



Master thesis

The tradeoff between costs and gains of sovereign default
The case of Suriname

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This thesis is dedicated to my mother:

Yvonne Gijem Mertowidjojo

“I can do all this through him who gives me strength”

Philippines 4:13

Table of contents

1. Introduction.....	4
2. Literature review	7
2.1 The decision to Default.	7
2.2 Default: The Aftermath	7
2.3 Haircuts and Restructuring.....	8
2.4 Country profile: Suriname.....	9
2.4.1 The Case of Suriname: Opportunities and Challenges	10
2.4.2 Suriname and Economic shocks	11
2.4.3 Suriname and Governance	12
2.5 The Interview: Ugo Panizza.....	14
3. Data.....	15
3.1 Sample development	15
3.2 Determinants of GDP growth.....	17
3.3 Methodology	17
4. Results.....	19
4.1 GDP growth and Default.....	20
4.2 External debt and Default.....	22
4.3 Inflation and Default	23
4.4 Trade and Default.....	25
4.5 Government Consumption and Default.....	26
5. Robustness checks	29
Conclusion	
References	

1. Introduction

Standard and Poors (S&P) define default as a failure to meet payments on the due date or a breach of imputed promise. Defaults are often anticipated in times when the domestic economy is weak (Borensztein & Panizza, (2009 P722)). According to leading economist in Suriname and the Vereniging van Economisten in Suriname (VES), The domestic economy of Suriname has been weak for a while now, with exchange rates tripling in the last 10 years from 2.70 Suriname Dollars for 1 US dollar to 8.50 Suriname Dollars for 1 US dollar (Centrale Bank van Suriname). In recent years Suriname has been taking out loans to boost the domestic economy and execute local projects with the recent being to buy new irrigation pumps (Waterkant.Net, 2019) and to recuperate a state-owned company (Network Star Suriname , 2019).

Borensztein & Panizza, (2009) identify four types of cost of default namely Reputation cost, International trade exclusion cost. Reduction in GDP growth and Political cost. The Reputation cost would include receiving the Rating “D” from a Credit Rating Bureau¹ starting from the moment the Default is announced. Borensztein & Panizza, (2009) imply that a country with high political cost would be more likely to service their debts. By continuing the debt service, governments take a gamble in pursuit of economic recovery. This gamble includes governments choosing to postpone default due to the political cost, while having a small chance of success in their pursuit of economic recovery. However, this gamble could likely result in higher cost of default when the existing tough economic environment only gets worse due to the delay. Borensztein & Panizza further show evidence that of 19 countries that choose to default, 18 of the sitting governments lost the following election and the probability that top economic officials would be changed is about 26% during or after the default year. Seeing that there will be elections in Suriname in the upcoming year 2020, with these political cost a default would then seem undesirable for politicians.

This study focuses on the effect of default on GDP growth in the case of a sovereign default in Suriname while exploring and adjusting the Yeyati & Panizza (2011) data from quarterly to yearly data. This study also adds common controls that from literature affect GDP growth and attains estimation results through a panel regression. Regarding GDP growth, Sturzenegger (2004) show that a default leads to a 2% reduction, which according to Yeyati & Panizza (2011) is being used as a standard. In the case of Suriname consistent with prior studies, a default

¹ Credit Rating bureaus asses the risk of companies and government entities. This risk includes the ability to service their debts and the included interest on due date. The assessment is labelled by a given Credit Rating (a letter) with around 20 levels that range from AAA to D. The letter gives an indication how likely the borrower would keep his promise. This Risk assessment can be helpful for all debt issuers (CFI Education Inc, 2019).

comes with both benefits and setbacks. The benefits include the non-payback of the total amount in debt plus interest, while also expecting a more pleasant economic future instead of going deeper into a recession which seems imminent in the case of a non-default. On the downside, the challenges are starting from the point of declaring default with some cost starting from the moment of announcing default and other costs that result from the economic circumstances. While considering both the benefits and the costs a country evaluates whether the cost outweighs the benefits or otherwise. When the benefits outweigh the costs, the country considers the decision to default. While the heights of the costs may be different for every country, prior studies that perform long term analysis of the cost of default show that these costs are not long-lived. Reaching a point of default can either be due to economic shocks, bad governance or a combination of the two. Instead of a full default, countries might choose a haircut of outstanding debt. Haircuts are defined as a decrease in value. Cruces & Trebesch (2013) show that haircuts can be categorized into two ways. These two ways are classified by the way they are calculated, namely: 1. Market Haircut, mostly used by market participants and 2. Sturzenegger and Zettelmeyer Haircut. In the past nine years, Suriname has faced some economic setbacks ranging from high inflation rates, increasing currency rates, highly shifting growth rates, shifting Net Trade levels and increasing External Debt. Whether these economic shocks are reason enough for default is up for debate. Uribe & Schmitt-Grohe, (2017) state that countries would generally default during economic recessions while Borensztein & Panizza, (2009) analyze the long term effects of default and find the contrary. While countries do not only default during economic recessions, Suriname would not need to wait for extreme economic downturns. This research uses Yeyati & Panizza, (2011) as the criterion.

This research uses controls with respects to the Yeyati & Panizza analysis. The controls include Population growth, Population, Government consumption, Inflation, Unemployment, External debt, Net Trade, Banking crisis dummy, Default dummy, lead of Default and lag of Default. The sample of this research exists mainly out of emerging economies and exists of 40 countries including Suriname. These emerging economies by standard of the World Bank have a middle-income of \$1,026 to \$12,375. Prior literature shows that these emerging economies have volatile economies and external vulnerability due to outstanding debt. The sample includes 21 cases of default.

The results of this research show that a default results in a GDP growth reduction of around 2.3 percentage points in the year of default, which seems to be consistent with prior studies and the before mentioned standard of 2%. While the results seem undesirable, one lag after the default shows a turn for the positive. This would confirm the Yeyati & Panizza quarterly data

analysis that a default seems to be the point of recovery. Regarding Inflation, the results show a decrease of 1.3 percentage points. Unemployment leads to a decrease of 0.98 percentage points of GDP growth. While External debt, Net trade, and Government consumption are associated with an increase of GDP growth, they have no statistical significance. When performing robustness checks using the GDP per Capita as the dependent variable instead of GDP growth the results seem to be almost identical.

The External Debt of Suriname reached a height of 1.7 Billion US Dollars. While taking the World Bank and the IMF outstanding loans into account a full default would result in a remainder debt of 95 million US dollars cost of default while a haircut with the average of 40% (as research by Uribe & Schmitt-Grohe, (2017) shows) would result to a remainder of 1.02 Billion US Dollars. Regarding Net trade the estimation results of the full sample show that there seems to be an investigation effect just one year before default, but recovers during and after the default year. The Net Trade of Suriname has faced highly shifted values that included both high positive and negative values. These high shifts would imply high volatility and default would therefore not follow the same trend as the rest of the sample that faced default. Regarding Government consumption, Suriname has had a rather increasing trend for the past ten year reaching almost double the amount. The Government consumption is established in the Government budget, which gives a forecast of expenditures for the upcoming year. This forecast can result in a deficit or a surplus. In the case of a deficit, this deficit is added to the sovereign debt which could saddle future generations with excessive debt.

This research contributes to the literature on the cost of default by analyzing the cost of default limited to 1 country (Suriname) by using similar variables that were used to investigate the impact of default, the probability, and cost of default in earlier studies. The relevance of this research is to give policymakers (mainly for Suriname) a different outlook on the future of the countries' economy than the one they get from traditional sources (such as their own forecast or long-term credit ratings), but also to shape an alternative option, for the future of the economy of Suriname in the case of debt crises. The buildup of the research is as follows: Chapter 2.literature review sheds light on the opportunities and challenges of Suriname. An explanation of the regression model and the variables and it's generation. Chapter 3. Describes the data that will be used and provides descriptive statistics from the data sources. In chapter 4. The generated results will be presented. The last chapter includes the conclusions of the research.

