LUND UNIVERSITY
School of Economics and Management

Master's Programme in Economic History

Roots of the U.S. Current Account Deterioration:
The Evolution of Current Account from 1981 to 1999

by

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Abstract:

Beginning in 1982, the United States has run persistent current account deficits. This study examines the evolution of the United States current account from 1981 to 1999 to answer the question of whether the current account deterioration from 1982 to 1987 is determined by the same or similar underlying factors as the current account deterioration that took place from 1992 to 1999. The study uses a current account decomposition and a basic vector autoregression (VAR) model to understand both the proximate elements and the underlying factors driving the deterioration of the United States current account. The results of the study suggest that the current account deterioration in the 1980s has significantly different dynamics to the deterioration of the current account in the 1990s. The 1980s current account deterioration and is associated with variation in exports and factors governing the price competitiveness of the United States goods exports. The current account deterioration of the 1990s, on the other hand, is more heavily associated with sustained growth rates in imports and with the increasing importance of financial factors governing trends in investment.

Course code: EKHS12
Master's Thesis (15 credits ECTS)
May 2024
Supervisor: Sean Kenny
Examiner: Viktor Malein
Word Count: 15,801

Acknowledgements

I would like to thank everyone with whom I have explored ideas of history and economics: peers, classmates, and friends. May the conversation never end! I would also like to thank Sean Kenny for his supervision during the thesis process.

Most importantly, I'd like to thank my parents and sister for it all.

Table of Contents

List of Figures

1 Introduction

The United States is in a unique position as it relates to its external balance account. The COVID-19 pandemic and the associated deterioration of the U.S. current account has stimulated debate on the future of the U.S. current account, the key question being: *is it sustainable*? In the 1960s, then French Minister of Finance Valéry Giscard d'Estaing claimed that the United States possessed "exorbitant privilege" due to the role of the U.S. dollar as the world's reserve currency, which provided the U.S. insulation from balance of payments problems. Others have argued that the reserve currency will not always save the United States, and that eventually balance must be achieved. A debate about the future, however, is not the purpose of this study. This study will examine the history of the U.S. current account.

The United States current account has been on a downward trend since the early 1980s. In 1982, it was first clear that the United States was running a current account deficit. From 1982 to 1987, the United States current account declined to previously unseen levels. After a period between 1987 and 1991, in which the United States current account balance reverted to around 0, the U.S. current account balance has consistently trended negative from that period until today. Much debate surrounds the causes of the current account decline in the United States. Explanations for the current account deterioration vary widely, ranging from endogenous economic fundamentals to changing global trade conditions, to the monetary system, to specific policy decisions. Various studies have examined the long-term trends of factors driving the U.S. current account. Others have examined specific time periods of time. A direct comparison between the first period of current account decline and the second period of current account decline has not yet been made to the best of my knowledge. Such a comparison can help shed light on the origins of the secular U.S. current account deterioration. This final point leads to the following research questions:

How did the composition of the current account change between the periods 1982 to 1987 and 1991 to 1999? Did the current account declines in those periods represent similar economic forces, or were the declines in these periods different in nature? Should the beginning of the secular decline in the United States current account begin with the period between 1982 and 1987 or the period after 1991?

By going back to the origins of the persistent U.S. current account deterioration, this study will examine how different economic conditions influenced the composition of the current account. The goal of the study is to analyze the respective periods to understand when the forces behind the secular decline exerted sufficient influence to drive the current account into a long-run negative balance. The study will begin by surveying existing literature on the U.S. current account. Next, it will formally introduce the current account trace historical movement of the U.S. current account from 1981 to 1999 and provide a decomposition of its proximate components. It will then explore theoretical explanations for the underlying drivers of the current account in the given periods and examine related empirical observations. Lastly, the study will use a vector autoregression model (VAR) to interrogate specific dynamics of the current account and to understand the differences between the periods. The different sections will come together in a discussion section at the end.

1.1 Literature Review

The current account represents the net balance of the total income received from and paid for a given country. It is made up of the net income from and expenditure on foreign trade, the net income from assets, wages, transfers, and taxes between home country residents and institutions and the residents and institutions of foreign countries. This element of a country's balance of payments is important because it can reveal dynamics that place long-run constraints on the development of economies. Analyses of current accounts can highlight stresses, risks, and symptoms of imbalances in domestic and global economies (Obstfeld, 2012). Debates over the relative importance of the internal balance and the external balance dominated the post-WWII era. More recently, with the U.S. current account in perpetual deficit since the early 1980s, questions have also been raised on the relevance of the current account as a relevant statistic. Economist Claudio Borio (2016) argues that, while the current account is relevant for understanding aspects of global trade, international policymakers rely too heavily on the current account to provide meaningful insight into issues such as financial stability and the determination of interest rates. Despite the debate surrounding the importance of the current account, it has continued to receive heavy attention in the field of international economics. Much of the recent literature has focused on understanding the underlying drivers of the current account, which will be the focus of this literature review.

An extensive list of potential current account determinants can be found in the *Toolkit for the Analysis of Current Account Imbalances* (Cusolito and Nedeljkovic, 2013). Naturally, debate remains over the explanatory power of each of the variables considered in the *Toolkit.* Countries with different economic conditions are likely to respond differently to different determinants of the current account. Cross-country studies have helped shed light on which of these determinants are most useful in explaining current account imbalances in a broad sense. Cheung et al. (2010) do a cross-country study examining aggregate determinants of individual country current accounts from 1973 to 2008. They find that the medium-term evolution of current accounts can be explained by differentials in "demographics, fiscal deficits, oil dependency and intensity, stage of economic development, financial market development, and institutional quality". They also find that important cyclical determinants of the external balance include output growth, exchange rates, and oil prices. Altayligil and Çetrez (2020) use panel data analysis on 97 countries from 1986 to 2013 and find that there exists a wide range of current account determinants. They conclude that increases in "growth rate[s], real effective exchange rate[s], fiscal deficit[s], trade openness, institutional quality, financial market development and stage[s] of development" and growth in private credit lead to current account deterioration (Altayligil and Çetrez, 2020). They further find that increases in terms of trade, inflation rates, and crude oil exports affect the current account in the opposite direction. Manger and Satler (2020) point to wage-bargaining institutions as the key variable determining the persistence of current account trends in the post-Bretton Woods era and subordinate the importance of determinants such as exchange rates that have been emphasized in other studies.

While the above factors may account for current accounts generally, different conditions and structures of different economies are going to assign different levels of importance to the

determinants affecting the current account balance. Vieira and McDonald (2020) survey the existing literature and that there is no consensus on the key determinants of the current account across countries, and that different methodologies and approaches yield different results. The case of the United States is interesting because it is an outlier in the level of its current account even among developed countries, with a significantly higher current account deficit than its peers (Devadas and Loayza, 2018). Additionally, the cross-country analyses assign relevance to certain variables that do not seem to correspond positively in the case of the U.S. Cheung et al. (2010), for example, find that more developed economies are likely to have more balanced current accounts, yet the United States, one of the most developed countries in the world, runs a substantial deficit. They find that factors such as trade openness and institutional quality are associated with higher current account balances (Cheung et al., 2010). The United States rates highly on both of those indicators and, in a cross-country sample, would be expected to maintain a higher current than it does in reality. In essence, the specific structures and conditions of the United States economy may privilege certain understandings of the current account that are not captured by cross-country analyses.

With many possible factors influencing the current account, studies and analyses have pointed to a variety of causes for the decline in the U.S. current account specifically. The causes of the current account decline specifically in the United States can be categorized into four broad explanatory groups: trade-based explanations, financial explanations, domestic fundamentals explanations, and policy explanations. These explanations are not mutually exclusive. The differentiation of the explanatory groups presented above has more to do with the focus of the analysis than excluding elements of the others. Each explanation is discussed below with respect to the literature.

The most obvious explanations, in terms of the proximate determinants of the current account, concern the conditions determining international trade. Trade in goods and services is generally the largest determining factor for the balance of the current account. Between goods and services, the goods trade typically takes the higher share. The trade-based argument focuses on the decline of the relative price competitiveness of U.S. goods in the global market. The basic story is that the U.S. current account decline, particularly considering the rise of emerging economies, specifically those in East Asia, was an inevitable response to more cost-competitive production of goods abroad. Krugman and Baldwin (1987) examine the period up to 1986 and conclude that price competitiveness advantages in the tradeable medium-tech sectors in fast-growing countries, specifically Japan and to a lesser extent Germany and Korea, contributed to the U.S. current account deterioration. They conclude that the determining factor for the trajectory of the current account is based on how U.S. cost-based productivity relative to the rest of the world evolves in the future (Krugman and Baldwin, 1987). Helkie and Hooper (1987) also highlighted declining price-competitiveness in manufacturing markets in which the U.S. competes with Japan and Germany, but suggested that depreciation in the dollar could boost U.S. price competitiveness in the future. The theory that the loss of competitiveness in medium-tech sectors is critical to understanding the current account is echoed by Blecker (1999), who argued that the U.S. declining competitiveness is a structural problem, and, unless it is addressed by policy, will continue to generate persistent current account deficits. The trade-based argument essentially focuses on the restructuring of global trade from the 1980s to the 2000s, and the lack of

competitiveness of U.S. industry with respect to the technological catch-up of high-growth economies. The lack of competitiveness manifests in negative current account balances with the world, and most prominently with East Asian countries.

The second explanation for the U.S. current account deterioration is based on monetary and financial factors. In theory, the current account balance should affect the cumulative net international investment (NIIP) position of a country. If the current account balance is negative, meaning payments to foreign countries are higher than income received from foreign countries, then the difference must be made up through asset transfers to fund the deficit. The opposite can be said as well. Capital inflows or outflows within a given period can encourage a deterioration or improvement, respectively, in the current account. Because many goods are traded in dollars and debt is often denominated in dollar terms, foreign countries need dollars to carry out global trade. As such, they invest in U.S. dollar-denominated assets to secure future dollars (Bertaut et al., 2023). This increased demand for dollars can push down interest rates, reducing savings and encouraging consumption and investment (Eichengreen, 2011, 119). The associated increases in asset prices drive up perceived wealth in the United States, encouraging additional consumption, which would be reflected (in the case of open goods and services markets) in higher levels of import demand. Blecker (1999) adds that demand for U.S. assets also contributes to exchange rate appreciation pressure, which can make U.S. exports even less price competitive on the global market. This interpretation can be seen as one that demonstrates significant feedback loops. Increasing foreign investment in the United States drives the current account down through both absorption and exchange rate mechanisms. A higher exchange rate encourages further absorption and increasing asset prices encourages more investment, putting pressure on the U.S. current account to deteriorate.

The direction of causation between net capital inflows and the current account balance is bi-directional. Foreign countries only have access to U.S. dollars to buy the assets either by running a bilateral current account surplus in the first place (before investing in U.S. assets) or by using borrowed U.S. dollars to fund asset purchases (thereby creating additional debt). The global savings glut (GSG) theory developed by Ben Bernanke reflects these dynamics (Bernanke 2005). The theory suggests that export-led growth, particularly in East Asia, has created high gross savings that are not matched by domestic investment opportunities. Because the United States has the deepest and most developed financial markets in the world, countries reinvest the proceeds of their trade into U.S. assets. Additionally, U.S. assets, which are relatively safe compared to global assets, are in even higher demand during times of uncertainty. The absorption of foreign investment by U.S. markets, particularly U.S. treasuries, during times of investment uncertainty is known as the “safe assets” version of the global savings glut (Barskey and Easton, 2021). Barskey and Easton (2021) revisit the global savings glut hypothesis and continue to align the discussion of U.S. current account decline with the global savings glut theory. They find evidence that suggests that both excess savings and the safe assets hypotheses drove interest rates down in the period before the Great Financial Crisis and contributed to current account deficits during the period. Credit growth, which can occur as a result of decreased interest rates, can also play a role in determining current account balances. Ekinci et al. (2015) find that quick credit growth can put pressure on the current account to deteriorate in both developed and developing countries, though the

impact is higher in the developing country case. Taken together, the relationship between global savings, interest rate decline, credit growth, and asset price increases are argued to influence the U.S. current account.

A third set of explanations highlights domestic fundamentals across various countries, specifically the relationship between growth, savings, and investment. Amdur and Kiziler (2014) use the long-run series of U.S. growth and current account data to show that the U.S. trade deficit is countercyclical. In periods of slowing growth, the current account tends to recover, while in periods of quicker growth, it tends to widen. Batdelger and Kandil (2012) also find that domestic growth and the growth trading partners are major determinants of the current account. Krugman and Baldwin (1987) show that foreign growth can also play a role in generating demand for U.S. exports. Savings and income distribution in both the home country and in foreign countries also play a role in current account balances. Savings rates are high in many current account surplus nations as the share of the GDP that goes to households is low, and household savings rates themselves are relatively high, most likely due to high levels of precautionary savings due to the lack of social security programs, and as a result, household import demand is low (Pettis 2019). Pettis (2019) points to this economic inequality as a primary driver of global current account imbalances, particularly in the case of the China-U.S. bilateral balance. China's high savings rates reduce consumer import demand, even during times of growth, while low U.S. savings rates encourage more import consumption in times of growth. The problem is *relative* savings between countries, not U.S. savings in isolation. Vieira and McDonald (2020) also find that high savings rates are associated with better (positive) current account balances and that low savings rates are associated with worse (negative) balances. Behringer and van Treeck (2018) find an empirical link between income inequality and current account deficits before Great Financial Crisis, suggesting that the current account imbalances can be partially attributed to permanent increases in income inequality, which can also reflect relative savings. Barnett and Straub (2008) also find that shocks to private absorption, which is highly associated with household consumptions, is one of the main drivers of the U.S. current account, and, combined with the theory of the countercyclical U.S. current account, reflects increased absorption during periods of growth.

A fourth set of explanations surround United States policy decisions. These policy decisions can be largely separated into three categories. First is trade policy, which focuses on the commitment of the United States to the economic development of the ally countries at the expense of its own production. This perspective focuses on the favorable conditions that foreign exporters receive when importing into the United States while highlighting the difficulties that U.S. exporters have when exporting to certain countries (Blecker, 1999). A second trade-related policy surrounds the exchange rate. Vieira and McDonald (2020) find that the exchange rates impact the current account if they are overvalued or undervalued based on fundamentals. Romelli et al. (2018) find that changes in exchange rates impact current account balances, especially for countries that have high levels of trade openness, which is the case for the United States. Exchange rate policy, both domestic and foreign, can contribute to current account balances. Indeed, Blecker (1998) highlights that specific developing countries seek to devalue their currencies, or at least maintain them at an undervalued level to facilitate continued exports and limit imports. If the results put forward

by Vieira and McDonald (2020) are valid, it would lend support to the notion that either surplus countries have (had) undervalued currencies, or that the U.S. dollar is (was) overvalued. Both Krugman and Balwin (1987), writing during the current account deterioration in the 1980s, and Blanchard et al. (2005), writing during the current account deterioration in the mid-2000s, have noted the need for U.S. dollar relative to trade partners to depreciate for the U.S. current account to recover.

Policies supporting financial liberalization have also been a subject of discussion related to the current account deficit. Roy and Kemme (2020) point to the financial liberalization of the 1980s as a key factor underpinning the growth of asset bubbles in the United States in the subsequent periods. The financial liberalization of the 1980s gave greater access to U.S. markets globally and contributed to the rise of asset prices in the United States, particularly during periods of uncertainty in other areas. Roy and Kemme (2020) highlight the run up of the stock market in the 1980s, the difficulties of the European Exchange Rate Mechanism (ERM) in the early 1990s and the Asian Financial Crisis of 1997 as key points during which the United States received investment from abroad (Roy and Kemme, 2020). As has been discussed, increases in investment, as an element of absorption, can have negative consequences for the current account. Financial liberalization connects with the monetary explanations for the U.S. current account deterioration, by allowing global conditions to contribute higher influence in the domestic economy.

United States fiscal and monetary policy are also discussed as potentially driving the U.S. current into deficit. Kumhof and Laxton (2013), in a cross-country study, find that the growth of fiscal deficits has a significant effect in generating current account deterioration in both the short and long run. In the 1980s, the U.S. ran current account deficits and fiscal deficits simultaneously, giving rise to the term “twin deficits” and a potential causal interpretation in that relationship. Blecker (1998) points out, however, that the current account deficit of the late 1990s took place alongside the backdrop of a budget surplus, not a deficit. If the negative fiscal balance was relevant in the 1980s, by the 1990s the fiscal budget was unlikely to be a driving factor of the current account balance, so an enduring relationship between the current account and the fiscal budget remains unclear. Kim and Roubni (2006) examine the impacts of U.S. government spending on the U.S. current account and conclude that negative shocks to the fiscal balance may have a positive effect, but that shocks to output have a stronger relationship with the current account than the fiscal balance does. The relationship between the U.S. fiscal balance and the current account thus remains unclear, but a strong relationship between the two seems unlikely.

More recently, monetary policy has been blamed for driving the U.S. current account deficit. This literature suggests that low-interest rate policies compared to the rest of the world have driven consumption levels up and reduced domestic saving, widening the gap between investment and savings, and contributing to the deterioration of the current account. Additionally, low interest rates have coincided with significant asset price increases, which can, through the wealth effect, generate increased consumption, and support higher levels of imports. A cross-country study done by Hjortsoe et al. (2016) concludes that monetary policy expansion is likely to lead to deterioration in the current account balance. For the case of the United States, Barnett and Straub (2008) find that monetary policy shocks, measured as the federal funds rate, are key drivers of the U.S. current account. Eichengreen (2011, 113) notes

that interest rate significant long-run interest rate declines, supported by the central bank, can lead to the "stretch for yield" which drives demand for more risky assets, increasing the asset prices of risky assets and potentially leading to unstable current account dynamics. Ferrero et al. (2008), however, find that the monetary regime has only a small impact on the current account. A key question that arises from this discussion is whether global factors of savings and investment (associated with the GSG theory) or active monetary policy are the key drivers of financial drivers of the U.S. current account decline. As such, monetary policy connects with the financial explanations of the U.S. current account decline.

