule of Law Index	1897	World Bank

EIA: U.S. Energy Information Administration, * Calculated Values.

Appendix Table 3. Country List:

High-income Countries
Argentina, Australia, Austria, Belgium, Canada, Chile, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, S. Korea, Latvia, Lithuania, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Russia, Singapore, Slovak Republic, Slovenia, Spain, Swiss, Switzerland, United Kingdom, United States of America, Uruguay, Venezuela, Cyprus, Hong Kong, Macao, Malta.
Developing Countries
Afghanistan, Albania, Algeria, Angola, Armenia, Azerbaijan, Bangladesh, Bolivia, Botswana, Brazil, Bulgaria, Cameroon, Chad, China, Democratic Republic of Congo, Egypt, Ethiopia, Fiji, Gabon, Georgia, Ghana, Guatemala, Haiti, Honduras, India, Indonesia, Iran, Jordan, Kazakhstan, Kenya, Kirghizstan, North Macedonia, Madagascar, Malaysia, Mexico, Morocco, Mozambique, Nepal, Nicaragua, Pakistan, Paraguay, Peru, Philippines, Romania, South Africa, Serbia, Sudan, Thailand, Tunisia, Turkey, Uganda, Ukraine, Zimbabwe.
Industrial Countries
Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Holland, New Zealand, Norway, Portugal, Spain, Sweden, Swiss, UK, USA.

Appendix Table 4. The role of Institutional Quality in Current Account Balances (1996-2016)

	Industrial Countries	High Income	All Countries- Africa&Industrial
Growth Rate	.1157 (1.28)	-.0547 (-1.16)	-.1137 (-2.24)**
Fiscal Balance	.0816 (0.83)	.0692 (0.88)	.2129 (2.15)**
Terms of Trade	.0478 (1.36)	.0241 (1.89)*	.0024 (0.22)
Real Effective Exchange Rate	-.0682 (-1.38)	-.0405 (-1.42)	-.0594 (-2.11)**
Trade Openness	-.0438 (-0.86)	-.0181 (-0.87)	-.0476 (-1.92)*
Relative Income	-33.4343 (-2.57)**	-14.8623 (-1.50)	5.1322 (0.35)
Average Net Crude Oil Export /GDP	.5410 (1.43)	.2229 (1.34)	.8993 (3.45)***
Total Private Credit/GDP	-.0345 (-2.87)***	-.0163 (-2.35)**	-.0173 (3.45)**
Regularity Quality		-2.6331 (-2.04)**	
Rule of Law	-5.3279 (-2.13)**		
Control of Corruption			-2.0441 (-1.65)*
R-sq	0.1947	0.0839	0.2015
Number of Observations	255	498	642

First differences of the variables are used. t- statistics are shown in parenthesis. *, **, *** indicate significance level at 10%, 5%, 1%, respectively. The constants' estimations are not shown.