2. Literature review

2.1 The decision to Default.

Standard and Poors define default as a failure to meet payments on the due date and would result in receiving the rating “D”. Uribe & Schmitt-Grohe, (2017) uses the S&P definition for the exit of default status which states that a country exits default when it resumes payments with the included interest, or as explained in the research by of Tomz & Wright, (2007) when an agreement has been met with the creditors. The decision to default results in immediate, direct and indirect defaults costs. Prior studies identify different types of cost of default namely:

1. Reputation cost, from which the S&P definition shows the rating “D” that would ultimately lead to higher interest rates in the case of future loans and in some cases even discourage the chances of receiving future loans.
2. International trade exclusion cost, prior studies show empirically that after the default there is a decrease in bilateral trade flows.
3. Reduction in GDP growth, which could be the results of both direct and indirect effects of default.
4. Political cost. This study focuses on the short term GDP growth cost. While choosing to default a country faces rather difficult challenges afterwards and may already be engaged in an economic recession at that time. Considering a default includes a tradeoff between two or more options. In the case of default, this tradeoff faces the costs of default on one hand and the benefits on the other. The benefits of default include the amount of total debt (plus interest) that would not need to be paid or in the case of debt restructuring, the remission amount (difference between old and new debt amount). On the short-run the cost of default includes an amount of GDP loss due to GDP growth reduction. In a simple manner, this would suggest that countries choose to default whenever the benefits outweigh the cost and choose to service their debt whenever the cost outweigh the benefits. However, empirical studies show surprising results that countries kept on servicing their debt even in times when it seems unlikely (Borensztein & Panizza, 2009).

2.2 Default: The Aftermath

While the likes of Borensztein & Panizza, (2009), Tomz & Wright, (2007), Yeyati & Panizza, (2011) and many more have evaluated the cost of default, one principle that all prior studies would agree on, is that the cost are not permanent. Yeyati & Panizza, (2011) analyze output losses in the case of default while using quarterly data for more accurate identification. This more detailed analysis shows that the point of default actually seems to be the turning point for the economy. They emphasize, however, that this does not suggest that defaults have no cost, but rather that anticipation of default might have played a role in order for a moderated cost.

Borensztein & Panizza, (2009) provide evidence regarding the cost of default and show that:

1. A default leads to a reduction of GDP growth that can range from 0.6 to 2.5 percentage points with no long term statistical significance.
2. Exclusion from capital market right after the default, but no permanent ban.
3. A negative effect on bilateral trade and thus greater cost for export-oriented countries while this cost lasts the longest (approximately 15 years), this too is not Permanent. Export-oriented countries obtain income from exports and while a default leads to a decrease of bilateral trade partners this therefore results in a decrease of income through exports. For the absolute evidence regarding long term costs, we look at the paper by Tomz & Wright, (2007) who do a long-run analysis of the correlation between default and economic activity. They find a rather weak relation between the two. They also show that countries do not only default in what they refer to as “Bad Times”, but also when countries had the ability to pay off their debt. Setting aside that default costs do not tend to go on forever, there still seems to be no study that can perfectly quantify the cost of default, thus keeping in mind that the default cost would be different for any country. These prior studies highlight that exporting countries, emerging economies and bad timing of default might trigger a higher cost. It also seems to be the case that after a default, import-oriented countries are no longer able to finance their imports which ultimately leads to a decrease in imports.

2.3 Haircuts and Restructuring.

In the case of defaults, countries can take on the alternatives of either a full default which would translate to the full amount of debt or a haircut which Uribe & Schmitt-Grohe (2017) define as a decrease in value of both current and future value of expected payments as a result upon debt restructuring. They state that the average value decrease is around 40% of the original. This accepted negotiation of a decrease in value does seem like a better option for the duped party than getting nothing at all in the case of a full default. This haircut is thus agreed upon by both parties. Cruces & Trebesch, (2013) give a list of different cases/definitions of restructuring included in Appendix I. This list includes examples such as negotiations that lead to a decrease volume of debt, a reduction of face value and if the new negotiations include third party support. They analyze debt restructurings between 1970 and 2010 and find an average sovereign haircut of 37% which is very close to the Uribe & Schmitt-Grohe analysis. Cruces & Trebesch, (2013) measure the haircut in 2 ways. One approach is defined as a market haircut that is mainly used by market participants and does not require much information of the old

debt, while the other is defined as used by earlier studies done by Sturzenegger and Zettelmeyer. The calculation of the haircut is as follows:

$$\text{The market haircut: } H_{Mt}^i = 1 - \frac{\text{Present Value of New Debt } (r_t^i)}{\text{Face Value of Old Debt}}$$

$$\text{The Sturzenegger and Zettelmeyer haircut: } H_{SZt}^i = 1 - \frac{\text{Present Value of New Debt } (r_t^i)}{\text{Present Value of Old Debt } (r_t^i)}$$

They go on to explain that the difference between the two calculations include that while the SZ calculation uses the present value for both the new and old debt, the market haircut calculation only does that for the new debt. The reason behind this is that the discount rate accounts for increased debt-servicing capacity. The cost of haircuts might not be as high as in the case of a full default but also tends to have a longer-lasting impact than a default (Cruces & Trebesch, 2013). It also seems that Haircuts are preferred over full defaults.

2.4 Country profile: Suriname

A small country in the continent of South-America, north of Brazil but identified as a Caribbean country. The official name of Suriname is “Republiek van Suriname”. The average temperature of 34 degrees (Celsius). The Official language is Dutch. Regarding politics, Suriname has a democratically elected government with a 5-year term. The population and population growth of Suriname has experienced stable growth of around 1.2% annually with the population total of the latest decade moving from a total of 530,000 to 575,991 people as of 2018. GDP growth (annual%) is 2% in 2018 with a GDP level of 3,427,269.68 USD which translates to a GDP per capita of 5,950.2 USD. Inflation rate 2018 (year avg) is 6.8%. The exchange rate (1 USD = SRD) translates to 7.50 Suriname Dollar September 2018. Unemployment (total % of the labor force) is 7.63% as of 2018.

Figure 1A. GDP growth Suriname 2005-2018

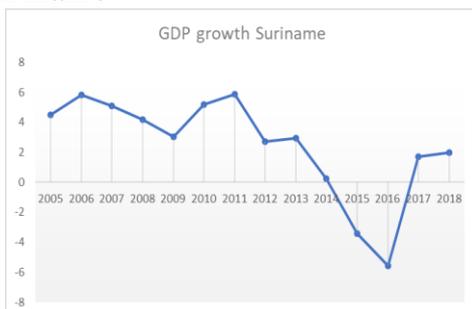
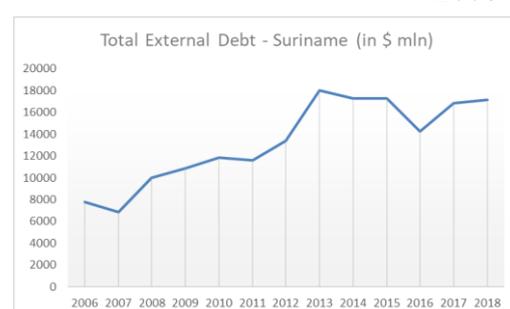


Figure 1B. External Debt of Suriname 2006-2018



2.4.1 The Case of Suriname: Opportunities and Challenges

In the case of Suriname, one might look at the possible costs of default. It is widely known that there is no authority that can enforce payment of sovereign debt. This has also been established in “The Drago Doctrine” which states that a country or a group of, cannot collect the debt from a creditor by usage of military force². So there seems to be different cost of default other than a fixed fine/ cost in that sense. As a result of default countries automatically get the worst available credit rating “D”. With this worst-case scenario rating, one would think that countries only choose to default during difficult economic times or the case of a “no way out” scenario. However, the works of Tomz & Wright, (2007) show that countries do not only default in the case of economic recessions but also in favorable times. They go on to show that there is a relatively weak correlation between default and economic activity, thus it may be a possibility that countries default as an insurance policy or as an opportunistic strategy.