A final question posed by the literature is whether the current account trajectory of the United States is sustainable. Seoane and Yurdagul (2019) point out that economically painful "sudden stops" of international financing can occur when negative shocks to growth trends happen alongside current account deficits. Devadas and Loayza (2018) examine the question of when a current deficit is problematic and conclude that when it is "persistently large, fuels consumption rather than investment, occurs alongside excessive domestic credit growth, follows an overvalued exchange rate, or accompanies unrestrained fiscal deficits", problems are likely to arise. In the United States, many of these characteristics are present. Obstfeld and Rogoff (2007) have argued that large U.S. current account deficits pose major risks for the domestic and global economies. McKinnon (2001) meanwhile, argues that it would be preferable for the U.S. to have smaller current account deficits, but that the strength of the international dollar standard reduces much of the risk associated with the sudden stop. Barry Eichengreen (2011, 167) follows this line of thinking, pointing out that the United States, because it holds the world's reserve currency, possesses "exorbitant privilege" and as such can sustain current account deficits at higher levels than other countries can sustain. These interpretations may explain why the current account has been able to run at a deficit for forty years. When a country holds the reserve currency, the risk of a sudden stop in financing the current account deficit is significantly lower precisely because the currency is in constant demand globally, providing increased insulation from the negative effects of a significant current account deficit.

This study contributes to this literature by examining the origins of the secular U.S. current account deterioration in historical perspective. By comparing the proximate elements and the driving factors of the current account decline, this study seeks to find elements of continuity and discontinuity between two periods (1981 to 1987 and 1992 to 1998) that can help explain what we can now see is a secular deterioration of the U.S. current account. Such an analysis can help shed light on how the composition of the United States' current account has shifted over time and the long-term roots of the secular phenomenon. The following section will describe the evolution of the current account in terms of its proximate determinants and help us understand which sectors of the economy drove the current account deterioration. From that point, the analysis will examine and evaluate some of the underlying drivers of the current account that have been introduced in this section.

2 The U.S. Current Account

2.1 Introduction to the Current Account

Before beginning the analysis of U.S. current account empirics, this study will provide some background to the current account and the data used to measure it. The current account represents the total net income received from abroad. If a country is providing more income to the rest of the world than it is receiving, then it must borrow the difference from the rest of the world and is labeled a "debtor nation". If a country is receiving more income from the rest of the world than it is providing, then it must loan money to the rest of the world and is known as a "creditor nation". One way countries can earn income from abroad is through trade. Net income from trade is reflected in the "net trade balance" in the equation below, which measures the total net value of exports minus imports. Another way countries can receive income from other countries is through returns on asset holdings and wages, which is provided by the "net primary income" term. Net primary income reflects the net interest payments, dividend payments, and wages to and from the rest of the world. Lastly, countries can receive income through unilateral transfer payments and taxes, which is reflected in the net secondary income term. Secondary income includes transactions such as transfer payments from a resident to a non-resident, foreign aid, and taxes paid by non-residents. The current account is defined as the net sum of these elements.

Table 1 demonstrates the direction of changes in the current account as a result of changes in specific components of the current account. The current account balance is formalized in equation form below:

Current Account Balance = Net Trade Balance (Exports-Imports) + Net Primary Income + Net Secondary Income

Table 1: Author's examples of the impact of component changes on the current account

Change in Component of Current Account	Account	Impact
Increase in value of services exports	**Trade Balance**	+
Increase in net dividend payments received	**Primary Income**	+
Increase in value of goods imports	**Trade Balance**	-
Decrease in interest payments received by residents on foreign asset holdings	**Primary Income**	-
Decrease in domestic taxes paid by non-residents	**Secondary Income**	-
Increase in remittances sent abroad by residents	**Secondary Income**	-

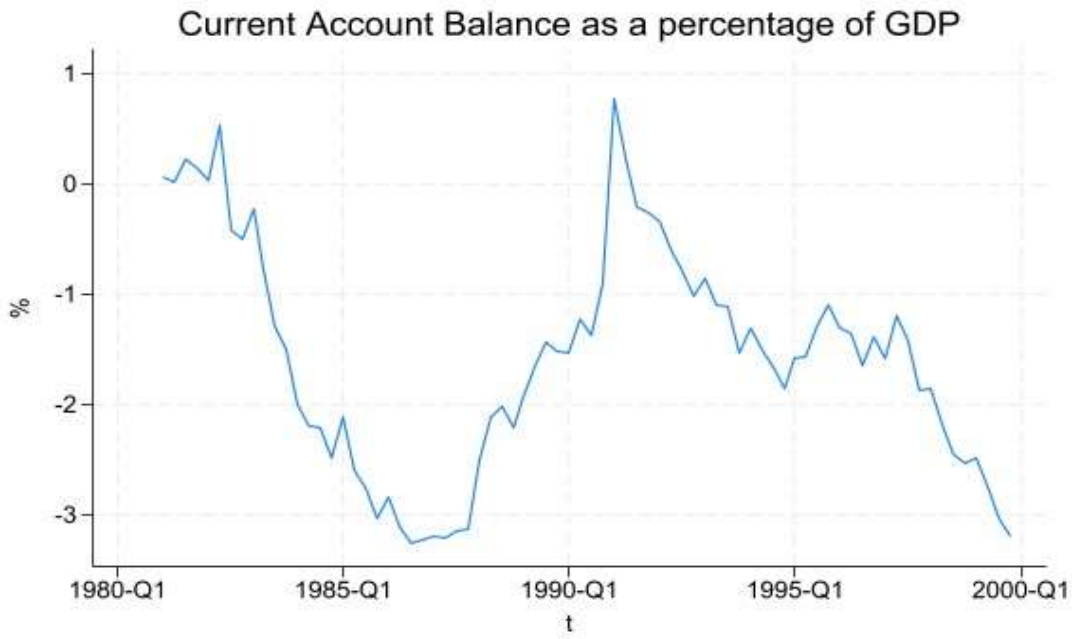
The following section will examine the contributions of each of these elements in the case of the U.S. current account between 1981 and 1999. Data on the U.S. current account and international transactions is collected and reported quarterly by the Bureau of Economic Analysis (BEA). Revisions to the data on the components of the U.S. current account have been made to improve the coverage of the data in the current account estimates. A list of major revisions for the period 1976 to 2008 can be found in "Summary of Major Revisions to the U.S. International Accounts, 1976-2008" by Christopher Bach (2009). Revisions have been made to all major accounts over the course of the 1980s and 1990s. Among the major revisions were improvements in business services data collection between 1984 and 1996, the adoption of the Harmonized System of Commodity classification in 1988 and 1989, and implementing new estimates of transfers between residents and non-residents (Bach 2009). When appropriate, the BEA has revised past statistical estimates to reflect the methodological revisions in data collection and to smooth inconsistent values that can occur as a result of these methodological revisions. The data used in this study reflects the most updated and revised versions of these estimates. The author's BEA data on the current account balance to GDP is highly similar to estimates provided by the Organization for Economic Cooperation and Development (OECD). For a chart on OECD estimates of U.S. current account to GDP, see Figure 35 in Appendix B.

Note: Throughout the paper, a negative effect or trend in the current account is referred to as a "deterioration", while a positive effect or trend is referred to as a "recovery".

2.2 The U.S. Current Account: Descriptive Statistics

The period of interest in this study runs from 1981 to 1999. This period is chosen because it contains two major trend changes in the trajectory of the United States current account since 1960 (for a long-run chart on the U.S. current account, see Figure 35 in Appendix B). Between 1960 and 1982, the U.S. current account was consistently balanced as a percentage of GDP, with minor surpluses and temporary fluctuations in the positive and negative directions. After 1982, the U.S. current account as a percentage of GDP declined to just over 3% in 1987 (see Figure 1). The balance then recovered between 1987 and 1991, reaching a balanced level in 1991 before deteriorating from the second quarter of 1992 until 1999, with a brief stabilization of the current account balance of around 1.5% of GDP between 1993 and 1997. The deterioration of the current account between 1981 and 1999 can be split into two periods. The first period (1982-1987) represents the first significant break of the previous trajectory of the current account. The second period (1992-1999) represents the second period of deterioration, culminating in a similar level of the current account balance to GDP (just over 3%). The aim of this study is to examine the extent to which the current account deteriorations in the two periods were driven by the same proximate and underlying factors. This section will begin with an analysis of the current account's proximate elements, as laid out in the previous section.

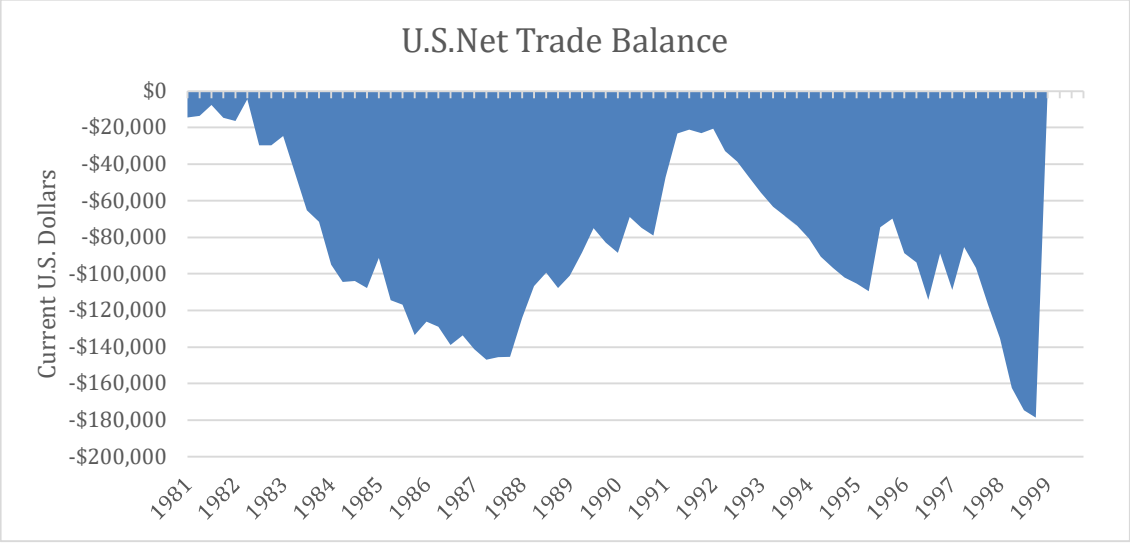
Figure 2: U.S. Current Account Balance to GDP



Source: Authors calculations using BEA NIPA accounts. The current account balance is divided by the value of GDP for each quarter. Both data series use current dollar estimates.

This study will first examine the largest gross contributor to the U.S. current account balance, exports and imports. Figure 2 shows the trajectory of the U.S. trade balance. Its trajectory is highly similar to the current account balance, demonstrating that the two series move together.

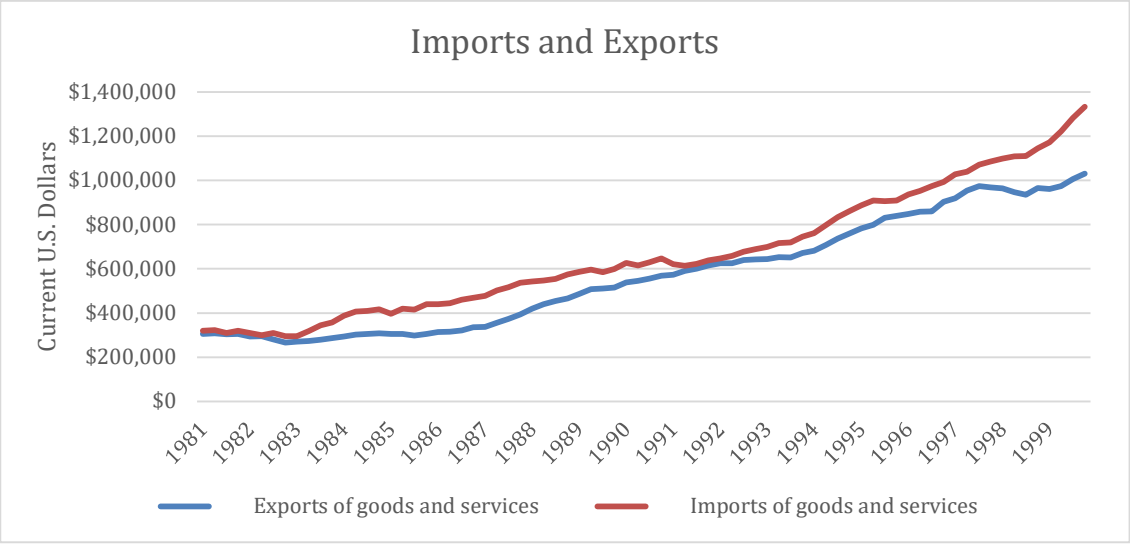
Figure 1: U.S. Trade Balance



Source: BEA NIPA foreign transaction accounts.

In terms of proximate causes, the trade deficit between 1982 and 1987 was driven by stagnation in exports from the beginning of 1982 and an acceleration of import growth beginning in 1983. Figure 3 shows the trajectory of exports and imports during the period 1981 to 1999. During the current account recovery between 1987 and 1992, export growth recovered and increased faster than import growth, narrowing the trade deficit to a nearly balanced level in 1992. Slowing export growth in 1992 combined with quickening import growth between 1992 and 1995 widened the trade deficit during the period. From 1994 to 1997, export growth caught up with import growth, stabilizing the current account deficit and temporarily halting its decline. Slow export growth from 1997 to 1999 combined with high import growth widened the current account further.

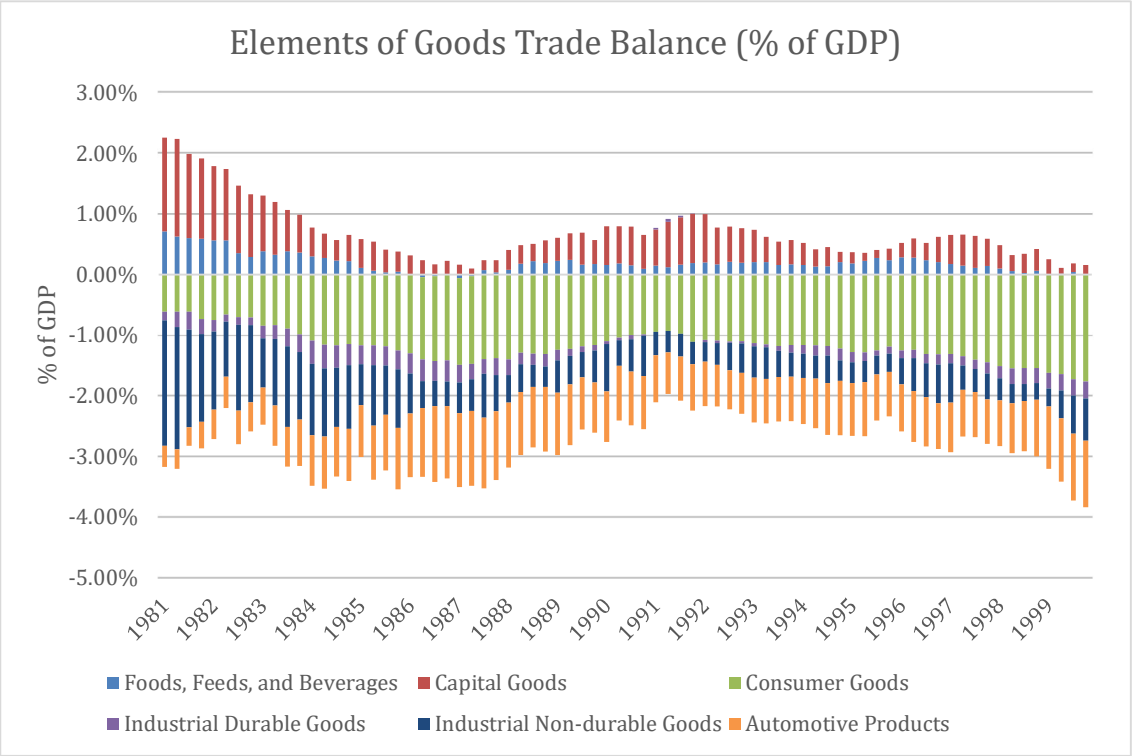
Figure 3: Imports and Exports



Source: Authors Calculations using BEA NIPA accounts. Current dollar estimates.

The trade balance is heavily determined by the balance in the goods trade, as goods make up a significantly larger fraction of trade than services. The BEA data classifies the goods trade by breaking it into several categories: “Foods, Feeds, and Beverages”, “Consumer Goods” (other than automotive), “Capital Goods” (other than automotive), “Automotive Goods”, “Industrial goods” (broken further into durable and nondurable industrial goods), and “Other”. The values in these categories combine to equal the total values of goods exported and imported. The following paragraphs will examine the contributions of net trade in each category to understand what components of trade impact the current account trajectory. Figure 4 summarizes the breakdown of the from the period 1981 to 1999. Charts for trade in all of the categories discussed can be found in Appendix A.

Figure 4: Categories of Goods Trade as a Percentage of GDP



Source: Author's calculations based on BEA NIPA accounts on Foreign Trade

Figure 4 shows the breakdown of the net goods trade. The net trade balance of durable industrial goods, non-automotive capital goods, consumer goods, and automotive goods all varied largely alongside the aggregate net trade balance, suggesting that these specific types of goods drove the changes in the current account balance. The balance of foods, feeds, and beverages fluctuated only sometimes in line with the general changes in the trade balance.

Perhaps the most striking deficit that one can see in the chart is that of consumer goods (Figure 32, Appendix A), which begins from a low level (but high % imbalance) deficit of $20 billion and expands to a deficit of nearly $150 billion, with imports multiplying by a factor of 6 and exports by a factor of 4. GDP increased over the period by an approximate factor of 3, implying that both total trade and the trade deficit increased as a percentage of GDP. These growth rates at the respective starting levels lead to a large deficit in consumer goods in gross terms. This trajectory is consistent across the two time periods.

Trade in automotive vehicles, engines and parts (Figure 34) follows a similar trajectory to that of non-automotive consumer goods, beginning with a small gross deficit that expands into a large one. The growth in imports resulted in more than a fivefold increase over the period, while the growth in imports was just under a factor of 4. As the volume of trade increased, the difference between imports and exports expanded in gross terms, resulting in a large deficit.