Figures

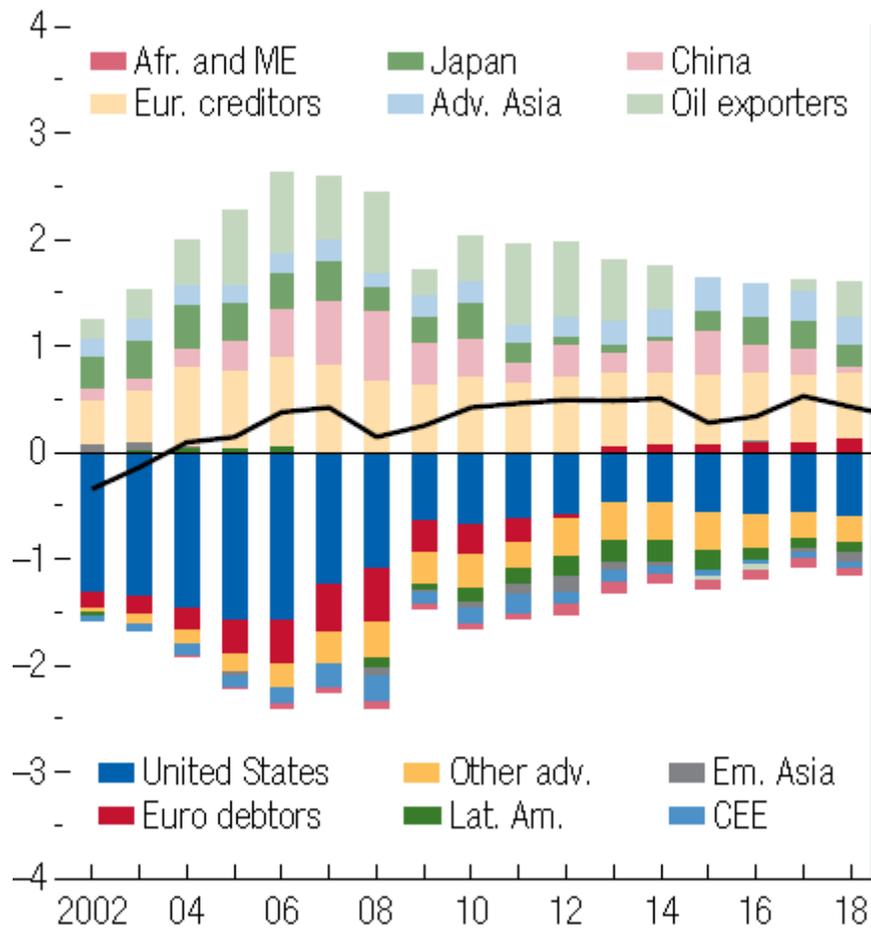


Figure 1

Global Current Account Balance (Percent of world GDP) Source: IMF World Economic Outlook Report 2019 October

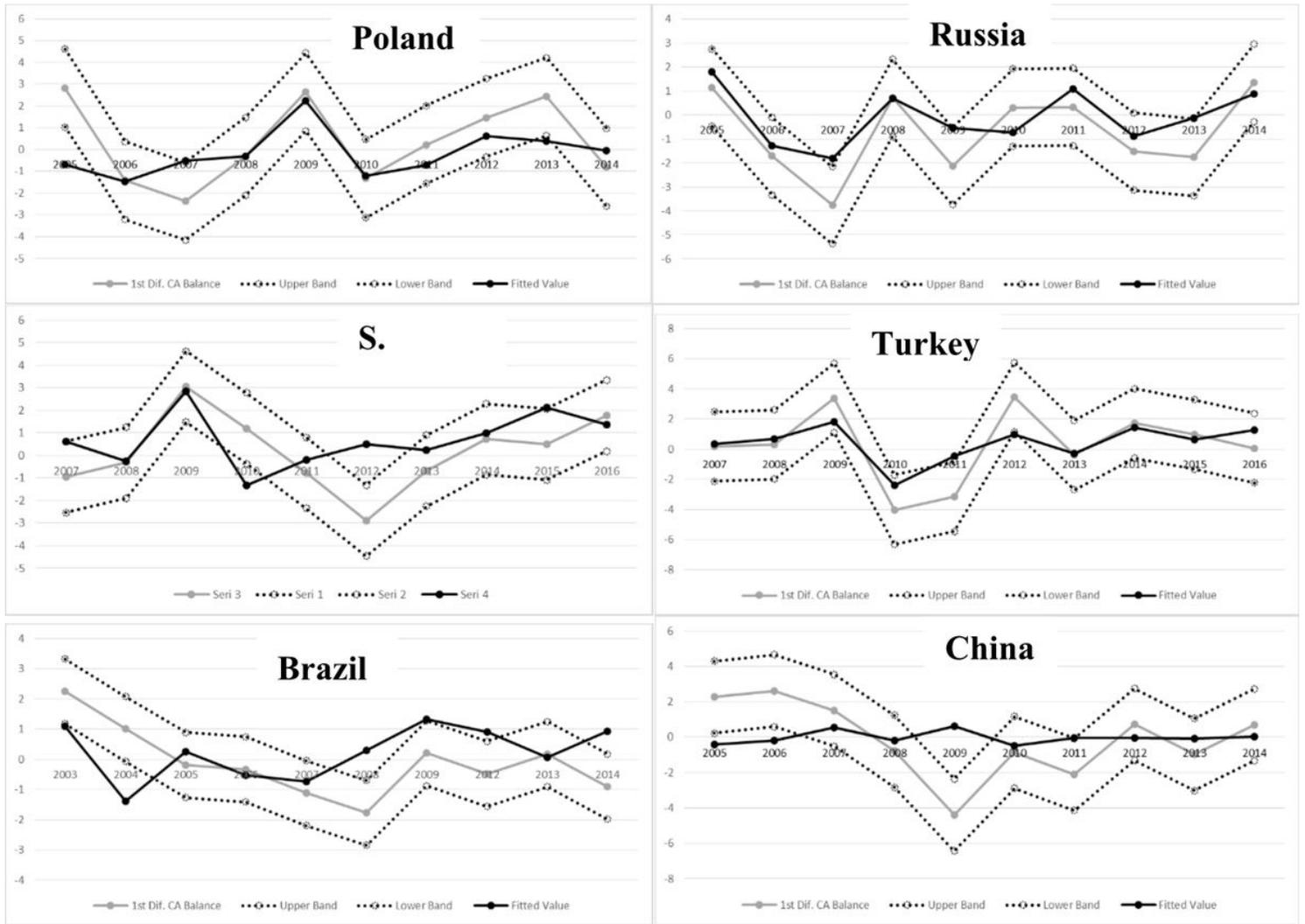


Figure 2

Predicted First Differences of Current Account Balances.