Figure 1A shows the development of GDP growth of Suriname in the last 15 years. Regarding the GDP growth figure 1A. has shown a rather shifting cycle along the recent decade, with continuous positive values before decreasing to negative values of almost -6%. In contrast to the GDP cycle of Suriname, Literature concerning GDP growth shows that a persistent, positive and relatively low GDP growth is preferred over a shifting growth. Borensztein & Panizza, (2009) Evaluate the cost of default on in the sense of GDP growth and follow Chuan and Sturzenegger (2005) who find that default leads to a cost of between 0.6 and 2.0 percentage points. This reduction might seem much to some countries (mostly developed countries) because of the medium to low economic growth standard of around 2% to 3% annually (Amadeo, 2019). For developing countries such as Suriname, it is not strange having growth rates above 5% and growth reduction the following year or so. In that sense, a reduction of 0.6% to 2% does not seem to do as much damage to the developing countries as it does to the developed countries. Between 2013 and 2016 the GDP growth of Suriname suffered a decrease from 2% to -6%. Therefore, the “Sacrifice” of a 2% GDP growth reduction in return for a stable and more promising future seems like a bargain. Figure 1B shows the development of external debt in US Dollars. As the graph shows it takes a sharp increase from 2011 to 2013. However, one might suggest that this type of increase for developing countries is not surprising. On the

² The Drago doctrine was introduced on the 29th of December in 1902 by Luis Maria Drago and was adopted by the second The Hague Conference in 1907. This doctrine was first announced as a reaction to a naval blockade imposed on Venezuela by a group of countries. The exact wording that refers to this in the doctrine: “ *Contracts between a nation and private individuals are obligatory according to the conscience of the sovereign, and may not be the object of compelling force. They confer no right of action contrary to the sovereign will.*”

12th of February 2019, the government of Suriname by the Suriname Debt Management Office (SDMO) reported total foreign debt of 1.7 Billion US Dollars. In the case of a theoretical FULL Default, this would thus be the amount (plus interest) that would NOT be paid back. Keeping in mind “haircuts” or restructuring of debt in the case of a non-full default. Taking the haircut average of 40% used in Uribe & Schmitt-Grohe (2017) the total debt to pay would result in 1.02 Billion US Dollars.

Regarding the exchange rate with the aim to look at the stability and performance of the economy, by the reports of the Central Bank of Suriname (CBVS) they show a rather stable exchange rate from 2004 to 2010 of 2.75 Suriname Dollars (SRD) for 1 USD, which changed in 2011 to 3.35 SRD to now 7.40 SRD for 1 USD in September 2019. The debt of Suriname is denominated in US dollars since the majority of bond holders are foreign.

By analyzing the cost of default for Suriname, this research aims to show whether a default would be feasible. In 2018 the WorldBank reported a 3,427,269.68 USD GDP with the 2% annual growth for Suriname. When using the reduction of 2 percent as a standard value default cost that is consistent with Sturzegger (2004) through Yeyati & Panizza, (2011), this would suggest a year of 0%, no growth after default. In the case of default the GDP value would then be almost identical with the year before due to the 0% growth. In the absence of a default, a consistent growth of 2% would result in the GDP moving from 3,427,269.68 USD to 3,495,815.07 USD.

The recent GDP history of Suriname shows a reduction from 5.8% GDP growth in 2011 to 2.7% in 2012, to -5.6 in 2016 (The World Bank Group, 2019). Although Yeyati & Panizza (2011) clearly state that the cost of default in GDP growth may not seem as harmful, a default with the wrong timing may be more costly than calculated. For Suriname, the cost of default would not only result in a reduction of GDP growth but may also include other costs of default.

2.4.2 Suriname and Economic shocks

This analysis identifies three causes that may lead a country into an unfavorable position where default would seem imminent. Hence, these causes serve as push factors that lead a country into tough economic times. These causes include Economic shocks, bad governance or a combination thereof. While Economic shocks can be divided into 5 different shocks (Supply Shocks, Demand Shocks, Financial Shocks, Policy Shocks, and Technology Shocks), two of the important shocks for Suriname as an emerging economy with a relative small population and reasonable open trade seems to be both international commodity supply and demand shocks as local commodity supply and demand shocks. For the past 15 years, Suriname’s

export has been dominated by three products, namely: Gold, Refined Petroleum and Aluminum Oxide. Appendix II highlights the international prices regarding these commodities. In the past decade, Gold has made up more than 30% of the total exports. While there seems to be a continuously increasing trend for the international average price up until 2012, this trend seems to follow a contradicting path for the following years before stabilizing around the \$1300 mark from 2016 to 2019. While the increasing trend resulted into increasing income for Suriname, the decrease also allowed for an understandable decrease of income. For Gold, the Drawback years are between 2012 and 2016. Around 10% to 20% of the total exports included Refined Petroleum. Relating the price of Crude oil to this commodity the international price experienced drawbacks in the years 2009, 2015 and 2016. These drawback years included decreases of almost half of the preceding price. Such harsh losses would have immense effects on the income of Suriname. Before 2009 the exports of Suriname were made 50% out of Aluminum. However, the Aluminum exports of Suriname has declined since then, to almost less than 5% of the total exports. The drawback years of aluminum included 2009 and 2011 to 2016. In 2009 the decrease has been the most severe with a reduction of more than half of the preceding year. This considerable drawback within just one year while being a 50% share of the export would have a great impact on the incomes. The drawback years of the top 3 exports serve as economic shocks to the income of Suriname through exports. The GDP of Suriname includes drawback years in 2009 and the decreasing trend from 2013 to negative values in 2016. These challenging GDP years are consistent with the export drawback years, showing that economic shocks of international price changes do have an impact on the economic environment which could lead to a testing situation for the sitting government. Other shocks for Suriname include the exchange rate increases.

2.4.3 Suriname and Governance

While governance serves as an important cause, measuring governance can be quite difficult. This difficulty is due to the government change every 5 years while also dealing with different economic and social environments. It also seems to be the case that Good or Bad governance can only be observed afterward. Rontos et al (2015) Recognize six dimensions of Governance: 1. Voice and Accountability which includes the participation of citizens through democratic election, freedom of speech, free media and others. 2. Political Stability and Absence of Violence/Terrorism includes the probability that a government might be overthrown with the use of violent force, terrorism and politically related violence. 3. Government Effectiveness includes the quality of public services, implementation of policies and absence of corruption.