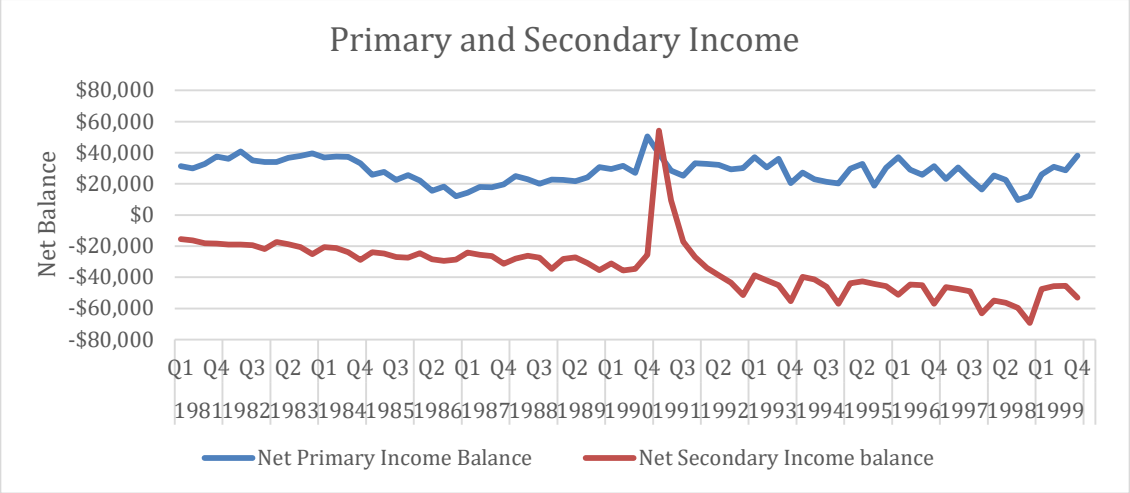
Capital goods trade (Figure 31) was in surplus for the entire period, with the surplus narrowing during periods of increasing deficits and widening during periods of decreasing trade surplus and trade deficit stabilization. This dynamic is to be expected considering that capital goods made up a large share of foreign trade, especially in the 1980s, where changes in the capital goods trade would have a large effect on the total deficit. Over the entire period, capital goods exports grew by a factor of 4, while capital goods imports grew by a factor of 8, narrowing the overall surplus during the period. The rapid growth in capital goods imports can be seen as a driving factor of the trade deficit, though the capital goods share of trade decreased over the entire period.

The growth of trade in durable industrial goods trade (Figure 30) was less dramatic than in the other trade sectors, with exports growing by a factor of 2 and imports growing by a factor of 3. As a share of total trade, durable industrial goods remained small throughout the period. While it moved largely in line with the total trade deficit, it likely did not contribute much to overall fluctuations due to its small share.

The foods, feeds, and beverages trade (Figure 33) also did not grow significantly over the period, with imports growing by a factor of 2 and exports growing only slightly (from $42 billion to $47 billion) over the entire period. The trade was in surplus for most of the period, apart from the period between 1985 to 1987. The lack of relative growth in the foods, feeds, and beverages trade reflects in its very small share of total trade in 1998. The lack of growth in this surplus market, relative to the fast growth in deficit markets, contributed somewhat to the trade deficit over the entire period.

The final piece of the current account is not directly related to trade: net income from abroad. Net income is separated into net primary income, interest and dividends received from and provided abroad, and net secondary income, payment transfers to and from the rest of the world (typically represented as foreign aid, fines and penalties, and remittances). Primary income made up a substantial portion of both receipts from and payments to the rest of the world. In gross terms, the net primary income balance remained largely similar in gross terms, however relative to GDP, the percentage surplus declined significantly over the entire period. The trajectory over the period followed the general trajectory of the current account over the entire period, apart from the very end of the period when the current account was in decline and the net income balance surplus was rising. The secondary income balance trended gradually negative for the entire period, apart from a drastic spike in 1991. The spike is a large outlier compared to the trajectory for the rest of the period. While it contributed to the current account recovery in 1991, it did not provide a sustainable recovery component of the current account and reverted to its trend. The net secondary income balance declined slowly over the period.

Figure 5: Net Primary and Secondary Income



Source: Author's calculations using BEA NIPA Accounts on primary and secondary income.

From these observations, one can discern the driving proximate factors of the current account balance, namely trade in consumer goods, capital goods, and automotive goods. The faster growth of primary income payments than primary income receipts may have also contributed to the deterioration of the current account in the form of a shrinking surplus as a percentage of GDP, but the overall impact was low. The net secondary income balance remained largely steady as a percentage of GDP over the period. The next section will formally break down contributions to the current account balance through a decomposition.

2.3 The U.S. Current Account: Decompostions

The final piece of this section will decompose the elements of changes in the current account. The section is split into two parts. The first part examines the overall elements based on the introductory equation describing the current account. The second part examines the components of the goods trade balance that make up the largest contribution to the current account. The decompositions are done using the equation below, which will provide the percentage of the total growth in the current account (and the goods balance in the second part) explained by a given component.

$$PGC_E = [(V_{E,t2}/V_{E,t1} - 1)*(V_{E,t1}/V_{T,t1})]/(V_{T,t2}/V_{T,t1} - 1)*(100)$$

where PGC_E is the percent growth contribution from a given component "E", $(V_{E,t2}/V_{E,t1} - 1)$ is the growth rate of the given component "E" from the beginning of the period "t1" to the end of the period "t2", $(V_{E,t1}/V_{T,t1})$ is the fraction of the total balance made up of by "E" in the first period, and $(V_{T,t2}/V_{T,t1} - 1)$ is the growth rate of the total balance during the period. The result is multiplied by 100 to get the percentage change from the fraction.

The decomposition of the current account components is split into three periods: the first period of deterioration, the period of recovery, and the second period of deterioration. The results of the current account decomposition for time periods surrounding the current account deterioration depend heavily on which year is used for the reversal between the recovery period and the second period of deterioration due to the outliers in the net secondary balance in quarters 1 and 2 of 1991. Both decompositions are included in Figures 6 and 7 to show the difference in results. The period that has internalized the outlier (1991Q3 – 1999Q4) likely has more relevance for analysis as it better reflects the trends during the entire period. In some cases, the percentage contribution by certain components is over 100%. This is no cause for alarm: it is offset by negative contributions (contributions in the opposite direction of total growth) by other components. Figures 6 and 7 show the decomposition results for the component contributions of deterioration and recovery periods, respectively.

Figure 7: Decomposition of Components of the Current Account Deterioration

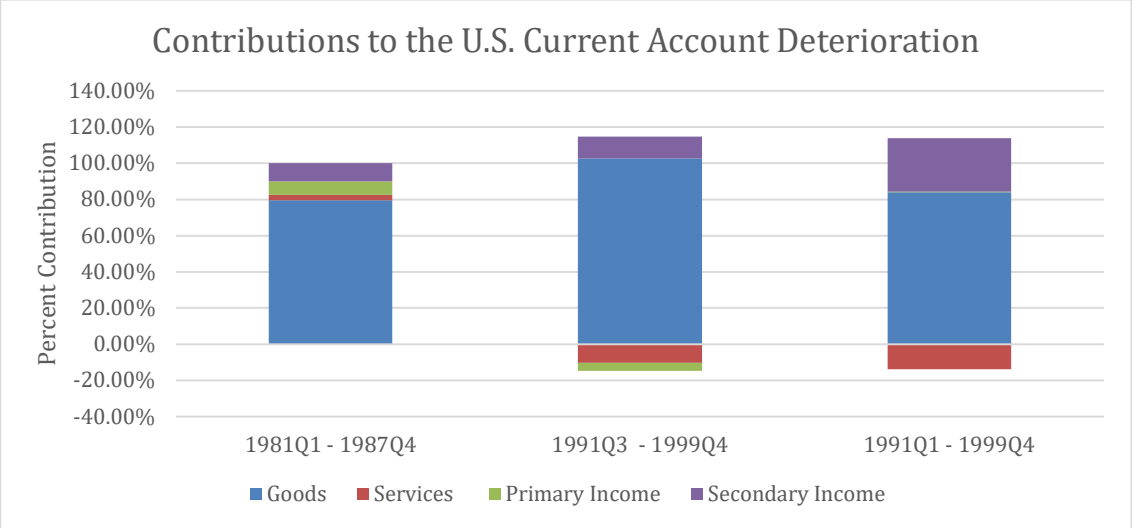
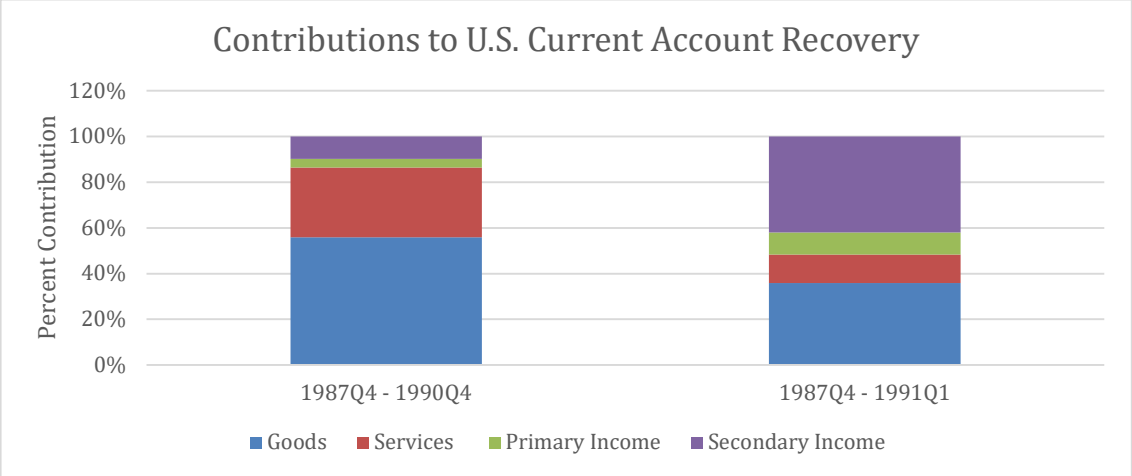


Figure 6: Contributions to the Current Account Recovery



The results of the decompositions show that the trade deficit in goods drove the deterioration of the current account in both periods, making up 80% of the deterioration in period 1 and over 100% of the deterioration in period 2 once the outlier in the net secondary income balance is smoothed. In the first period of deterioration, all accounts deteriorated together, while in the second period of deterioration, the services and primary income balances partially counterbalance the total trend. The period of recovery is characterized by recoveries in net goods and services trades once the outlier in secondary income is smoothed, though all balances make some contribution.

From the above decomposition, one can see that the goods trade was the primary driver of the current account, particularly in periods of deterioration. The second set of decompositions focuses specifically on determining which components of the goods trade drive the trade balance. The method is the same as above, but the total balance reflects the goods trade balance and the components reflect the sectors that make up that balance. Figures 8 and 9 show the decomposition results.

The first period of trade balance deterioration was driven by a combination of consumer goods, automotive products, and capital goods, with small contributions from foods, feeds, and beverages and durable industrial goods. Interestingly, the non-durable industrial goods sector posted a significant recovery and offset some of the deterioration. The current account recovery was largely driven by capital goods, which made up 54% of the recovery. The other major categories all recovered simultaneously, though with smaller contributions, with the exception of consumer goods, which did not contribute in either direction. The second period of current account deterioration was driven largely by consumer goods, with automotive goods and non-durable industrial goods also providing significant contributions. Those three accounts made up nearly 75% of the deterioration. Trade in non-durable industrial goods represents the biggest difference from the first period, during which it operated against the trajectory of the total balance. That consumer goods and automotive goods decline significantly in both periods is notable. The declining long-term balances in consumer goods and automotive products could reflect a sustained loss in price competitiveness in these sectors, and lend support to those who argue that price competitiveness drove the current account. The study will move on to the underlying drivers of the current account. The study will return to the results of this section in the discussion section.

Figure 8: Contributions to the Trade Balance Deterioration

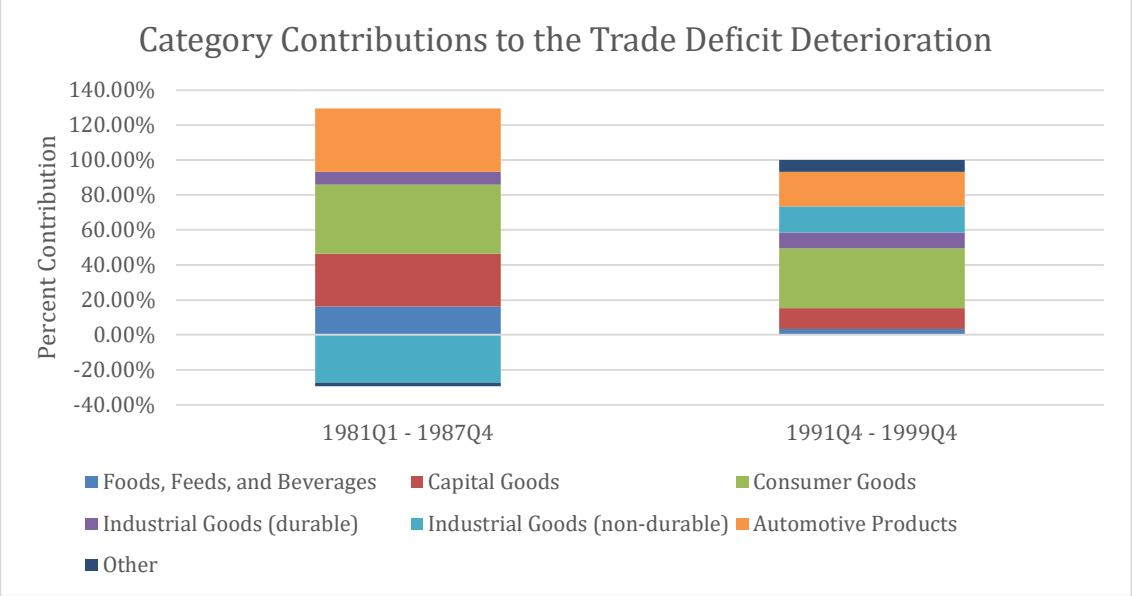
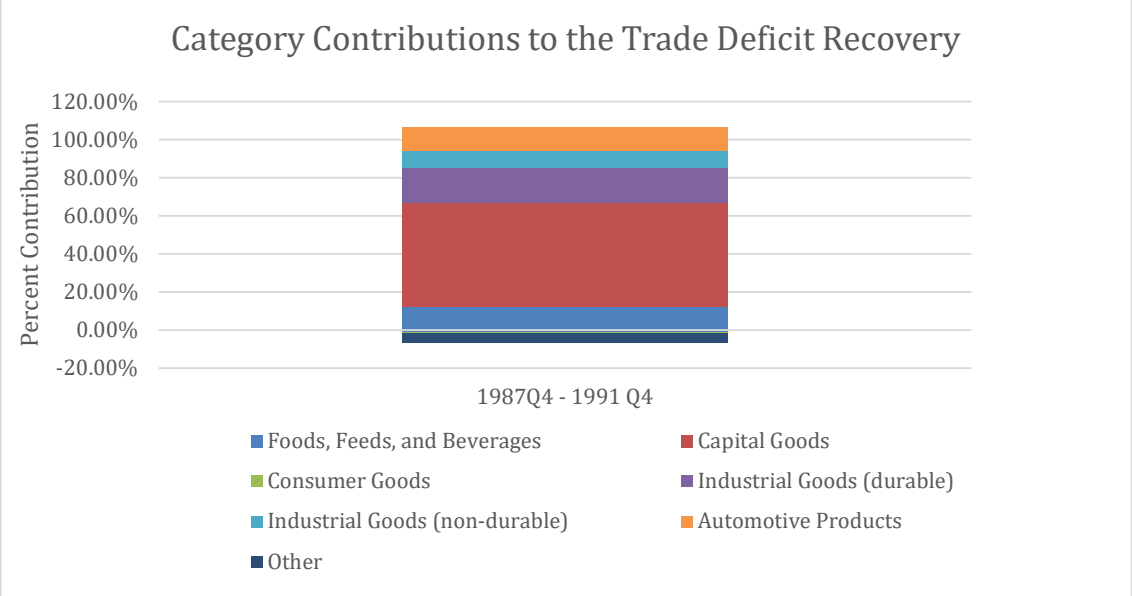


Figure 9: Contributions to the Trade Balance Recovery



3 Current Account Determinants: Theory and Empirics

This section will provide a theoretical and empirical exploration of the movers of the current account. Determinants are split into national domestic movers, foreign domestic movers, and macroeconomic movers.