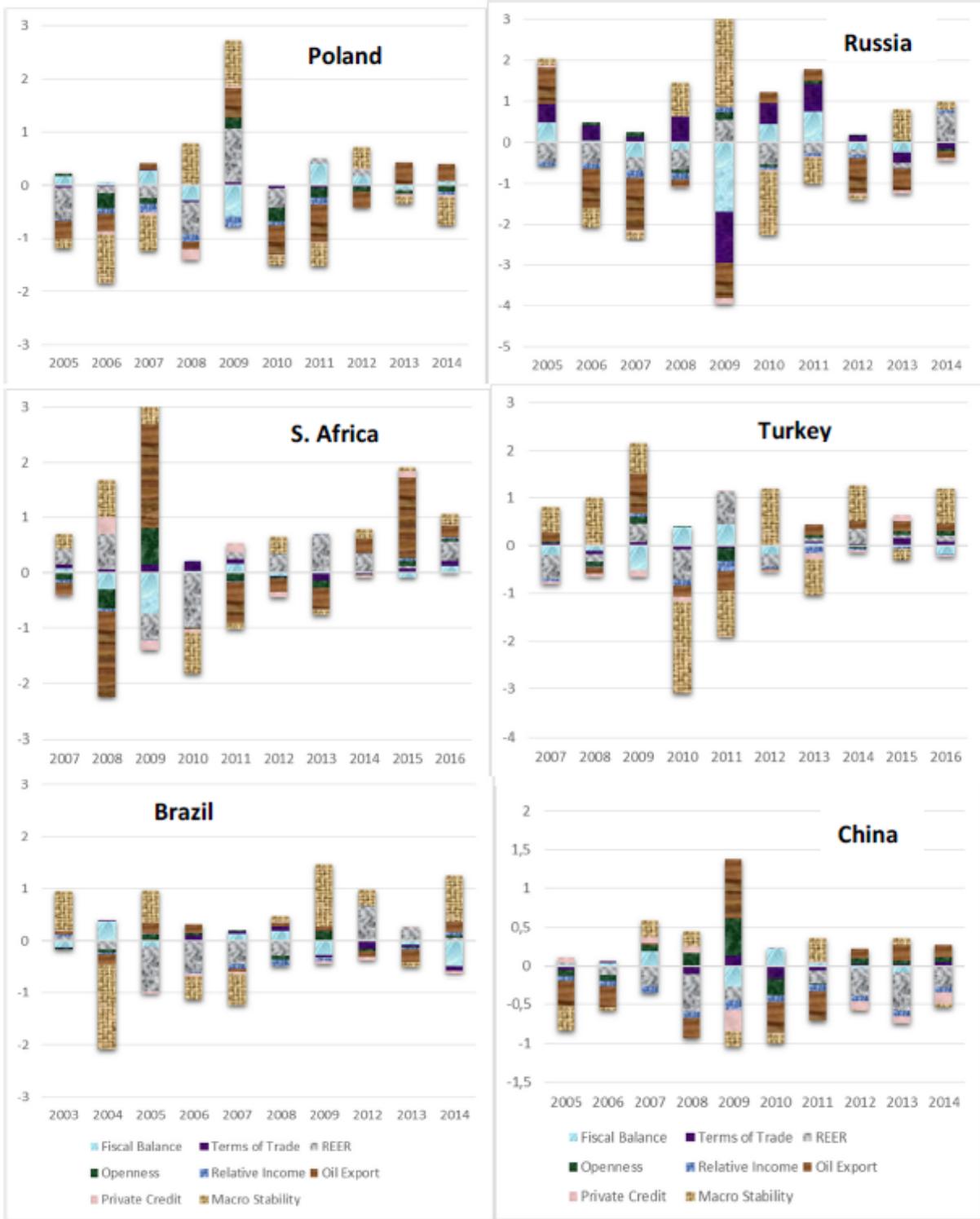


Figure 3

Decomposition of First Differences of Current Account Balances.