4. Regulatory Quality formulating and implementing of regulations include developing of the private sector. 5. Rule of Law includes property rights, the police, courts, likelihood of crimes, state law and abiding of these laws. 6. Control of Corruption includes the misuse of public power in return for private gain. Kaufmann et al (2010) analyze these indicators based on 30 data sources and report insights of governance by ranging countries' governance indicators from -2.5 to 2.5. Regarding Suriname the report shows the following estimation values for Suriname between 2005 and 2018: Voice and Accountability values of Suriname range from 0.30 to 0.60, with the level of 0.32 in 2018. Political Stability and Absence of Violence/Terrorism reports values that range from -0.02 to 0.26, with a value of 0.08 in 2018. Government Effectiveness shows estimation values ha range -0.66 to -0.02, with -0.66 in 2018. Regulatory Quality formulating and implementing of regulations estimation values shows a range from -0.67 to -0.47 with -0.63 in 2018. Rule of Law estimation values shows levels from -0.24 to -0.04 with the latest in 2018 reaching -0.06. Control of Corruption which many researchers identify as a proxy for bad governance, show estimation values that range from -0.44 to 0.22 with the value of 2018 being -0.21. By statement of the UNESCO: *“International agencies such as UNDP, the World Bank, the OECD Development Assistance Committee (DAC) and others define governance as the exercise of authority or power in order to manage a country’s economic, political and administrative affairs”*. The UNESCO goes on to state that there also seems to be a difference between Governance and Management. Governance sets desired targets, while Management refers to movements that transform these desired targets into results through the usage of available tools. With the aim of measuring governance, the standards of Governance and Management might also give an indication of the performance through the achieved (desired) targets. Wolf (2017) does a success analysis from 2005 to 2015 of desired targets/ norms set by the government, while also accounting for international norms at the beginning of their five-year term. By including both international and government norms the analysis accounts for the economic environment during that time. This economic environment may be different for every government which can make it easier or more difficult to realize the international norms. These targets included 4 macro-economic goals, namely: Sustainable Economic Growth, Inflation, Balance Of Payment and Unemployment. The performance of the governments should be split into two parts because of the government change in 2010 which is right in the middle of the time series. With regard to the sitting government of 2005 to 2010, the analysis reports sustainable economic growth consistent with the international norm while not being able to realize the government norm. Concerning inflation, they were able to reach both the international as the government set the norm in 3 of

the 5 years. Regarding the Balance of Payment, both the international and government norm was reached. The unemployment levels were above the international norm allowing only the government norm which was reached in 3 of the 5 years. The second part of the data from 2010 to 2015 shows that concerning the macro-economic goals, Sustainable Economic Growth the international norm was realized in 4 of the 5 years while not being able to attain the government norm in none of the 5 years. The results for Inflation shows that the government managed to attain the international norm in 4 of the 5 years while the government norm was achieved in 2 of the 5 years. The Balance of Payments included an accomplishment of the norm in 2 of the 5 years. concerning the unemployment rates, the government was not able to reach both the international as the government norm in the 5 years. In an attempt to compare the performances the 4 goals and 5 years each allows for both 20 international norms and 20 government norms. While only observing the government norms the first government managed to attain 12 of their 20 norms while the second government managed to reach 4 of their 20 norms. The second government was re-elected in 2015 and governs up until 2020.

Regarding the corruption level, Transparency International (2018) reports an index which ranks 180 countries with their respectful public sector corruption level. This index ranges from zero meaning highly corrupt to 100 denoting no corruption. With an average of 43, Suriname comes in on rank 73 with the value equal to the average level of 43. Suriname shares the spot with the likes of South Afrika, Morocco, and Bulgaria.

2.5 The Interview: Ugo Panizza

While condoning this analysis on the cost of default there seems to be one name that cannot be overseen. Regarding default analysis, one might suggest Prof. Ugo has an elite status. For this study, he agreed upon an interview to help this study to be as precise as possible. Full questionnaire in Appendix III. On the question regarding his opinion that countries don't get a fine or no international organization that can enforce the payment, prof Ugo suggests it should be highlighted that it is not necessarily the case that countries do not get a fine in a case of default, but rather that it depends on the loan (the deal) and if there are any collateral structures involved. In the case of default on a loan that includes collateral, the duped party would seize/confiscate the collateral. To explain this the Prof used the case of Venezuelan Bond issues of a US refinery that were included as collateral for a loan. In that sense, a default would lead to the duped party taking over these bonds. This therefore implies that costs of default are likely different for every country depending on the agreements of the outstanding loans. In the case of local collateral, it seems to be more difficult. In that case, seizing would include the duped

party to enter the country. this could lead to an international incident or in a worse case even war. While on the subject the Prof. noted that countries never default on loans of the IMF and the World Bank. While looking into this occurrence, it seems to be the case that while other lenders influence their interest rate by credit rating that would give an implication of the risk of even tradeoff whether they should give the loan or not, these institutions would still give out loans on a relatively low rate and would not suggest being politically correct to do so. On the short run this would suggest that the presumed benefit of a full default in the case of Suriname would be decreased by the total amount of outstanding debt of the IMF and WorldBank loan. While looking at the political cost of default one might suggest that there seems to be an egg-chicken situation of some sort. While defaults might have political costs, it could be the case that a country might find itself in that position due to bad governance (corruption). Regarding this, the Prof. noted that it does not necessarily need to be the case of bad governance or mismanagement, but rather that one, or combinations of economic shocks could have played a role in order for a country to be in that position where defaults are considered. While going over the variables used in this research the Prof. explained that these are all endogenous thus would move in the same direction and suggest to be worthy controls. On the question whether the Prof. would suggest default being an option for Suriname he apologized and answered good-heartily that he does not know much about Suriname and the only thing he knows about Suriname is Ruud Guillit³. While the Prof is well informed by the default developments of both Venezuela and Argentina it seems that while being geometrically very close, Suriname has not yet appeared on his radar.

3. Data

3.1 Sample development

For the sample used in this research a part of the data used in Yeyati & Panizza (2011) is being explored. Instead of the quarterly data, this research transforms the quarterly data into yearly data. The default year of this analysis contains the default quarter of the Yeyati data, ending up with a panel of 40 countries (including Suriname). When trying to identify the potential cost of Default in the case of a Suriname, it would make sense to add Suriname to a sample of the same magnitude in order to achieve external validity. This comparable magnitude includes economic similarities between countries in the sample. The results of the full sample would then be applicable to the case of Suriname. For this research, the sample is dominated by

³ Ruud Gullit born on 1 September 1962 in Suriname, is a Dutch football manager and former footballer who played professionally in the 1980s and 1990s as a midfielder or forward (Ruud Gullit, 2019).

emerging economies. According to Amadeo (2019), emerging economies have lower GDP per capita income than the world average. By reports of the World Bank, the world average is currently set on 17,913.5. By the standards of the World Bank, these emerging economies have a middle-income of \$1,026 to \$12,375. With a GDP of \$5,950.2 in 2018, Suriname is then identified as an emerging economy. Prior studies show that emerging economies have a higher external vulnerability and more volatile economies than more developed countries and therefore a higher cost of default. This external vulnerability comes with the understanding that emerging economies have reasonable international debt. This can also be seen by the International Bank for Reconstruction and Development (IBRD)⁴ list of countries which contain debt. This list also contains a dominant number of countries used in this sample. By definition of the World Bank, this list includes middle-income and credit-worthy low-income countries. Emerging economies also tend to have higher shifts in GDP growth rates, high inflation rates (shifting exchange rates) and in many cases political instability (Hoskisson, Eden, Ming Lau, & Wright, 2000). The sample includes 21 default years spread amongst the countries while not all countries include a default year and some go through multiple default episodes. Suriname is added to the data and will function as one of the countries that includes data with regards to all available controls except the Banking crises and Default year (including lags and leads). The list of the countries and their respectful years are included in the Appendix IV.