3.1 National Domestic Movers

3.1.1 Economic Growth:

Conventional wisdom suggests that faster GDP growth will align with a declining current account. Generally, GDP growth is associated with higher incomes. With more income, people will spend more, which increases imports into the country. The basic GDP expenditure identity, adjusted for population is below:

$Y = C + I + G + (NX)$

To get GDP per capita, divide all of the terms by P

$Y/P = C/P + I/P + G/P + (NX)/P$

Where Y is total output, I is investment, G is government spending, NX is net exports, and P is population. We can consider C/P + I/P + G/P as domestic demand, or absorption (A/P), so that:

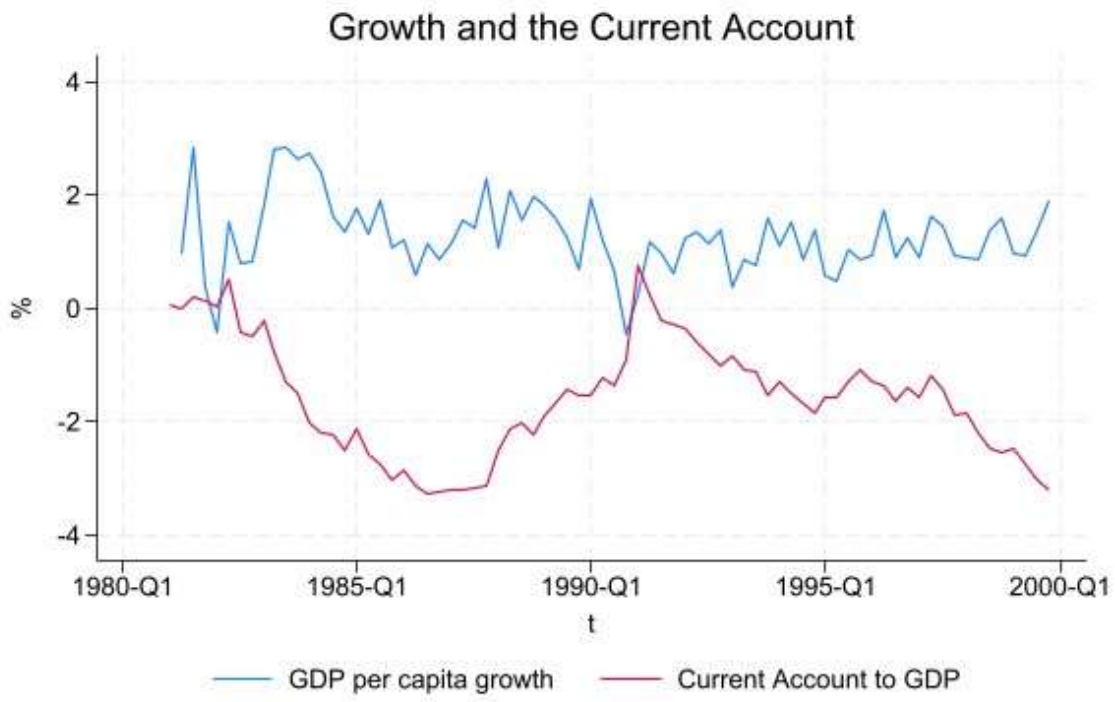
$Y/P – A/P = (NX)/P$

$\Delta Y/P – \Delta A/P = \Delta(NX)/P$

If absorption is higher than output, then the trade balance will be negative. If the growth in output in a given period is less than the growth in absorption, then the trade balance will deteriorate. The U.S. current account deficits and trade deficits from 1981 to 1999 thus imply that absorption is higher than output. Faster absorption growth can come either from growth in consumption (C), investment (I), or government spending (G). Government spending is likely to increase during periods of recession due to countercyclical fiscal spending, so it is unlikely that absorption is driven primarily by fiscal spending. Obstfeld (1996) posits the theory that if a current growth increase is expected to continue in the future, savings rates are likely to decline, and consumption rates are likely to increase, increasing the share of absorption. This theory can potentially explain why growth in the United States may increase slower than absorption. Another explanation is that strong and consistent growth can incentivize increasing investment rates, which would also increase absorption. The next two sections will deal more specifically with savings and investment and the fiscal balance.

In the case of the United States, the current account balance tends to be inversely related to economic growth (Amder and Kiziler 2014). Based on theory and empirical evidence, one should generally expect a negative relationship between the U.S. current account and GDP per capita growth. Figure 5 shows the relationship between the growth of GDP per capita and the current account as a percentage of GDP. It provides visual support to the notion of a countercyclical current account, with periods of current account rebalancing occurring alongside periods of negative economic growth and current account deficit widening during periods of economic growth. This relationship provides support for the idea that domestic growth plays a part in determining the current account.

Figure 10: Economic Growth and the Current Account



Source: Authors calculations of GDP per capita using current dollar estimates provided by the BEA NIPA accounts and World Bank population data.

3.1.2 Savings and Investment:

The current account is often seen as the relationship between savings and investment through the savings-investment identity. Let us go back to the GDP expenditure equation.

$$Y = C + I + G + (NX)$$

Because all income is either taxed, consumed, or saved, the income equation of GDP can be expressed as:

$Y = C + S + T$

Subtracting the second equation from the first gives:

$0 = I – S + G – T + (NX)$

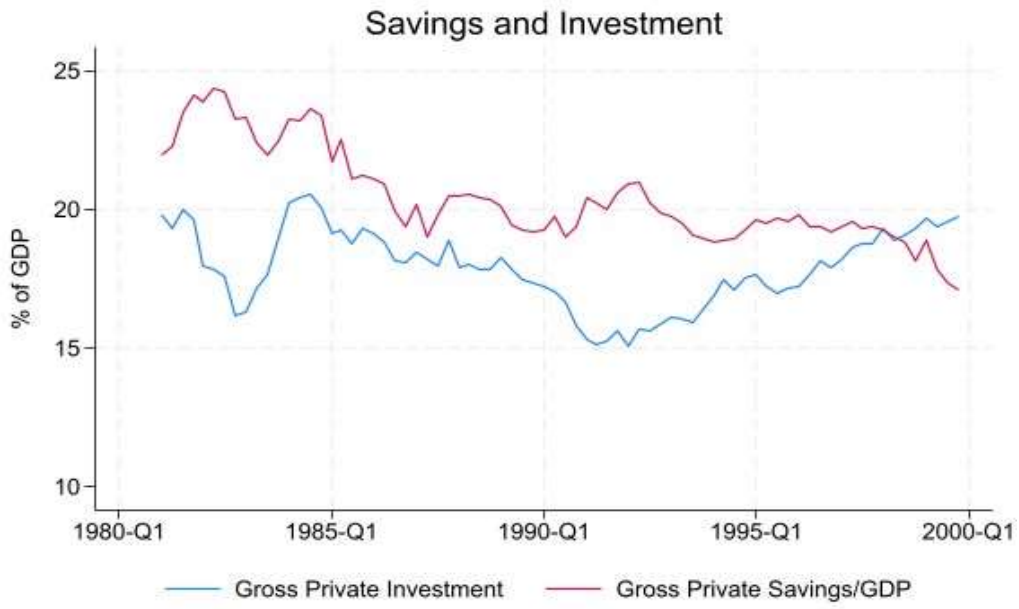
Rearranging the above equation leads to the following:

$(NX) = S - I + T - G$

From this identity, the current account balance is equal to private savings minus investment plus net government saving, which is reflected by taxes minus government spending. Increasing private investment without an equal increase in private savings will have a negative effect on the current account. Declines in private savings will drive a decline in the current account if they decline quicker than investment.

Figure 6 details the trends in U.S. savings and investment.

Figure 11: Savings and Investment



Source: Authors calculations using BEA NIPA data. Gross private investment and gross private savings are divided by GDP. All data is in current dollars.

Over the entire period, the savings rate declines while the investment remains largely constant, with fluctuations. This picture is consistent with the deterioration of the current account. From 1981 to 1992, savings and investment largely move together, apart from recession periods in 1982 and the early 1990s, during which the savings rate increases and investment declines. In the period after the recession in 1992, however, investment increases as the savings rate declines. During the first period of the current account deterioration, the

gap between gross savings and gross investment closes. It widens again during the recovery of the current account between 1987 and 1992, then narrows once again as the current account deterioration continues from 1992 to 1999. One interesting observation is that the parallel trajectories of savings and investment break in the 1990s. While savings and investment trends largely moved together in the 1980s, they began to move in opposite directions in the first half of the 1990s. By 1998, gross private investment even exceeded gross private savings. Because savings and investment are fundamental to the determination of the current account, the changing relationship between savings and investment could indicate differing underlying dynamics of the U.S. current account deterioration between the first period (1982-1987) and the second period (1992-1999). Figure 6 also provides support for the notion of a countercyclical U.S. current account. During periods of recession, investment as a percentage of GDP drops sharply while savings rates recover. During periods of growth, savings rates trend generally downward while investment recovers. After the recession in 1982, investment recovers immediately and sharply then slowly declines, while savings gradually declines. After the recession in 1992, investment increased more gradually and consistently alongside a fall in the savings rate.

3.1.3 Fiscal Deficit

The fiscal balance can be seen as government saving. Through the identity of savings and investment, it will affect the current account.

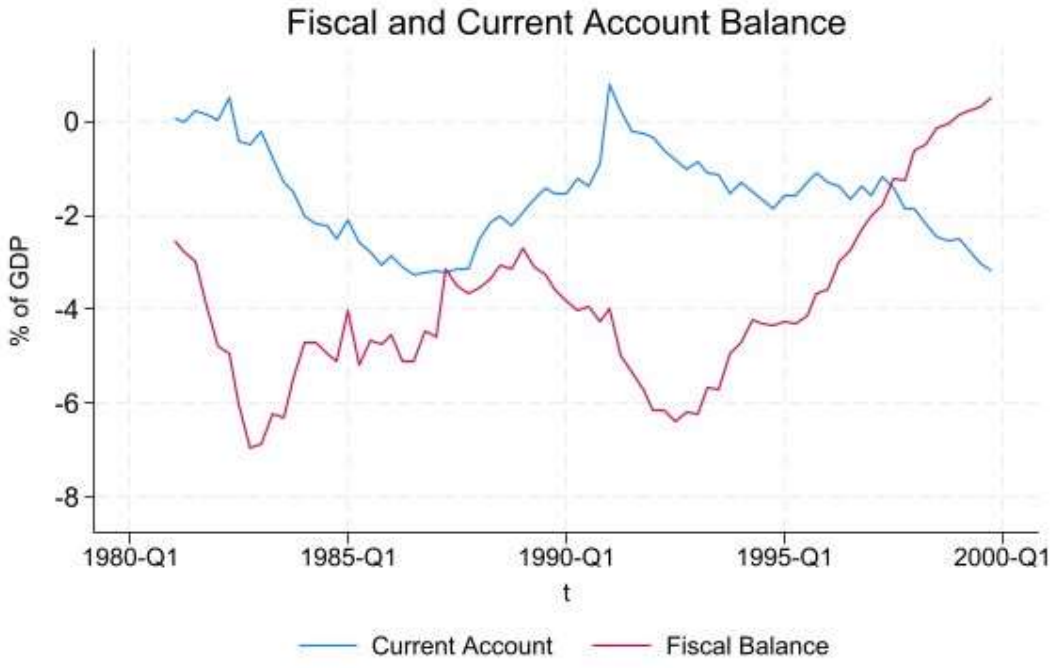
$(NX) = S - I + T - G$

Therefore, one would expect growth in net government savings (T-G) to impact the current account in the positive direction (all else equal), and a decline in net government savings to impact the current account in the negative direction (all else equal).

Figure 8 shows the trajectory of the U.S. fiscal balance alongside the U.S. current account balance, both expressed as a percentage of GDP. During the first period of the current account decline (1982-1987), the United States ran both fiscal and current account deficits, which were known as the “twin deficits”. The empirical observation that the deficits occurred simultaneously combined with the theory presented above could lead to the interpretation that the fiscal balance was a cause of the current account deficit. The relationship between the fiscal balance and the current account, however, was different in the second period of the current account decline (1992-1999), during which the current account deterioration took place alongside a declining fiscal deficit and eventually a fiscal surplus. Additionally, the current account recovery between 1987 and 1991 took place at a time when the fiscal deficit was deteriorating. Though the correlation between the fiscal balance and the current account was present between 1982 and 1987, the relationship no longer held thereafter. This removal of correlation may either indicate that the actual importance of fiscal deficit was lost, that the correlation is coincidental, or that the “twin deficits” were symptoms of similar underlying dynamics.

One interpretation of the loss of correlation between the "twin deficit" notion reflects the countercyclical nature of the U.S. fiscal balance during the period. From Figure 8, one can see the periods in which the fiscal balance deteriorated. The fiscal balance then recovered alongside consistent economic growth from the end of 1983 until 1987. The second period of fiscal balance deterioration (1988 to 1992) also coincides with slowing growth in 1988 and 1989 and then the recession that took place in 1991 and 1992. The period after the recession until the end of the period is characterized by both consistent economic growth and a recovering fiscal balance. If temporary government spending is propping up economic growth (as suggested by the expenditure identity of output), it would only affect the current account in periods of slow growth. Once growth is stabilized, the deterioration of the current can occur despite a recovery of the fiscal balance. In this case, an increasingly negative fiscal balance would impact the current account through its temporary contributions to stabilize economic growth, but not as a consistent year-over-year contributor to the current account deterioration. This explanation seems the most likely because the relationship is consistent over the course of the period. Slow growth (and the associated current account recovery) induces a deterioration in the fiscal balance. Once economic growth is stabilized, economic growth, the deterioration of the current account, and the recovery of the fiscal balance can all happen simultaneously.

Figure 12: The Twin Deficits



Source: Authors calculations using BEA NIPA data on government balance, current account balance, and GDP. All data are current dollar estimates.

3.2 Financial Movers

3.2.1 Net International Investment Position

In the earlier section on the exploration of components of the United States current account, this study discussed the impact of the evolution of net primary income on the evolution of the total U.S current account balance. The net international investment position (NIIP) position is important because it is a major determinant of the primary income component of the current account. The NIIP reflects the net value of foreign assets held by the home country and home-country assets held by foreigners.

$$NIIP = A - L$$

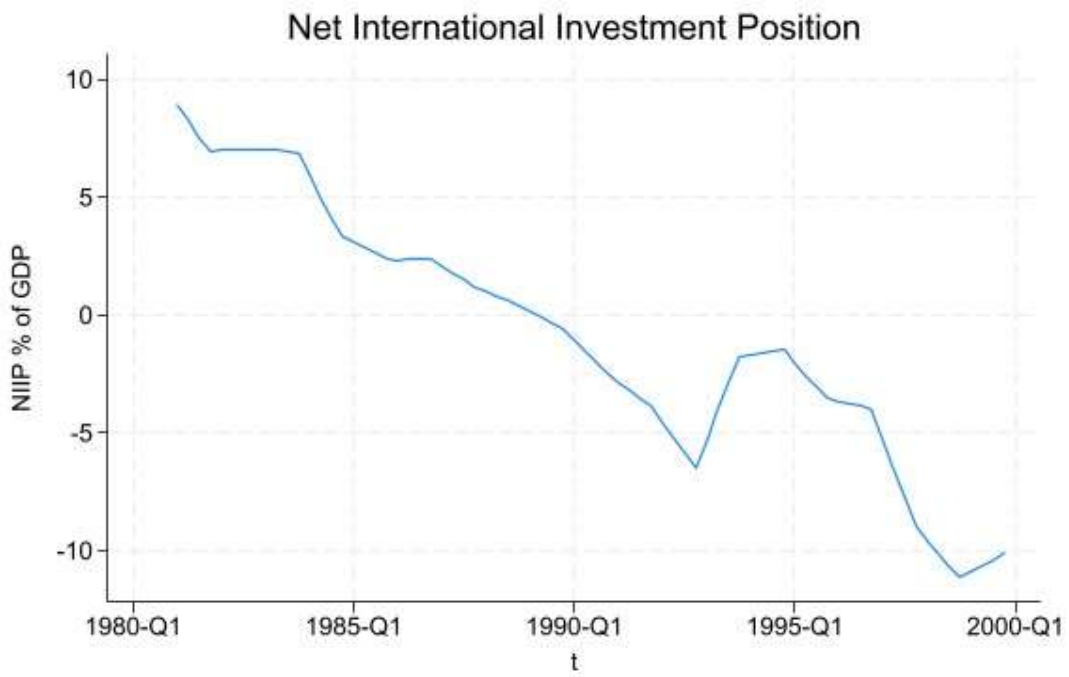
where NIIP represents the net foreign asset position, A represents the value of foreign assets held by residents or institutions of the home country (assets for the home country), and L represents the value of home-country assets held by residents or institutions of foreign countries (liabilities for the home country). Because an asset is likely to provide income, either through dividends or interest payments, the NIIP position can play a role in determining the level of net primary income surpluses or deficits. A positive foreign asset position would suggest a positive impact on the net primary income balance, and a lower net foreign asset position would suggest a negative impact on the net primary income balance. The primary income is also determined by the return on the assets that make up the NIIP position. The equation below formalizes the proximate determinants of the net primary income position.

$$NPI = A(RoA_1) - L(RoA_2)$$

where NPI is the net primary income balance, A is the asset position, L represents the liability position of the home country, RoA_1 is the weighted average return on foreign assets and RoA_2 is the average weighted return on domestic assets.

Figure 10 depicts the evolution of the U.S. net foreign asset position as a percentage of GDP. The NIIP has trended negative for the entire period, beginning at a level of 7% of GDP and ending at a level of just over 10% of GDP. As discussed earlier, the net income balance of the current account remained largely static over the period in value terms and declined as a percentage of GDP. This observation implies that returns on foreign assets held by the United States were greater than returns on U.S. assets held by the rest of the world. This return differential at least partially offset the impacts of the deteriorating NIIP on the current account.

Figure 13: U.S. NIIP



Source: Authors Calculations using International Transactions NIIP data from the BEA, divided by BEA GDP estimates. All estimates are in current dollars.

The NIIP position can impact on the sustainability of the current account. Current accounts deficits can only be sustained if the capital used to pay for excess expenditure returns to the home country through loans and asset purchases. From the identity below, one can see that the cumulative position of net foreign assets position will move alongside the current account.

$NIIP_t - NIIP_{t-1} = CA_t + NKG_t$

where NIIP is the cumulative net international investment position, CA is the current account, NKG represents net capital gains based on changes in valuations. The relationship can also be expressed as:

$\Delta A - \Delta L = CA + KG_A - KG_L$

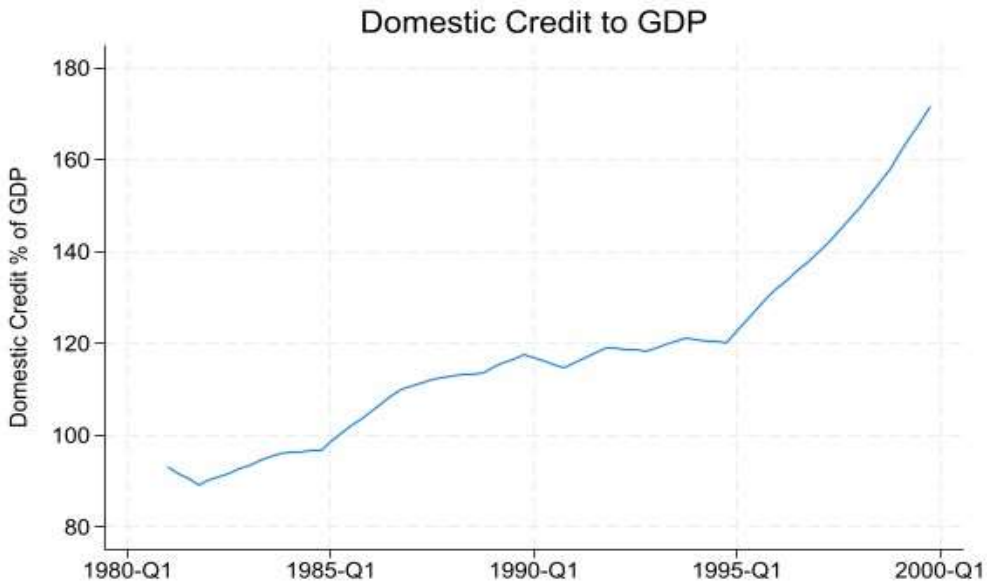
Where A and L represent a country's foreign assets and liabilities, CA is the current account and KG_A and KG_L are the changes in market values of foreign assets and liabilities, respectively. Generally, changes in the current account will drive the NIIP (Obstfeld 2012). However, the NIIP can also put pressure on the current account by limiting the possibilities of future expenditure. Obstfeld (2012) shows that a large NIIP deficit can impact future current account balances through the government and household budget constraints. If the rest of the world is no longer willing to lend or purchase assets at a sufficient level to sustain excess expenditure and current account deficits, then the deficits must tend toward balance. Equation

2 shows that if capital flight takes place and the value of L decreases significantly, the current account will have to recover unless valuations in asset prices offset the change. In this sense, a large deficit in the NIIP can put pressure on the current account to recover. Why did this current account rebalancing not occur in the United States during the widening of current account deficits? Obstfeld (2012) points to asset valuations, which have so far sufficiently balanced the current account deficit. That the net income balance in the current account remained consistent despite a substantial deterioration would support the conclusion that the United States has enjoyed consistently increasing returns on foreign assets relative to rest of the world's returns on U.S. assets. Eichengreen (2012) and McKinnon (2005) further argue that the dollar's status as the global reserve currency insulates the U.S. from NIIP imbalance pressures because U.S. asset access underpins future dollar access for the rest of the world, large-scale capital flight is highly unlikely. Because this study is focused on the drivers of the current account deterioration rather than its brief period of recovery, further exploration of these dynamics will not be conducted. It is worth noting that the United States may not be subject to the same pressures for current account rebalancing that other countries might face.

3.2.2 Credit, Asset Prices, and Interest Rates

Private credit expansions can help generate asset price increases and represent a mechanism by which interest rates affect asset prices (Cusolito and Nedeljkovic, 2013, 15, 31). Private credit can also generate additional absorption through increased borrowing, which implies a reduction in the savings rate (Cusolito and Nedeljkovic, 2013, 31). For these reasons, private credit represents multiple pathways that various related variables can influence the current account. Figure 14 shows the evolution of private credit in the United States from 1981 to 1999.

Figure 14: Domestic Credit to GDP



Source: World Bank Annual Data on Domestic Credit to GDP

A financial path through which private credit can impact the current account is by generating appreciation in asset prices. Second, asset prices can affect patterns of savings and investment that drive the current account, particularly in the short-term, if a rapid appreciation takes place (Cusolito and Nedeljkovic, 2013, 15). If domestic asset prices increase, wealth will nominally increase, and people will be more likely to increase consumption (Cusolito and Nedeljkovic, 2013, 15). This effect can be more pronounced if the asset price increases are expected to be persistent. Higher asset prices can also provide more collateral against which to borrow, discouraging savings in favor of consumption and investment. As higher asset prices tend to increase absorption, one would expect them to also contribute to the deterioration of the current account.

Figure 12 shows the trend of U.S. stock prices, based on the Shiller stock price index. Stock prices increased during the entire period, apart from a brief downturn in the 1987 stock market crash. The Shiller real stock price index shows that stock prices doubled in the 15 years from 1980 to 1995. Such an increase in stock prices is not unexpected given that U.S. nominal GDP more than doubled during the period. In the period from 1995 to 1999, however, the stock price index increased by a factor of 2.5. This final period coincided with the rapid widening of the U.S. current account deficit. While one would expect that stock prices increase with nominal GDP, such an increase far outpaces nominal GDP growth and the past relationship between stock prices and economic growth.

Figure 13 Home prices receive much attention due to the relative size of the market. In the United States, home prices generally trended upward in real terms, but with significant volatility from 1981 to 2000. The home price index seems to be highly aligned with economic growth. An initial decrease took place alongside the recession in the early 1980s, increases until 1989, decreases from 1989 to 1995 occurred alongside the slow growth and recession around the turn of the decade, then a recovery from 1995 to the end of the period took place alongside consistent growth. Therefore, the impacts of home prices on the current account are not easily untangled from trends in economic growth.

Figure 16: Real Stock Prices

Source: Schiller Stock Price Index – Real Stock Prices.

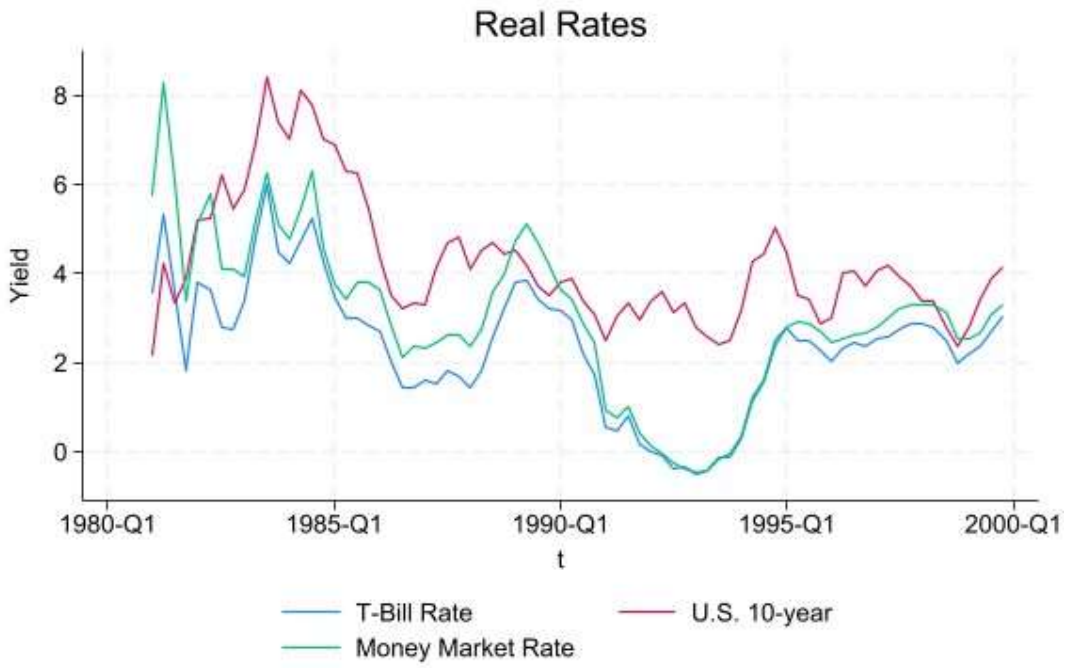
Figure 15: Real Home Prices

Source: Schiller Home Price Index - Real Home Prices.

One major determinant of asset prices is interest rates. Lower interest rates can encourage additional borrowing and disincentive saving. Higher interest rates will incentivize saving and discourage borrowing. Therefore, one should expect lower interest rates to encourage credit expansion, asset price appreciation, and have a negative effect on the current account balance. Furthermore, interest rates are also correlated with economic growth. Lower interest rates would be expected to stimulate consumption and borrowing, which would encourage economic growth. As we have seen, periods of growth are correlated with current account deterioration in the United States, providing additional support to the idea that lower interest rates would contribute negatively to the current account balance.

Figure 17 shows the trends in various U.S. interest rates and how they move together. Over the entire period, real interest rates declined from high levels in the early 1980s to stabilized lower levels by the turn of the century. This trajectory would suggest declining savings rates, which is corroborated by the data in Figure 6 on savings and investment.

Figure 17: Real Interest Rates



Source: U.S. rates data from the IMF interest rate series on International Financial Statistics. Data are quarterly. Real rates are calculated by subtracting the inflation rate, provided by the United States Bureau of Labor Statistics, from the nominal rates. Inflation rates are converted from monthly to quarterly rates by averaging the rate over the three months associated with the given quarter (i.e. the quarter one inflation rate for a given year is the average of the January, February, and March inflation rates).

Interest rates also determine the prices of bonds, which are a third major asset class alongside stocks and homes. The two are inversely correlated: if interest rates go down, bond prices go up. If interest rates go up, bond prices go down. From figure 11, one can see that real rates on

both long-term treasuries (represented by the U.S. 10-year bond) and short-term treasuries (represented by the U.S. treasury bill) declined over the entire period, implying increases in treasury security prices. The sharpest declines in interest rates occurred in the period from 1982 to 1987, alongside declining inflation. The further decline in the short-term treasury bills and stabilization of long-term treasury bonds from 1989 to 1993 likely reflects the difference in short-term expectations of growth and long-term expectations of growth during the period of slowing growth and recession. Toward the end of the period, interest rates stabilized alongside consistent growth and inflation measures, implying stabilizing bond prices.

Over the course of the entire period, prices of the three major asset classes (stocks, bonds, and homes) all increased. During the first period of current account deterioration, bonds and home price changes were more pronounced than the growth in stock prices. In the second period of current account deterioration, asset price increases significantly outpaced nominal growth, while bond prices largely stabilized. This rapid increase in stock prices may have played a role in generating the current account deterioration of the current account after 1995. Home prices largely move with domestic growth trends during this period, which could enhance the countercyclical interpretation of the U.S. current account.

3.2.3 The Exchange Rate

The real effective exchange rate is critical to understanding the current account, as it affects the relative prices of traded goods. All else equal, exchange rate appreciation will make home country exports more expensive and will make imports relatively cheaper, while depreciation will make exports cheaper and imports more expensive. The following equation expresses the relationship between net exports and the exchange rate.

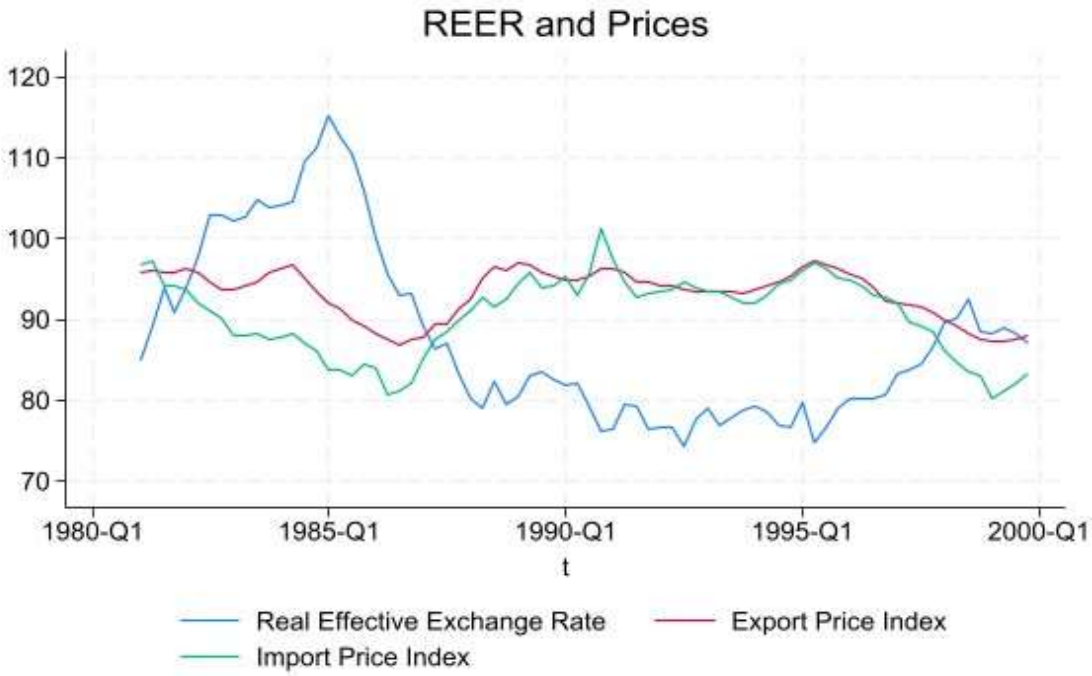
$$NX = P_d*X - (E*P_f)*M$$

where M is the quantity of imports, X is the quantity of exports, E is the exchange rate expressed with the domestic currency in the numerator and foreign currency in the denominator, P_d is the price of domestic goods and P_f is the price of foreign goods. From the equation above, one can see that variation in the exchange rate will affect net exports. In the case of a depreciation (increase in E), net exports will initially decline. However, quantities of exports and imports will eventually respond to the changes in price. The initial decline and recovery of net exports in the face of a depreciation is known as the J-curve (Krugman 1987). Whether the quantity adjustment offsets or exceeds the price adjustment based on the exchange rate depends on the sensitivity of the quantities of imports and exports to changes in price. If quantities of imports and exports are highly sensitive to prices, then quantities will adjust with a larger magnitude, show a pronounced J-curve, and result in a current account deterioration. If quantities of imports and exports are not highly sensitive to prices, then quantities will adjust with a smaller magnitude, show a less pronounced J-curve, and not necessarily lead to a current account recovery. One additional consideration is that domestic and foreign prices may adjust inversely to exchange rates and potentially offset the exchange rate effect on prices. The result of this “pass-through effect” could be the lack of change in real prices paid on imports and exports. The exploration of the impacts of the exchange rate

will use the real effective exchange rate in the analysis of exchange rate impacts on the current account balance to account for the changes in real prices.

Figure 12 shows the trajectory of the real effective exchange rate (REER) in the United States.

Figure 18: Real Effective Exchange Rate and Price Indices



Source: Real Effective Exchange Rate data is provided by the Bank of International Settlements, and retrieved from FRED. The Real Effective Exchange Rate is presented against a weighted basket of 27 countries, with 2020=100. Unfortunately, the broad index, which captures exchange rates relative to emerging market economies is not available for the time period. Price Index data is provided by the BEA NIPA foreign transaction NIPA accounts.

The REER strengthens considerably during the period 1981 to 1985, which coincides with a deterioration of the current account. In the aftermath of the Plaza Accords in 1985, the REER began to decline. The bottom of the dollar decline took place between 1990 and 1995 before the recovery began in 1996 and strengthened between 1997 and 1999. In broad strokes, the real effective exchange rate moves similarly (but inversely) to the current account with a lag, suggesting J-curve effects during the recovery of the current account between 1987 and 1991. The initial deterioration of the current account takes place approximately two years after the run-up of the exchange rate beginning at the beginning of 1981 and continues until early 1985. The subsequent depreciation in the exchange rate starting in 1985 is reflected in the improvement of the current account beginning in 1987 and reaching a balanced level in 1991. Once again, however, the period from 1992 to 1999 does not fit neatly with the typical determinants of the current account. Despite the exchange rate being at low levels, the current account deterioration continued after 1992. This dynamic continued until about 1995, when

the U.S. dollar began to strengthen again. It was not until 1997, two years after the beginning of the resurgence of the U.S. dollar, that the current account experienced a steep deterioration. Figure 12 also depicts the relationship between the REER and import and export price indices. The import price index shows an expected inverse relationship with the REER, which supports the idea that future imports should slow with a REER depreciation. Interestingly, the export price index does not seem to vary significantly with changes in the REER. One would expect export prices to decline with a depreciation of the REER, but the chart does not show this relationship. This lack of variation may suggest that significant passthrough effects exist in the pricing of U.S. exports. Regardless, the strong relationship between the REER and imports suggests that the REER likely influences the current account.

3.2.4 Summary

An examination of correlations between the expected current account changes and the expected drivers of those factors would help determine the current account. The period 1981 to 1987 was a very different period from that between 1992 to 1999. From 1982 to 1987, nearly all the potential "determinants" of the current account seem to be conspiring together to contribute to the current account deterioration. In the period between 1992 and 1999, however, the charts privilege certain determinants over others. In the second period, and especially after 1995, GDP growth, rising asset prices (especially in stocks), credit appetite, and perhaps a financially driven REER appreciation align with the current account deterioration. With these considerations in mind, we can posit that the deterioration of the current account in the 1980s seems to be more aligned with trade fundamentals: relatively weaker price competitiveness in industrial and consumer goods compared to the rest of the world (or at least its major trading partners), appreciation in the exchange rate, decreasing savings and increased absorption, and deteriorating demographics. The widening of the current account deficit in the 1990s seems to be more aligned with financial factors: the long-term decline in interest rates, accelerating credit appetite, rapid increase in asset prices, and asset purchases by foreigners. This interpretation would align with the trade-based explanation of the current account deterioration in the 1980s and the financial-based deterioration in the 1990s.

These observations beg the question of whether the trade-based current account decline set the stage for the financial-based decline of the current account in the late 1990s, or whether the dynamics were fundamentally different between the two periods. Was the recovery of the current account a temporary mean reversion of the long-term trend? Or did the dynamics of the current account change between the first part of the 1980s and the second half of the 1990s? The rest of the study will explore the relationships of the various underlying drivers of the current account on the external balance over the entire period and over the short-term.

4 Quantitative Model

To gain a better understanding of the U.S. current account, this study will incorporate a vector autoregression (VAR) model to estimate some of its underlying drivers in the United States over the whole period (1981-1999), the first period of current account decline, and the second period of current account decline. The VAR model will be used to construct impulse response functions, which will provide insight into current account responses to changes in the underlying variables.

4.1 Data and Variables

The variables chosen are among those discussed in the previous section. The most important variable in the VAR model is the current account as a fraction of GDP. The data, as discussed previously, comes from the U.S. Bureau of Economic Analysis (BEA). The data is annualized, seasonally adjusted, and reported at current prices.

Second, the VAR model will include GDP per capita. Because the United States current account has generally increased during recessionary periods and deteriorated during periods of growth, one should expect an inverse relationship between the two variables. A period of strong growth would be aligned with a deterioration in the current account. The theory behind this dynamic, and why economic growth may have a causal relationship on the current account, is discussed in the determinants section. GDP data comes from the BEA NIPA accounts. It is annualized and seasonally adjusted and reported at current prices. Log values are used to capture changes in U.S. growth specifically. Population data comes from the World Bank. This data provided is annual and is converted by the author to quarterly data by averaging the growth rate from one year to the next across the four quarters. Because U.S. population trends do not fluctuate significantly within-year, this conversion should not pose problems. The data is very similar to that provided by FRED (See Appendix B).