Figure 2A. GDP growth cycle (mean)



Figure 2B. GDP growth Cycle (median)

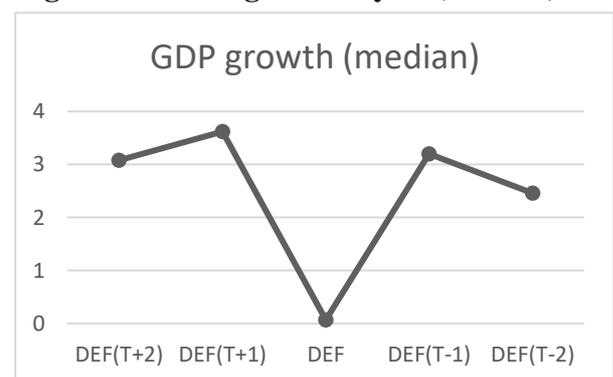


Figure 2 shows the cycle of GDP growth when investigating 21 cases, before, during and after Default with the calculated mean in the respectful years. Figure 2A. Shows that after default,

⁴ “The International Bank for Reconstruction and Development (IBRD) is a global development cooperative owned by 189 member countries. As the largest development bank in the world, it supports the World Bank Group’s mission by providing loans, guarantees, risk management products, and advisory services to middle-income and creditworthy low-income countries, as well as by coordinating responses to regional and global challenges.” (The World Bank Group, 2019)

the GDP growth is at the same level as before the default. This result, however, does not imply that there are no costs of default. For a more in dept look figure 2B shows the median of the full sample from 2 leads from default to 2 lags of default. Both the mean and median show GDP growth regaining nearly the same level as the year before default. For a more accurate analysis Yeyati & Panizza, (2011) perform a study that uses quarterly data to pinpoint a more precise cycle of default, before and after the default decision.

3.2 Determinants of GDP growth

The World Bank determines GDP growth as the result of a country's performance in the according year. This so-called performance is measured through different components. Some of these components will be used as control variables for this research. The baseline regression of Yeyati & Panizza, (2011) identify investments with respect to GDP, population growth, population, secondary education, government consumption, civil rights, change in terms of trade, trade openness as variables that affect GDP in the case of a default. This research takes this baseline regression into account with some adjustments and analyses the components: Population growth, Total Population, Government consumption, Inflation and Unemployment (which affect the GDP through the income of the population), External debt, and Trade. These adjustments to the baseline specifications are due to the availability of data for Suriname but also to analyze variables that have not been exploited in prior studies. While we expect defaults usually to occur during economic recessions we know from literature that variables which are correlated with GDP experience highly shifting developments during these recessions. From this, one would expect that these controls are also positively correlated with defaults.

3.3 Methodology

The model to estimate the cost of default on annual GDP growth is an adjusted model with regards to the baseline model used in Yeyati & Panizza, (2011) which looks as follows:

$$\text{ANNUALGDPGROWTH}_{it} = \beta_0 + \beta_1 \text{INV/GDP}_{it} + \beta_2 \text{POPULATIONGROWTH}_{it} + \beta_3 \text{SECUNDARYEDUCATION}_{it} + \beta_4 \text{LN(POPULATION)}_{it} + \beta_5 \text{GOVERNMENTCONSUMPTION}_{it} + \beta_6 \text{CIVILRIGHTS}_{it} + \beta_7 \text{TERMSOFTRADE}_{it} + \beta_8 \text{TRADEOPENNESS}_{it} + \beta_9 \text{BANKINGCRISES}_{it} + \beta_{10} \text{DEF}_{it+1} + \beta_{11} \text{DEF}_{it} + \beta_{12} \text{DEF}_{it-1} + \varepsilon_{it}$$

The results from this regression found that population growth, secondary education, change in terms of trade resulted in a decrease of GDP growth, while government consumption, civil rights, and investments increased GDP growth. As expected they found that defaults are negatively correlated with yearly GDP growth to about 3 percentage points, while a banking

crises would amplify the cost of defaults with regards to GDP growth with an additional 0.9 percentage point reduction. When adjusting to quarterly data they aim to follow the default phase more precise and find that while defaults lead to an annual GDP growth reduction, the default quarter actually marks the turning point where the economy starts to recover. While it can be challenging to find accurate data this study adjusts the control variables in such a way that there is made use of different endogenous variables with the aim to have enough available data. These controls are consistent with prior studies and are endogenous determinants. While adding other controls it is expected to get results that are in line with these prior studies.

The Expectation signs of the included variables are as follows, Population growth (**neg**), Population (**neg**), Government consumption (**pos**), Inflation (**neg**), Unemployment (**neg**), External debt (**pos**), Nettrade (**pos**), Banking crisis dummy (**neg**), Def (**neg**), Deflead (**neg**), DefLAG (**neg**).

Table 1 Summary statistic

Variable	Obs	Mean	Median	Std. Dev.	Min	Max
COUNTRYID	673				1	40
GDPGROWTH	668	3.684543	4.207005	4.711047	-22.93405	25.00724
POPGrowth	673	1.571132	1.64842	.9750681	-3.847671	3.052886
LNPOP	673	16.80106	17.06164	1.405133	12.51177	20.86095
INFL	663	71.50763	9.333361	440.0628	-1.8	7481.664
UNEMPL	537	8.702987	6.841	6.560895	0	37.161
EXTDEBT	461	3.91	1.96	4.96	0	2.45
NETTRADE	610	2.23	-3.26	7.31	-3.29	3.96
GOVCON	565	4.402927		24.49388	-23.92624	565.5388
BANKINGCRI~S	673				0	1
DEF	673				0	1

Table 1 shows the summary statistic of the variables. Right off the bat, it is clear that the sample includes countries with high economic growth and losses. While most developed countries aim for growth rates between the 2% and 3% level, we can see by the mean and Standard deviation that the sample moves higher and lower than the aim. One interesting statistic is the height of the inflation rate. With a mean of around 71% shows that includes countries with relatively high inflation rates and thus volatile economies. This could also be the case due to default episodes mostly existing in difficult economic times and shows that every countries has a different experience regarding the default phase. For a more accurate overview of the sample one might look at the median which is seemingly moderate. The average of the unemployment rate of the sample does not seem far off from the international aim of around 4 to 5%.

This study makes use of a longitudinal panel regression from which the model used for the analysis of this research is as follows:

$$\text{ANNUALGDPGROWTH}_{it} = \beta_0 + \beta_1\text{POPGROWTH}_{it} + \beta_2\text{LNPOP}_{it} + \beta_3\text{GOVCON}_{it} + \beta_4\text{INFL}_{it} + \beta_5\text{UNEMP}_{it} + \beta_6\text{EXTDEBT}_{it} + \beta_7\text{NETTRADE}_{it} + \beta_8\text{BANKINGCRISES}_{it} + \beta_9\text{DEF}_{it+1} + \beta_{10}\text{DEF}_{it} + \beta_{11}\text{DEF}_{it-1} + \varepsilon_{it}$$

Variables		Source
GDP growth	Real GDP growth (annual %)	World Bank Indicators
POPGROWTH	Population growth rate (annual %)	World Bank Indicators
LNPOP	LOG Total population	World Bank Indicators
GOVCON	General government final consumption expenditure (annual % growth)	World Bank Indicators
INFL	Inflation consumer prices (annual %)	World Bank Indicators
UNEMP	Unemployment, total (% of the total labor force) (modeled ILO estimate)	World Bank Indicators
EXTDEBT	External debt stocks, total (DOD, current US\$)	World Bank Indicators
Banking crisis dummy	Bank Crisis Measure (binary, 1 = crisis)	Caprio & Klingebiel, (2003)
Def:	Beginning of sovereign Default (binary, 1 = Default)	Yeyati & Panizza, (2011)
Def(+1):	Lead of def (binary, 1 = Lead of Default)	
Def(-1):	Lag of def (binary, 1 = lag of Default)	

While the World Bank has most of the data, some data had to be extracted from other sources: (Countries data: Demographic and economy, 2019), (Banco Central de la República Argentina, 2019), (International Monetary Fund, 2019).