As discussed in the previous section, the real effective exchange rate can be a major determinant of trade and should be included in the model. The real effective exchange rate is used to capture pass-through effects of prices that the nominal exchange rate would not capture. Data on the REER comes from the Federal Reserve Bank of St. Louis (FRED). The REER is quarterly and weighed against a basket of 27 currencies (See Appendix). The U.S. dollar is represented in the denominator, meaning that a higher-level REER corresponds to a higher level of the U.S. dollar.

Last, private credit as a percentage of GDP is included as a representation of financial variables. The natural log (ln) of private credit to GDP will be used to capture the effects in the change in growth rates of private credit. The private credit variable will capture effects from a variety of financial determinants of the current account, as it is correlated with the long-term decline of interest rates and increased asset prices. Data comes from the World Bank. The values represent financial resources and accounts receivable issued by financial

corporations. The data is annual, so averaging the growth rate for a year across the four quarters means that we lose some variation in the data.

Certain variables included in the determinants section will not be included in the VAR model but will be considered in the discussion of the results.

- Savings and investment: Savings and investment will not be included in the VAR because they proximately make up the current account through the savings-investment identity. The variables used instead reflect drivers of savings and investment.

- Fiscal Balance: The fiscal balance is not included in the VAR analysis for two reasons. First is the lack of empirical support relationship laid out in the "Fiscal Balance" Section. Second, the Fiscal Balance is heavily determined by changes in economic growth rates, meaning that the impact of the fiscal balance will be reflected in the GDP per capita variable.

- Net International Investment Position: The NIIP position is not included in the VAR analysis because the direction of causation is likely to go from the current account to NIIP. Secondly, the effect of the net foreign assets would theoretically be expected to assert balancing pressures on the current account. Because this study is primarily aimed at understanding the factors behind the deterioration of the current account specifically, NIIP is not included in the VAR.

- Asset Prices: Asset price indicators are not explicitly included in the VAR because other variables, specifically GDP per capita growth and private credit growth, will likely pick up at most of their effects. The relationships between these variables as predicted in the VAR model will be covered in the discussion section.

4.2 The VAR Model

A VAR model is used in this study to understand how the variables and their relationships impact the current account during the period. VAR models estimate the impact of past values of variables on the present values. This is done using the lagged values of the variables to estimate the impact of past values "t-k", where k is the number of lags, on current values "t". The VAR model will be used to generate impulse response functions. The impulse response functions "shock" the response variable with an increase in the error (keeping all else equal). The path of the response variable represents how it is projected to react to the shock based on the data.

The VAR model is represented formally below. It uses lag level 1, consistent with the optimal lag level specified in Akaike's information criterion (AIC), Bayesian information criterion (BIC), and the Hannan and Quinn information criterion (HQ). The equations below can also be presented in matrix form. The subscript of the β term represents the position in which the given β is located in the coefficient matrix.

$$LNC_t = \alpha_1 + \beta_{11}LNC_{t-1} + \beta_{12}GDPC_{t-1} + \beta_{13}REER_{t-1} + \beta_{14}CAB_{t-1} + \varepsilon_t$$

$$GDP_t = \alpha_2 + \beta_{21}LNC_{t-1} + \beta_{22}GDPC_{t-1} + \beta_{23}REER_{t-1} + \beta_{24}CAB_{t-1} + s_t$$

$$REER_t = \alpha_3 + \beta_{31}LNC_{t-1} + \beta_{32}GDPC_{t-1} + \beta_{33}REER_{t-1} + \beta_{34}CAB_{t-1} + u_t$$

$$CAB_t = \alpha_4 + \beta_{41}LNC_{t-1} + \beta_{42}GDPC_{t-1} + \beta_{43}REER_{t-1} + \beta_{44}CAB_{t-1} + v_t$$

where CAB is the current account balance as a percentage of GDP, LNC is the natural log of credit to GDP, GDPC is the natural log of GDP/capita, REER is the real effective exchange rate, and ε, s, u, and v represent the respective error, or shock, terms.

Hamilton (1994, 575) shows that a VAR model with first differences will not be appropriate if the variables are stationary and cointegration exists between the variables. The Johansen and Engel-Granger cointegration tests suggest no cointegration among the variables, so a VAR model is appropriate. The variables are all subsequently first-differenced to remove non-stationarity in the variables and provide validity to the VAR model.

The Dickey-Fuller test confirms the stationarity of the variables once they are first-differenced. The optimal lag order, as expressed by Akaike's information criterion, Bayesian information criterion, and the Hannan and Quinn information criterion is one lag. The variables are ordered in the VAR consistent with results of Granger causality tests. From the results of the test, the most exogenously determined variables are ordered first while the variables most dependent on the other variables are situated last in the VAR model reflected at the beginning of this section. The model satisfies eigenvalue stability conditions, mean errors are extremely close to 0, and the Lagrange-multiplier test shows no autocorrelation at the chosen lag level (1). Results from stability tests, optimal lag choice tests, and cointegration tests can be found in Appendix C.

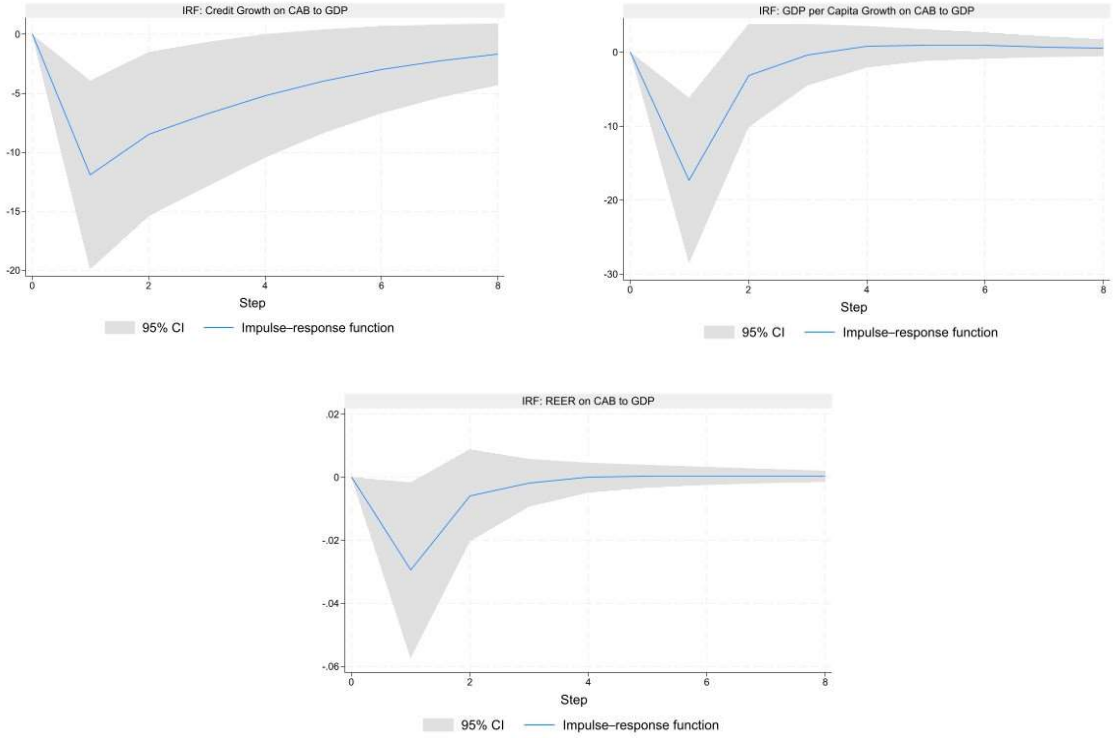
One limitation of the VAR approach with the given sample is that the sample size is not excessively large. Due to the smaller sample size, standard errors are likely to be relatively high. This problem is magnified in the specifications including the shortened time periods, as the standard errors are likely to be even higher. For this reason, the results of the VAR model will be interpreted cautiously and not causally. Instead, they will be interpreted as reflections of trends in the data and will be discussed as such in the discussion section.

5 Empirical Results

5.1 Results

IRFs based on the VAR model for the whole period can be found below. The blue line represents the expected response of the current account to the three other variables. The gray bound represents confidence intervals at 95% significance. Because the purpose of this part of the analysis is to test the theories and relationships presented in the "Determinants" section, the direction, rather than the magnitude, is most important.

Figure 19: Impulse Response Functions (whole period)



Increases in all three variables affect the current account in a negative direction. The growth rate of GDP per capita has a sharp effect after one quarter which reverts back to 0 after two quarters. The growth rate of credit to GDP has an immediate effect that lasts two quarters then gradually wears off over the rest of the period. Interestingly, the credit growth rate tends toward 0 in the long run but the effect of the growth rate in credit on the current account lasts for over two years. The impact of the real effective exchange is a negative one on the current account in the first lag, which lasts about three quarters before reverting to 0. All variables impact the based on the theory in the previous section, apart from the idea of the J-curve. The model is likely just picking up inverse correlation between the variables and cannot estimate to that level of detail. The variance decompositions, which estimate the fraction of the contribution of a given variable to the total variation in the response variable, can be found

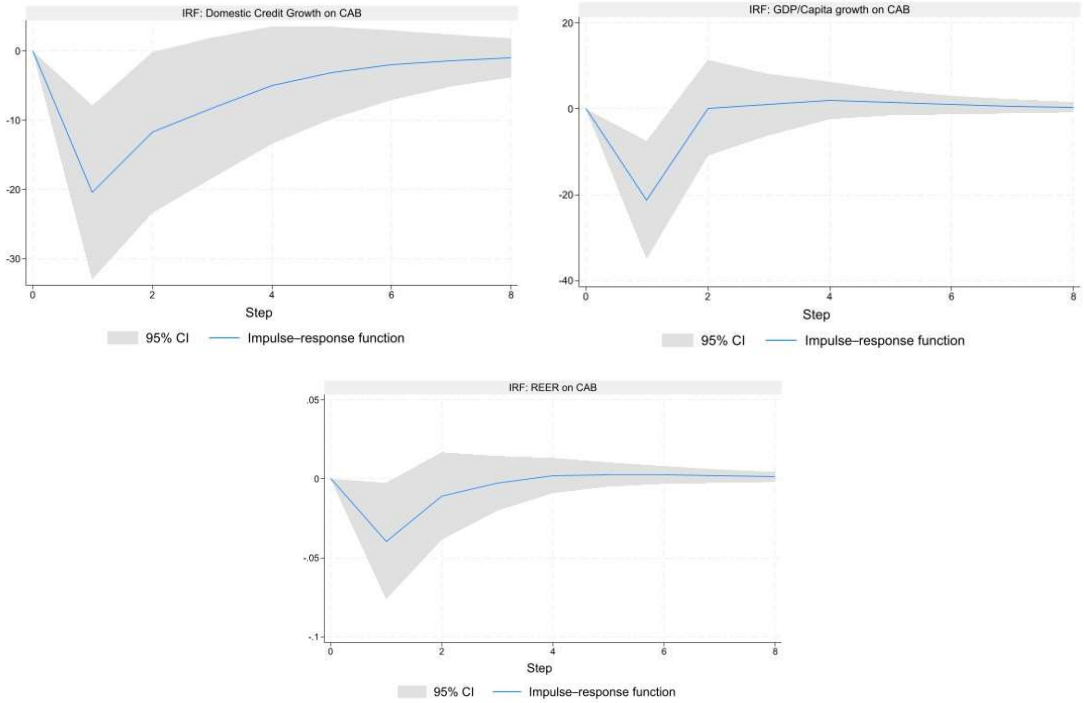
below. Due to the wide confidence intervals, a strong interpretation of the is not possible. The variance decomposition value is highlighted in green.

Figure 20: Variance Decompositions of Listed Variable on CAB to GDP

	GDP per capita growth			Private Credit Growth			REER		
Quarter	FEVD	Lower Bound	Upper Bound	FEVD	Lower Bound	Upper Bound	FEVD	Lower Bound	Upper Bound
1	0.0006	-0.0102	0.0114	0.0310	-0.0467	0.1088	0.0085	-0.0325	0.0496
2	0.0799	-0.0290	0.1888	0.0882	-0.0092	0.1856	0.0408	-0.0293	0.1109
3	0.0791	-0.0306	0.1888	0.1031	-0.0021	0.2083	0.0415	-0.0295	0.1125
4	0.0787	-0.0288	0.1862	0.1116	0.0002	0.2231	0.0412	-0.0294	0.1119
5	0.0793	-0.0270	0.1856	0.1161	0.0009	0.2313	0.0410	-0.0293	0.1113
6	0.0800	-0.0258	0.1858	0.1186	0.0012	0.2360	0.0408	-0.0293	0.1109
7	0.0806	-0.0251	0.1863	0.1199	0.0013	0.2386	0.0407	-0.0293	0.1107
8	0.0810	-0.0247	0.1866	0.1207	0.0013	0.2401	0.0407	-0.0293	0.1106

The IRFs from the first period of the current account decline can be found below. The period lasts from the beginning of 1981 to the second quarter of 1991. This particular period is chosen to capture dynamics of both the current account decline of the 1980s and the current account recovery of the 1980s and early 1990s. The sample size of the VAR models run in the shortened periods is too small to make any strong claims about current account dynamics in the given periods. They can, however, visually show certain patterns in the data.

Figure 21: Impulse Response Functions (First Period)



In this period, increases in the variables all result in declines in the current account. In all cases, the IRF graphs look similar to the whole period. In period one, the effect of the real effective exchange rate lasts four quarters rather than the three quarters found in the IRF for the entire period. The variance decomposition (Figure 22) is more interesting. The REER seems to have a stronger impact on the variation (18%) in the current account in the first period than it does for the entire period (4%). Once again, the confidence intervals are very wide, suggesting caution in interpretation. However, as it captures underlying data, it could be a finding of interest if a strong explanation can be proposed.

Figure 22: Variance Decompositions (1981-1991)

	GDP per Capita Growth			Private Credit Growth			REER		
Quarter	FEVD	Lower Bound	Upper Bound	FEVD	Lower Bound	Upper Bound	FEVD	Lower Bound	Upper Bound
1	0.0062	-0.0422	0.0547	0.0071	-0.0445	0.0587	0.0055	-0.0403	0.0513
2	0.0809	-0.0600	0.2219	0.0636	-0.0253	0.1526	0.1741	-0.0228	0.3711
3	0.0805	-0.0537	0.2147	0.0773	-0.0211	0.1756	0.1811	-0.0182	0.3804
4	0.0815	-0.0489	0.2118	0.0846	-0.0236	0.1927	0.1807	-0.0185	0.3800
5	0.0834	-0.0468	0.2135	0.0870	-0.0255	0.1995	0.1798	-0.0188	0.3784
6	0.0842	-0.0458	0.2143	0.0879	-0.0265	0.2024	0.1795	-0.0188	0.3779
7	0.0846	-0.0454	0.2147	0.0883	-0.0271	0.2037	0.1795	-0.0188	0.3777
8	0.0848	-0.0453	0.2149	0.0885	-0.0273	0.2043	0.1795	-0.0188	0.3777

The IRFs from the second period of the current account decline are shown in Figure 23. The second period is defined from the beginning of 1989, when the short-term trend reversion of the current account decline was clear, to the end of the period at the end of 1999. The two periods contain an overlapping period from 1989 to 1991 to capture certain similar dynamics that may be shared between the two periods. The second period is once again similar to the other periods in terms of the directions of shock impacts.

The results from the variance decomposition in the second period (Figure 24) reveal differences between periods. According to the variance decomposition, the first-period current account balance was driven more by variation in the real effective exchange rate than variation in either of the other two variables. Because this period covers both the initial decline and recovery of the current account, the result implies that the real effective exchange rate played a large role in determining the variation in the current account in its decline and recovery. The impact of the REER is much smaller in the second period, explaining only 4.6% of the variation in the current account from 1989 to 1999. The variation explained by the growth of GDP is also lower than in period 1, declining from approximately 8.5% to 5.4%. The variation of the current account explained by credit growth, meanwhile, is 22.3%, which is significantly higher than in the first period. The impulse response functions and the variance decomposition provide some evidence that all three variables are associated with the current account, but not equally, over the entire period. While variation in the REER is relatively important in explaining current account variation in the first period, variation in credit growth seems to be more relatively important for the current account decline in the second period.