4. Results

In an attempt to compare the eventual cost of default for Suriname and the “benefits” of default. The cost in percentages would be transformed into quantities in the same currency as the total debt. The results include both estimation results for the sample, results in the case of default for Suriname and the cost and benefit analysis.

Table 2A. Regression Results

	Reg 1 b/se	Reg 2 b/se	Reg 3 b/se	Reg 4 b/se	Reg 5 b/se
POPGROWTH	5.197 (5.02)	3.567 (4.02)	3.712 (4.20)		
LNPOP	1.920 (15.77)	-2.473 (12.43)	-3.325 (13.22)		
INFLATION	-1.482*** (0.35)	-1.126** (0.35)	-1.174** (0.38)		
UNEMPLOYMENT	-1.003** (0.31)	-0.984** (0.30)	-0.962** (0.31)		
EXTERNAL DEBT	1.220 (0.73)	1.220 (0.73)	1.266 (0.74)		
NET TRADE	0.506 (0.35)	0.654 (0.38)	0.750 (0.36)		
GOVERNMENT CONSUMP~N	-0.002 (0.00)	-0.002 (0.00)	-0.002 (0.00)		
BANKINGCRISIS		-2.863** (0.93)	-2.745* (1.15)		
DEF(T+1)			1.403 (0.88)	-1.949 (1.22)	
DEF(T)			-2.344* (0.85)	-4.202*** (1.09)	-4.025*** (0.97)
DEF(T-1)			0.154 (1.45)	-1.420 (0.90)	
constant	-65.685 (274.16)	8.857 (213.77)	19.987 (226.99)	3.923*** (0.07)	3.811*** (0.03)
R-sqr	0.279	0.313	0.334	0.035	0.026
dfres	13	13	13	39	39
BIC	711.6	710.3	720.8	3815.7	3809.1

* p<0.05, ** p<0.01, *** p<0.001

All regressions include fixed effects. Robust t-statistics in parentheses. Significance levels at * p<0.05, ** p<0.01, *** p<0.001

4.1 GDP growth and Default.

Table 2 shows the estimation results for the cost of default regarding GDP growth. The regressions use yearly adjusted specifications of Yeyati & Panizza, (2011). All models include time fixed effects. Regression 1 excludes the dummy variables. Regression 2 includes the variables of regression 1 while introducing a banking crises dummy. While the results show a negative correlation, it seems there is no statistical significance. Regression 3 includes all the control variables including the dummy for the years of default by the specification of the yearly data of Yeyati & Panizza, (2011). This dummy takes on the value of 1 in the case of a default year and zero otherwise. In an attempt to look at the effects, the year before and after default, the regression also includes dummy variables for lead and lag years of default which takes on the value of 1 in the case of lead and lag respectfully and zero otherwise. Regression 4 and 5

show the case of including only the default dummy's. The values between the brackets include the robust standard errors. Taking the full control set in reg 3 and reg 2 excluding the default phase dummies, the estimations show an expected relation between a banking crisis and GDP growth. The effect of the banking crises is almost as high as the default effect on GDP growth. The regression also shows a GDP growth reduction of around 2.3 percentage points in the year of default, which is in line with both the Yeyati & Panizza, (2011) analysis and the 2% standard of Sturzegger (2004). One lag after the year of default shows a rather turn to positive. This suggests a trend in the positive direction, which is in line with prior studies that show that the default point is indeed the point from which the economy starts recovering. Taking the 2018 WorldBank GDP growth report on Suriname, the results of the estimation would imply for a -0.3% GDP growth in the year of default. With the 2018 GDP level of 3,427,269,681.74 USD (5950.21 USD per cap) a default would then result in 3,348,442,479.06 USD (5,813.36 USD per cap). Cost of default: 78,827,202.68 USD (136.85 USD per capita). While the cost of default in regards to GDP growth might seem moderate for emerging economies and considerable for more developed countries, there might be other costs of defaults that may also have an impact. Other controls are consistent with the expectation signs, with inflation (although statistically insignificant) allowing for a decrease of 1.3 percentage points. This result is in line with the literature that an increase in inflation (decrease of local currency value) would lead to a decrease in the purchasing power of the population and ultimately a decrease in GDP growth. The Colum's 1 to 3 show that regarding the control; Unemployment a 1% increase in employment would lead to a decrease of 0.98 percentage points of GDP growth. While being statistically insignificant it would make sense that the fewer people contribute to the economy would ultimately lead to a decrease of GDP growth. The controls: External debt (no statistical significance), Net trade (not statistically significant) and Government consumption lead to an increase of GDP growth. Most loans/debt (using the example of Suriname's latest external debt agreements of recuperating irrigation pumps and government-owned companies) are mainly spent to execute projects in a direct sense create jobs and ultimately boost the economy, which would explain the increase in GDP growth. When running the same regression with GDP per Capita the results show no deviation from the results with GDP growth.

Table 3. Controls in defaults periods

	EXTDEBT b/se	INFL b/se	NETTRADE b/se	GOVCON b/se	GDPPERCAPITA b/se
DEF (T+2)	-0.005 (0.19)	0.108 (0.09)	0.188 (0.16)	-1.376 (2.04)	-1.767 (1.34)
DEF (T+1)	-0.084 (0.10)	-0.047 (0.16)	-0.215 (0.35)	-1.505 (2.96)	-2.108 (1.24)
DEF (T)	0.012 (0.13)	0.254 (0.20)	0.249 (0.17)	-3.465 (2.79)	-4.183*** (1.03)
DEF (T-1)	0.070 (0.14)	0.498* (0.23)	0.263 (0.26)	-4.790 (2.41)	-1.451 (0.90)
DEF (T-2)	-0.131 (0.26)	0.474* (0.22)	0.340 (0.17)	-2.118 (2.76)	-0.340 (1.24)
constant	23.266*** (0.02)	2.383*** (0.03)	21.421*** (0.04)	9.745*** (0.39)	2.432*** (0.08)
R-sqr	0.001	0.012	0.016	0.000	0.043
dfres	28	39	20	35	39
BIC	1139.2	2058.2	756.0	6655.5	3677.0

* p<0.05, ** p<0.01, *** p<0.001

All regressions include fixed effects. Robust t-statistics in parentheses. Significance levels at * p<0.05, ** p<0.01, *** p<0.001

Table 3 includes the variables External debt, Inflation, Net Trade and the GDP per capita cycle in the phase around the default to a span of 2 years before, and 2 years after default.

Figure 3A. External Debt

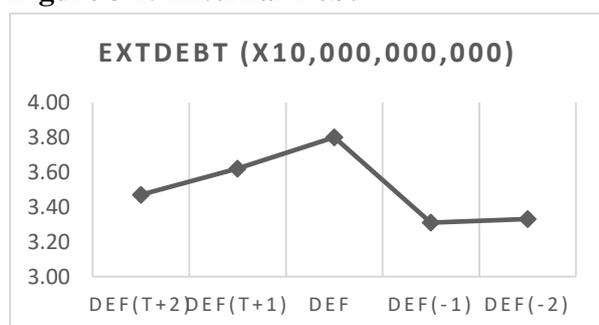
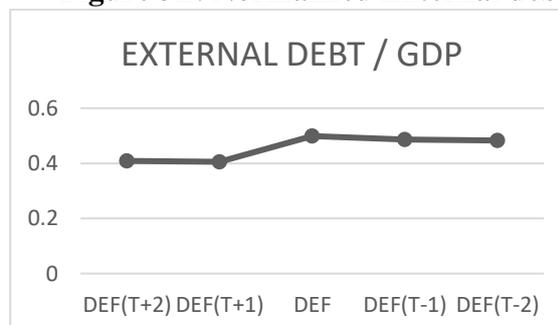


Figure 3B. Normalized External debt



4.2 External debt and Default

Column 1 of Table 3 shows that with one lag after default the external debt decreased and kept that trend up to 2 lags afterward. This results are consistent with prior studies and demonstrates a clear decrease in the case of external debt which is rather intuitive seeing that the result of default is an immediate decrease in outstanding debt. The leads before the default show negative coefficients which might suggest some investigation effects. This investigation effects would be very reasonable considering the default anticipation which exists in the case of default during “Bad times”. Figure 3A shows the means of External debt stocks, total (DOD, current

US\$) during the respectful years regarding the full sample. While it seems clear that there is a drop after the year of default due to the loans that would not be paid back, it also shows that even after the default the sample still possessed external debt. This result would show that while the sample chooses to default, they did not default on all loans (as informed by Prof. Panizza countries don't normally default on loans of IMF and the World Bank), nor did they have a full default (a haircut or debt restructuring would seem in place). While the mean just shows the average of the sample in the case of the default, it should be noted that in some cases the default did not have the same effect as the mean shows. On the contrary, it shows that some countries even increased external debt. For a more accurate presentation of the External debt cycle, Figure 3B shows the normalized External debt of the full sample which includes a countries' External debt divided by its GDP. As stated before the total external debt of Suriname reached an amount of 1.7 Billion US Dollars. In 2019 the World Bank reported an amount of 58 million US Dollars IBRD/IDA loans for Suriname. The IMF reported an outstanding loan of 50 Million SDR (Special Drawing Rights) (International Monetary Fund, 2019), this translates into 37 million US Dollars. While countries normally do not default on World Bank and IMF loans, a full default in the case of Suriname would result in outstanding debt of 95 million US dollars which includes the sum of the World Bank and IMF loan. A haircut average of 40% would result in 1.02 Billion US Dollars. In comparison, a full default would seem like a more favorable outcome if limited to external debt.

Figure 4A. Inflation Rate

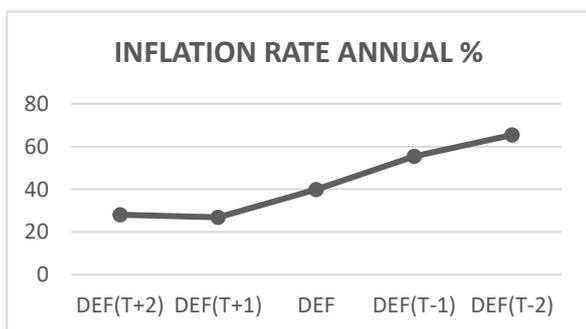
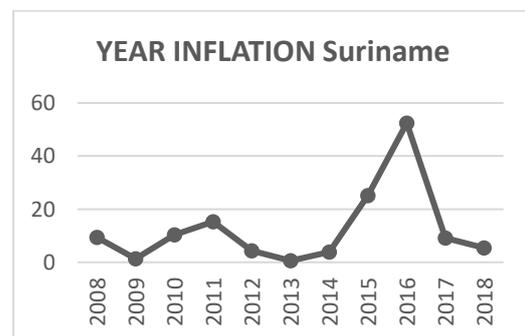


Figure 4B. Inflation Rate Suriname



4.3 Inflation and Default

Hur, Kondo, & Perri, (2013) provide evidence of a relation between inflation and debt dynamics and ultimately, default. They show that pro-cyclical inflation leads to lower interest rates luring governments into debt. Table 3 Colum 2 show an increase that almost doubled just 2 lags after default. The lags of inflation do include statistical significant coefficients while the

leads do not. The lead of default shows a rather interesting result when being the only negative estimation during respectful leads and lags. This negative coefficient might be the result of an investigation effect. Figure 4A shows the inflation average of the sample. While it is expected that defaults take place under economic recessions, we expect relatively high inflation rates in that time period. The sample average starts relatively high. There is a significant increase after the year of default. In some cases, the increase even doubled. This doubling of the inflation rate would suggest that prices of basic consumer goods grow twice as fast with an expected equal income during these years. With this increase, one could only imagine what the political consequences could be in such times. While one of the drivers of inflation seems to be the trust of the public in the monetary policies, a default resulting in unemployment increase, a decrease of Net trade and an increase in goods prices (increased inflation) would surely damage the trust of the public only to result in an amplified increase of inflation. Figure 4B highlights the Inflation Rate of Suriname in the last 10 years. The inflation rate cycle of the past 8 years would serve as evidence of tough economic times or the beginning of such times. While both the mean analysis and the regression show an increase of almost twice the rate just 2 lags after the default year, we expect somewhat the same to occur in the case of default for Suriname. The Central Bank of Suriname reported an inflation rate in 2019 of about 6% and the default would double that rate to a minimum of 12% with the probability of amplification due to loss of trust by the public in monetary policies regarding the future. Figure 4C in the Appendix shows a more accurate presentation of the inflation regarding the full sample, by exploring the sample median during up to 2 years before and 2 years after default. When relating these results to political cost it would not seem likely that current government would suggest a default with the elections being in the upcoming year 2020. However, in the case of a non-Default, this does not suggest a stable inflation, but rather an increasing trend as a result of an investigation effect of what the future might hold.

Figure 5A. Country Net Trade

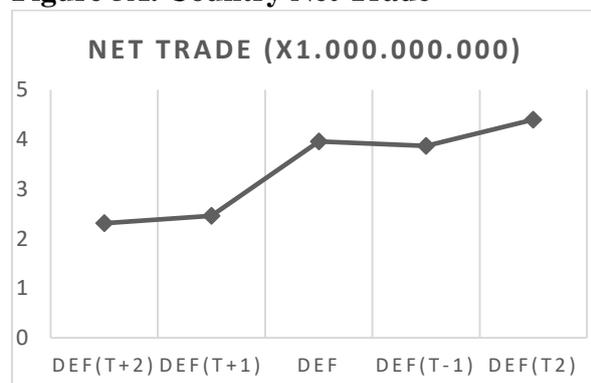
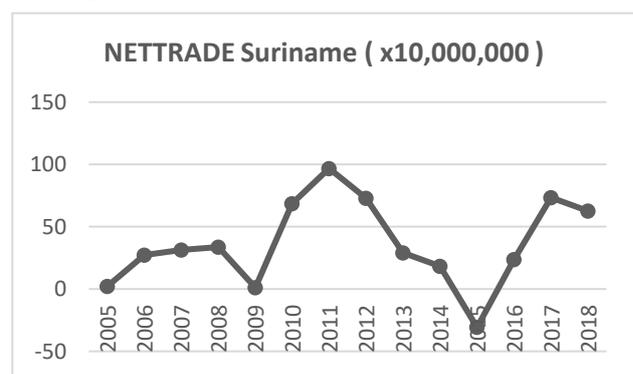