Figure 23: Impulse Response Functions (Second Period)

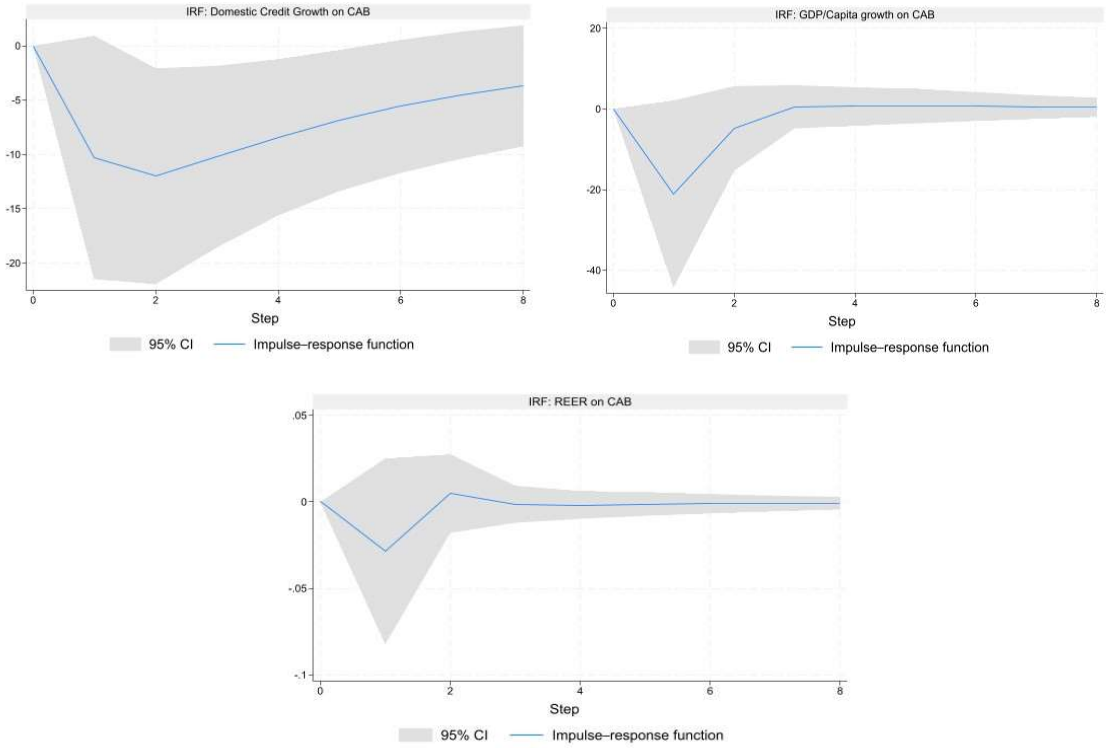


Figure 24: Variance Decompositions (1989-1999)

	GDP per Capita Growth			Private Credit Growth			REER		
Quarter	FEVD	Lower Bound	Upper Bound	FEVD	Lower Bound	Upper Bound	FEVD	Lower Bound	Upper Bound
1	0.0076	-0.0399	0.0551	0.1528	-0.0452	0.3508	0.0057	-0.0357	0.0471
2	0.0574	-0.0581	0.1729	0.1501	-0.0369	0.3372	0.0506	-0.0713	0.1725
3	0.0581	-0.0559	0.1722	0.1718	-0.0213	0.3649	0.0492	-0.0701	0.1685
4	0.0568	-0.0539	0.1675	0.1910	-0.0074	0.3895	0.0481	-0.0685	0.1647
5	0.0559	-0.0527	0.1645	0.2045	0.0008	0.4082	0.0474	-0.0674	0.1621
6	0.0554	-0.0520	0.1627	0.2133	0.0055	0.4211	0.0468	-0.0666	0.1603
7	0.0550	-0.0516	0.1616	0.2191	0.0084	0.4297	0.0465	-0.0662	0.1592
8	0.0548	-0.0514	0.1609	0.2228	0.0100	0.4356	0.0463	-0.0659	0.1584

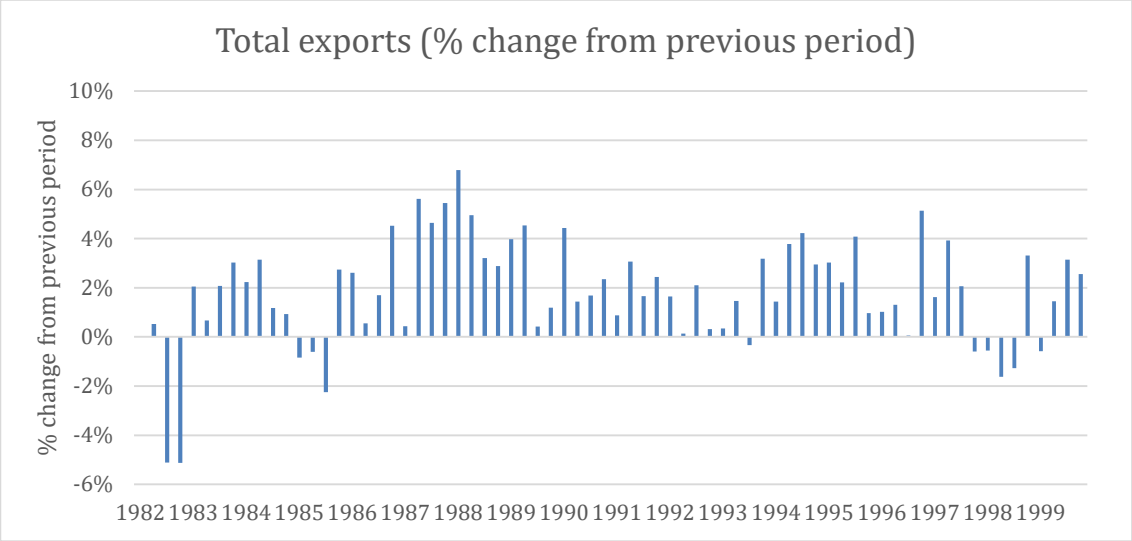
6 Discussion

This study explores the evolution of the United States current account from 1981 to 1999, characterized by two periods of current account deterioration and one period of current account recovery. This section combines findings from the three previous sections to understand the U.S. current account. It finds support for three of the main theories expressed in the literature review: trade-based theories, financial-based theories, and domestic fundamentals theories, though with differences across the time periods.

6.1 Deterioration and Recovery (1982-1991)

Economists such as Krugman (1987) and Helkie and Hooper (1987) have highlighted the role of declining price competitiveness in explaining the U.S. current account decline and point to exchange rates as a key determinant of price competitiveness. The VAR model in the previous section does suggest that exchange rates do likely play some role. A strong dollar in the first half of the 1980s, then, would naturally lead to a trade deficit and a deterioration of the current account. Empirically, this relationship holds until 1985, when the REER begins to fall alongside the increasing current account deficit. The trajectories of imports and exports do what is expected. Import growth increases and exports stagnate. The question then becomes why the trade balance continued to decline for two years even alongside the real decline in prices. Going back to Figure 17, one can see that import prices took about one year to adjust to the depreciation in the exchange rate before becoming more expensive. Looking at Figure 3, however, imports largely continued their trajectory until the recession in 1990 despite the increase in prices. A more convincing answer might lie in exports. Export values began to pick up from the stagnation of the pre-1985 years alongside the depreciation in the exchange rate, suggesting a relative increase in U.S. export price competitiveness. The acceleration was slow, but it continued until eventually the growth rate of exports surpassed the growth rate of imports. These observations suggest that the exchange rate likely affected the trade balance through the export channel rather than the import channel. The VAR model picks up the effects of relationship of the REER on the current account and assigns high importance to the REER in the first period, providing further support for the impacts of the REER on the export element of the current account balance.

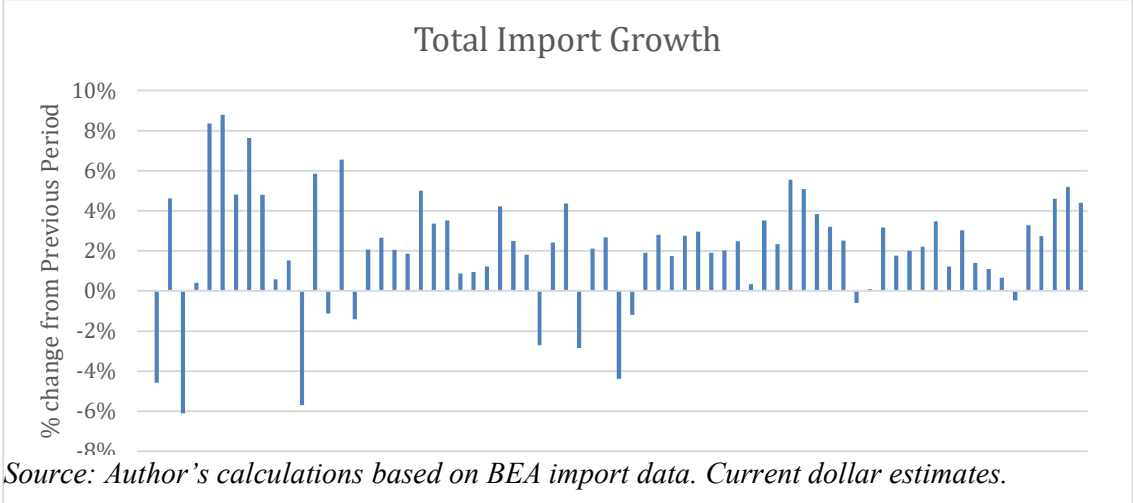
Figure 29: Export Growth



Source: Author's calculations using BEA data on total exports. Current dollar estimates.

For imports, the initial acceleration occurred when the U.S. growth rose out of the 1982 recession (see Figure 25). After an initial spike in economic growth, import growth rates continued at a largely consistent level alongside consistent economic growth. At the same time, savings rates declined over the same period. The decline in savings rates corresponds with movements in GDP per capita growth, with the decline in savings rates occurring as the U.S. came out of the early 1980s recession. With higher aggregate incomes, savings rates dropped, and the price increases in imports were absorbed.

Figure 26: Import Growth



Source: Author's calculations based on BEA import data. Current dollar estimates.

*Figure 25: Import Growth*Source: Author's calculations based on BEA import data. Current dollar estimates.

Movements of interest rates during the period also correspond with changes in the savings rate (recall Figure 16). The initial period of interest rate decline coming out of the early 1980s recession took place side by side with declines in savings. When real interest rates stabilized between 1986 and 1989, the savings rate decline slowed but did not stop, indicating that interest rates alone do not account for declines in savings. According to the Shiller stock price index (Figure 15), real stock prices nearly doubled in the period from 1983 to 1987. Home prices (Figure 14) experienced a rapid price increase from 1985 to 1989, and private debt grew from under 100% to nearly 120% from 1984 to 1989. From these observations, one can assert that the U.S. import growth during this period was determined more by domestic factors than changes in the exchange rate. As such find support for the notion of the countercyclical current account balance presented by Amder and Kiziler (2014) through the import mechanism. The VAR model assigns similar importance to the financial variable (credit growth), which is likely to capture interest rate decreases and asset price increases, and to the domestic growth variable (economic growth) for the first period of analysis, likely reflecting the impacts of these variables on import growth. Together, these variables explain movements in imports rather effectively.

That these relationships continued into the period of current account recovery period provides further support for the strength of the relationships. The strong import growth trajectory and the decline in gross savings rates continued until the recession in late 1990 and early 1991. The period of slow growth in 1989 triggered declines in short-term interest rates, which may have offset the potential impact of slowing growth on the savings rate.

During this first period of current account deterioration and recovery, imports seem to be more affected by domestic determinants, while exports are more affected by the exchange rate. As such, both seem to matter in the determination of the current account for the first period of deterioration.

6.2 Deterioration (1992-1999)

The second period of current account deterioration took place under some different dynamics. First, it is worth noting that the current account recovery begins to decline once the REER hits its bottom level. Krugman (1987) suggests that due to quicker productivity growth in catch-up economies, the REER would have to continuously decline in order for the United States to maintain balance in the trade balance. In the absence of such a decline, the trade balance would decline as well. This interpretation finds some support in the empirical reality of the flattening of the REER coinciding with a widening trade deficit. However, apart from slow export growth in 1992 and 1993, exports still generally grew at a healthy rate during the second period of the current account decline, and specifically from 1993 to 1997. This strong growth in exports occurred alongside the flattening of the REER until 1995, and then alongside an increasing REER from 1995 to 1997. After 1997 exports decrease. Two interpretations are plausible: either there is a two-year lag effect of the increase in the REER

on exports, or global demand for U.S exports was significantly reduced regardless of the price level. Because U.S. exports responded quickly to changes in the REER in the 1980s and because 1997 was the same year as the Asian financial crisis, the second explanation seems more legitimate. The shock in economic growth was substantial, reducing global growth by nearly 50% from 1997 to 1998 according to World Bank data. Figure 3 shows that exports did indeed fall between 1997 and 1998, before recovering in 1999, providing evidence that the global demand shock was the likely driver of the export decline. The close correlation between the REER and exports present in the first period does not seem to hold for the second period, suggesting that the REER seems to have significantly less of an effect on export determination in the period than in the first period. This is reflected in the small value of the variance decomposition of the REER on the current account balance in the second period.

While exports grew alongside output growth, imports increased significantly quicker than output. The determinants of import growth discussed in the previous section continued to exert influence on savings rates, which declined from over 20% of GDP to approximately 17%. A decline in the savings rate is to be expected empirically based on the consistent economic growth during the period. One critical observation, however, is that the trends of savings and investment decoupled between 1992 and 1999. In the first period, they largely moved in the same direction, with brief exceptions during recessions. In the second period, however, gross investment as a percentage of GDP consistently increased while gross savings to GDP either declined or remained constant. Savings does what is expected based on first-period observations, but investment does not. A brief investigation into this dynamic will follow.

Increasing investment alongside declining savings could indicate either that higher shares of domestic savings are going to investment, that foreign savings are driving investment, or some combination of the two. It is worth noting that changes in real interest rates did not take place (Figure 16). Despite the lack of variation in interest rates, private credit increased exponentially during this period. Stock prices also increased exponentially (in what became the Dotcom bubble), and home prices also trended up. What drove the concurrent rise in investment, credit, and asset prices? One potential explanation is expectations of future growth. If investors are confident of strong and sustained future growth, they are more likely to invest. A connected but distinct explanation, expressed by Roy and Kemme (2020) suggests that investment from U.S. and foreign investors flowed into the United States as a result of exogenous shocks: the collapse of the European Exchange Rate Mechanism (ERM) and the Asian Financial Crisis in 1997. In their theory, these two crises pushed investor money into the safe haven of the United States, driving up asset prices and creating the bubble in stocks. The explanation provided by Roy and Kemme (2020) aligns with the safe assets version of the Global Savings Glut (Bernanke 2005, Barskey and Easton 2021). Eichengreen (2011, 96) provides a slightly different explanation for flows into the United States, suggesting that the collapse of the European ERM removed the only legitimate rival to the U.S. dollar as the global reserve currency. Once the rival was removed, the demand for future U.S. dollars contributed to current demand for U.S. assets from foreign investors, which drove asset prices up. The NIIP position of the United States provides support for these theories. The NIIP saw a drastic deterioration from 1994 to 1999, going from a deficit of

about 1.5% to over 10% of GDP by 1999. Whether this flow of funds into the United States was driven by foreign investors or through U.S. repatriation of foreign assets is outside the scope of this study, but the evidence in support of a financially driven current account deterioration in the 1990s based on global investment into the United States is strong.

With these considerations in mind, the current account deterioration in the 1990s can be seen as significantly driven by global financial factors rather than trade fundamentals. This interpretation is supported by the VAR variance decomposition for the second period, which prioritizes the impact of the financial aspect of the current account decline. However, the importance of domestic U.S. growth should not be overlooked despite the low impact as expressed by the variance decomposition for the second period. Consistent growth in the United States encouraged investment into the country. For this reason, although the statistical importance of U.S. growth is not reflected in the VAR, it was likely a necessary, if not necessarily a sufficient, condition for the widening of the current account deficit in the 1990s.

7 Conclusion

The period from 1982 to today has seen a secular decline in the United States current account. Can the period of current account decline in the 1980s be associated with the secular trend of the current account decline from the 1990s to today? Answering this question can help reveal the fundamentals of the current account decline and help determine whether the current account deterioration and subsequent recovery were the products of mean reversion, or whether secular pressures toward current account deterioration were building before the large-scale growth of U.S. current account deficit from 1992 to 2006, when the deficit reached 6% of GDP.

This study finds that the increased financialization, integration of global asset markets, and global reliance on U.S. assets that took place in the 1990s is a key distinguishing feature between the 1980s and 1990s current account dynamics. This period broke previously existing trends in the relationship between savings and investment, implying increases in investment from abroad. This evidence supports the notion of a large-scale global investment into the United States in the late 1990s, and potentially of a safe-assets version of the global savings glut in the early 1990s. Strong domestic growth coming out of the early 1990s recession, exogenous financial and currency crises, and the status of the dollar as the reserve currency (with the depth and liquidity of its financial markets) induced investment into the United States and the resumption of the current account deterioration at a larger magnitude that ultimately continued until the Great Financial Crisis.

Some roots of the long-term U.S. current account decline can be traced back to the 1980s. Based on the decomposition, the decline of U.S. price competitiveness most clearly in consumer goods, but also in capital goods and automotive goods, was persistent over the period. The declining long-term price competitiveness in these sectors pressured the current account to deteriorate. Though the dynamics of the current account may have shifted due to the increased financialization of the U.S. economy and increased globalization of capital, the issue of price-competitiveness in the goods trade remains relevant.

With the advent of COVID-19, the U.S. current account balance deteriorated once again. Whether this iteration of the current account deterioration will be sustained is up for debate. This study will leave someone else to examine the future.

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9 Appendix A: Charts on U.S. Trade

Figure 35: The Goods Trade

Figure 32: Services Trade

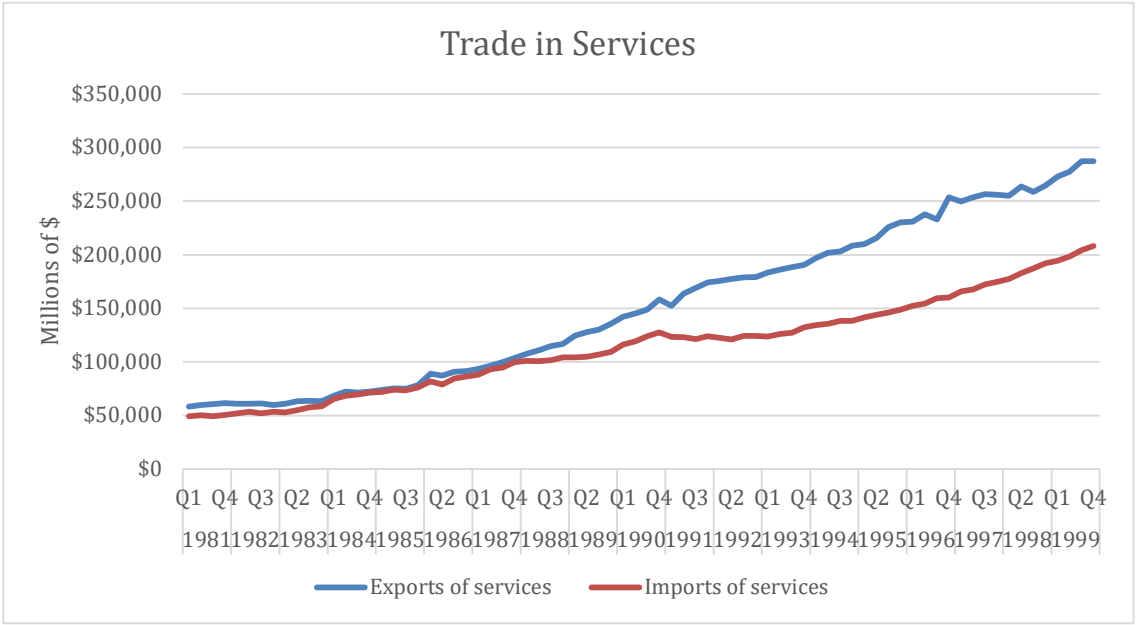


Figure 41: Trade in Industrial Durable Goods

Figure 38: Trade in Industrial Non-Durable Goods

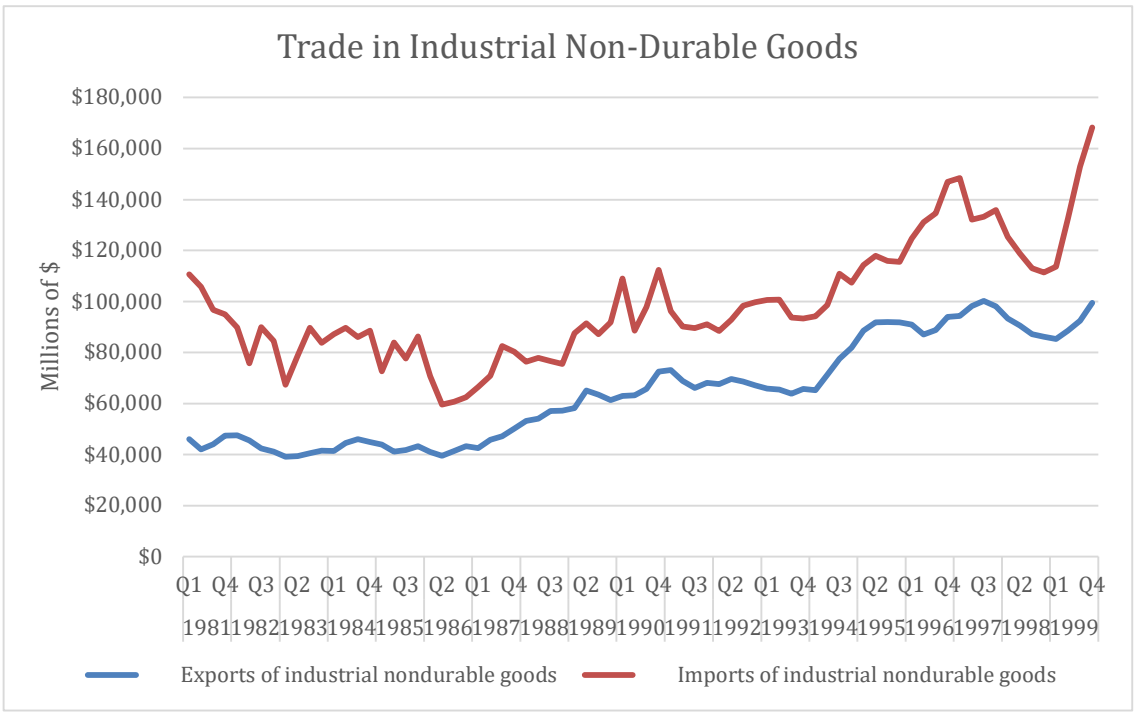


Figure 44: Trade in Capital Goods

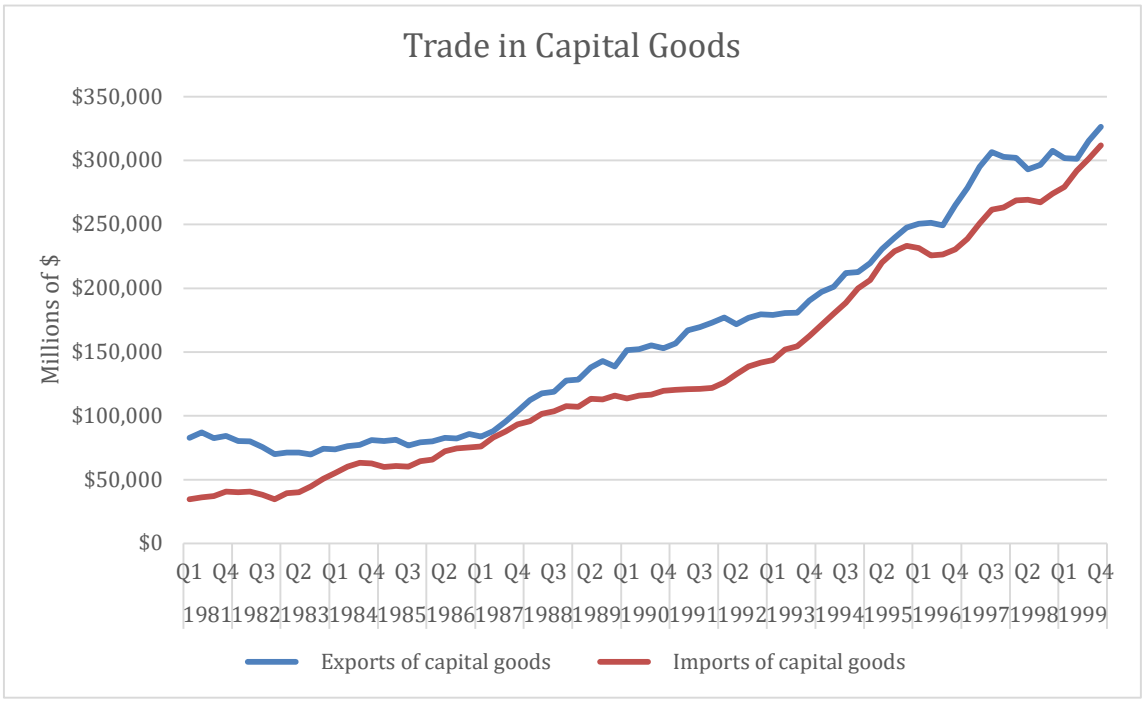


Figure 47: Trade in Consumer Goods

Figure 53: Trade in Automotive Products

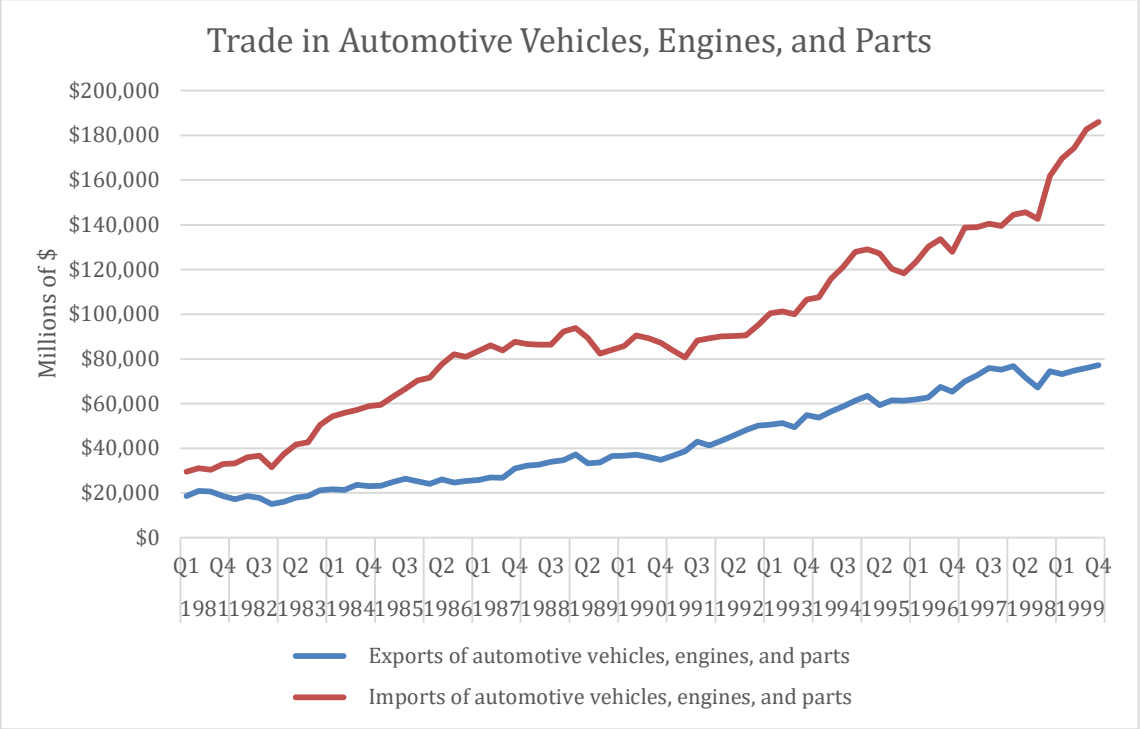
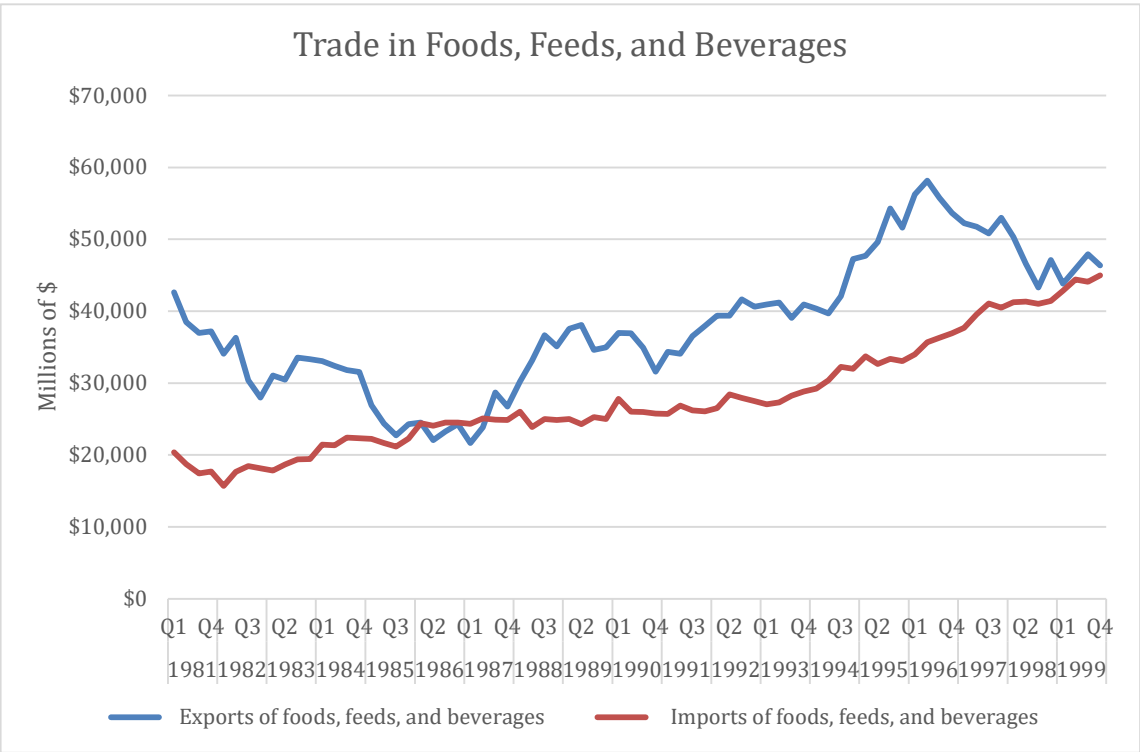


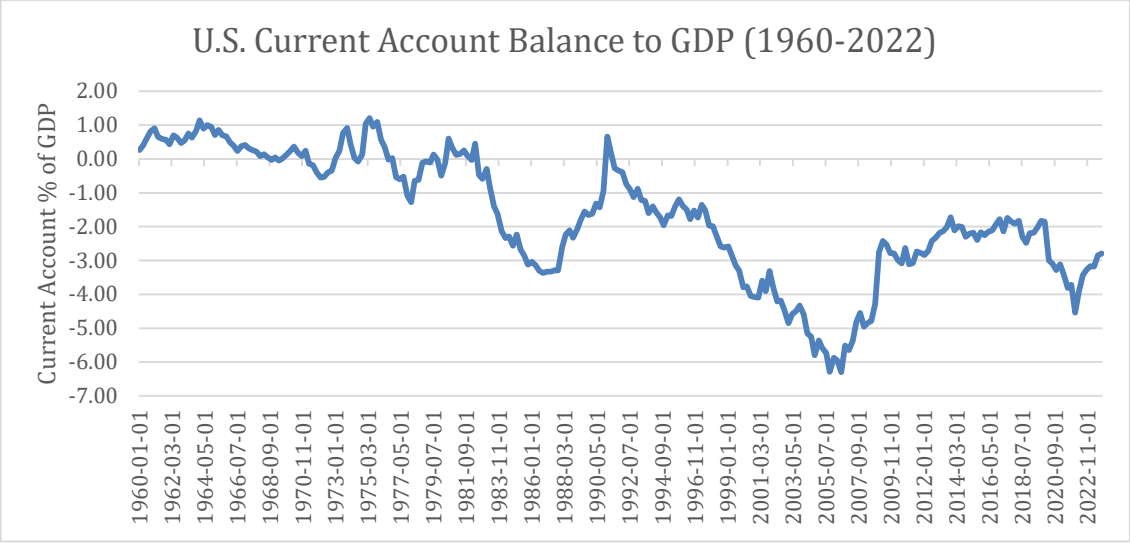
Figure 50: Trade in Foods, Feeds, and Beverages



10 Appendix B: Data Appendix

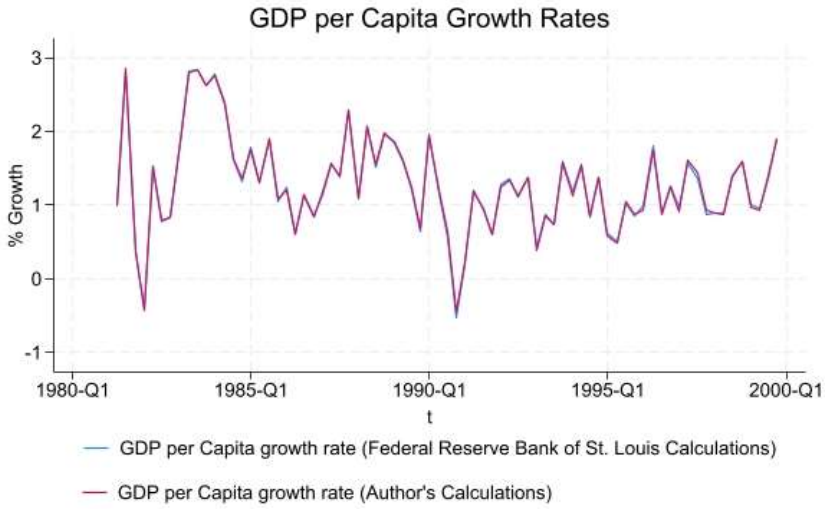
Supplemental charts to U.S. data

Figure 56: OECD Chart on U.S. Current Account to GDP



Source: OECD Data on Current Account Balance to GDP, retrieved from FRED.

Figure 59: GDP per Capita Growth (FRED)



Source: FRED

11 Appendix C: VAR Stability Conditions

This section of the Appendix provides technical results about the VAR analysis conducted in section 4 of the main text.

VAR Model Specification and Stability Tests

The following tests are done on the quarterly data from the sample from 1981Q1 to 1999Q4 used in the full VAR model specified in Section 4 of the main text.

Determination of Lag Level:

Lag	LL	LR	FPE	AIC	HQIC	SBIC
0	320.133	-	2.00E-09	-8.66117	-8.61115	-8.53566
1	385.11	129.95*	5.3e-10*	-10.003*	-9.75293*	-9.37549*
2	390.265	10.31	7.20E-10	-9.70589	-9.25574	-8.57634

The AIC, HQIC, and SBIC test all suggest that the first lag level is optimal. As such, a VAR(1) model is used in the estimation.

Tests for Cointegration:

Johansen Test for Cointegration					Critical Value	
Max Rank	Params	LL	Eigenvalue	Trace Statistic	5%	1%
0	20	385.634		45.5131*	47.21	54.46
1	27	396.186	0.248	24.409	29.68	35.65
2	32	403.826	0.187	9.129	15.41	20.04
3	35	408.167	0.111	0.447	3.76	6.65
4	36	408.390	0.006	-	-	-

The series is integrated at I(0) but not cointegrated.

Augmented Engle-Granger test for cointegration				
		Critical Values		
	Test Statistic Value	1%	5%	10%
Z(t)	-3.916	-4.895	-4.25	-3.924

H_0 = Variables are not cointegrated. Cannot reject the null hypothesis at the 10% level.

VAR Stability:

Eigenvalue stability condition	
Eigenvalue	Modulus
0.7483	0.7483
0.4307	0.4307
0.2608	0.2609
-0.1058	0.1058

All eigenvalues lie within the unit circle. VAR is stable.

Specification Guidance:

Granger Causality Wald Test				
Equation	Excluded	chi^2	df	Prob
Credit Growth	GDP per capita growth	2.369	1	0.124
Credit Growth	REER	0.143	1	0.705
Credit Growth	CAB to GDP	0.301	1	0.583
Credit Growth	ALL	2.722	3	0.437
GDP per capita growth	Credit Growth	1.686	1	0.194
GDP per capita growth	REER	0.253	1	0.615
GDP per capita growth	CAB to GDP	0.153	1	0.696
GDP per capita growth	ALL	2.171	3	0.538
REER	Credit Growth	2.077	1	0.15
REER	GDP per capita growth	0.380	1	0.538
REER	CAB to GDP	0.213	1	0.645
REER	ALL	2.731	3	0.435
CAB to GDP	Credit Growth	8.567	1	0.003
CAB to GDP	GDP per capita growth	9.265	1	0.002
CAB to GDP	REER	4.297	1	0.038
CAB to GDP	ALL	21.230	3	0.000

Interpretation: All variables in the VAR model Granger-cause the Current Account to GDP variable, in the sense that help predict future values of the Current Account to GDP. No other variable Granger causes any other variable at the 5% significance level.