Figure 5B. Net Trade Suriname



4.4 Trade and Default

While trade retaliation is identified as one of the important costs of default. One might argue that it serves as one of the causal effects in the cost a GDP growth reduction. Prior research shows that a default could be the cause of a country's trade level decrease almost to the level of autarky. While evaluating the net trade of the sample in the case of default, Column 3 of table 3 shows that the increasing trend is unbothered by the default and keeps rising afterwards. While one of the consequences of default would be trade exclusion a decrease in exports would imply that the Net trade either stays at the level of default or even shift to a decreasing trend. Figure 5A includes the sample average of 2 years leading up to and 2 years after default. While there is a small reduction after the default year, this change does not seem so meaningful just 2 years after the default due to the continuing increase of trade. This result is in line with the prior study of Borensztein & Panizza, (2009), which show relative short-lived default costs in the case of international trade. Another reason for the increasing trend could be that during and after defaults a country can no longer borrow to finance their imports which results into a decrease in imports. While the averages of the sample show an continuing increase it should be noted that the sample could be divided into two samples. One sample of importing countries and the second sample of exporting countries. When splitting the sample the default episode still has small to no significant effect. Net trade can also be identified as one of the variables through which economic shocks can affect the Economy. In the case of an export country, high international market prices for that particular good would serve as a boost for the economy while an imminent price decrease could change the future of the economy overnight. While price change risks cannot be foreseen, one would expect the government to have a plan in place if this would ever happen. Figure 5B includes the Net Trade for Suriname in the last 10 to 13 years. The trend shows a rather shifting cycle along the years with even a negative Net Trade. While some countries do feel the effects of defaults, the cycle of the Net Trade for Suriname suggests that in the case of default, Suriname could undergo some cost of default that may be due to loss of bilateral trade partners. Figure 5C in the Appendix gives a normalized presentation of net trade during the default phase by dividing the net trade by the GDP to control for outliers.

Figure 6A. Government Consumption

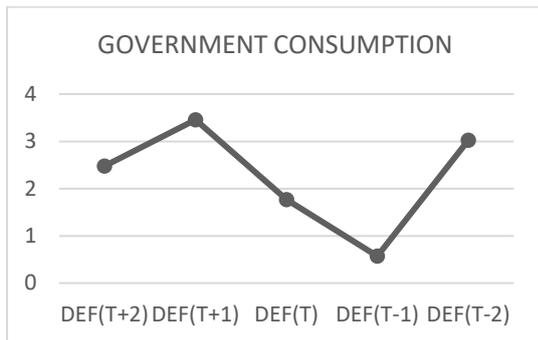
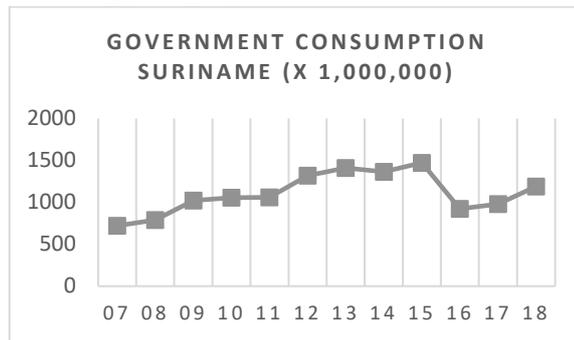


Figure 6B. Government Consumption Suriname



4.5 Government Consumption and Default

Figure 6A shows the sample averages of Government Consumption in percentages of the GDP up to 2 years before and 2 years after default. Until one year before default, this control has been increased before a sharp decrease during and after default. This results could be related to the decrease in external debt, in such that external debt was to be used to execute public projects and ultimately boost the economy. This decrease would allow for a hefty decrease in options in economic perspective for the current government, which would also explain the political cost. A government that can execute fewer projects can also create less employment, resulting in a decrease in social welfare. Consistent with other controls, the effect of Default on Government consumption also seems to be short term. Just 2 years after default shows an increase almost as high as before the default episode. Figure 6B includes the cycle of government consumption in the last decade. While adjusting for the exchange rate increase the data shows an increase of twice as much seven years after the beginning of the data. A noteworthy development comes in 2016 with a reduction from 1.4 Billion Suriname Dollars to 0.9 Billion. However, when looking at the inflation data that shows a sharp increase from 25% to above 50% within that same year that combination would help explain the drop. The same goes for the Net Trade data that show that in 2015 Suriname actually had a negative Net Trade and would have less money to spend the following year. An important matter of government consumption is the government budget, which is defined as the forecast or estimation by a government of its expenditures and revenues, often forecasted for the upcoming year. Also known as the financial or fiscal year (Amadeo, Kimberly, 2019). This forecast can translate into either a deficit or a surplus. A budget surplus can either be the result of spending being lower than revenue or a tax increase in order to control excessive GDP growth or decrease the debt-to-GDP ratio. In the case of a deficit, this deficit is added to the sovereign debt. Amadeo explains that if this deficit addition to the sovereign debt is poorly executed, future generations

would be burdened with excessive debt. The execution of this addition to the sovereign debt would favor future Surinamese government bond holders but burdens future Surinamese taxpayers. If done correctly future generation would possess more financial assets and thus increase welfare, but this might be negative if the majority of the bondholders include foreigners. This serves as an outcome that bad governance can lead to a significant debt increase that gives life to default possibilities. As a precaution countries implant a debt ceiling to keep governments from falling into unsustainable debt. In the case of Suriname, the National Assembly of Suriname introduced in 2002 that allows a 60% debt-to-GDP ratio including a maximum of 10-year jail time for the concerning Secretary of Finance (De Nationale Assemblee Van de Republiek Suriname, 2002). However, this debt ceiling was adjusted a number of three times in the past two years in order to execute more projects and to adjust for budget deficits (De Nationale Assemblee Van de Republiek Suriname, 2016). On the 18th of October 2019, a Bill was introduced by the Party chairmen of the largest political party represented in the coalition to change the fundamental structure of the 2002 law. This Bill created quite a stir due to the effect it might have in the future (Boerboom, 2019). The new bill would allow no debt ceiling and no jail time or fine for the concerning Secretary of Finance (De Nationale Assemblee Van de Republiek Suriname, 2019). On the first of November 2019, this bill was passed by the parliament. This, (now) law included a debt ceiling adjustment from 60% to 95% with the possibility of an additional unspecified amount in the case of calamities. However, the definition of calamities is not specified thus leaving it open for interpretation. In a study done by the World Bank including a dataset of 101 developing and developed economies spanning a time period from 1980 to 2008, they found a sustainable debt to GDP ratio of 77%. Every debt above this 77% results in a 0.017 percentage point reduction of the annual real growth. They also find that this effect is amplified in emerging markets where the limit is set on a 64% debt to GDP ratio. In this sample, every additional percentage results in a GDP percentage point reduction of 0.02. This 95% is well above both the developed and emerging economies standard. One might easily observe this as evidence of bad governance. Table 3 Colum 4 shows the Government consumption estimates up to the second lead and the second lag of Default. The results (no statistical significance) show that default episodes allow for a 3.5 percentage points decrease of Government consumption. There also seems to be an investigation effect that leads up to the default episode. The lags of Default also show the same trend as other controls of the cost being short-lived and almost reaching the same value as before the default occurred. In the Case of Suriname relating government consumption of Suriname to the average analysis regarding the government consumption of the full sample, a

default would result in a decrease from 1.8% of GDP to 0.6% of GDP in the first lag and an absolute increase in the second lag from 0.6% of GDP to 3% of GDP. However, the GDP levels also undergo a Shifting change (much in the same direction of Government consumption), which makes it difficult to precisely quantify the change of government consumption in the absolute values.

Figure 7. GDP cycle

	GDPGROWTH b/se	GDPPERCAPITA b/se
DEF (T+2)	-1.737 (1.38)	-1.767 (1.34)
DEF (T+1)	-2.044 (1.29)	-2.108 (1.24)
DEF (T)	-4.210*** (1.05)	-4.183*** (1.03)
DEF (T-1)	-1.407 (0.93)	-1.451 (0.90)
DEF (T-2)	-0.279 (1.26)	-0.340 (1.24)
constant	3.989*** (0.08)	2.432*** (0.08)
R-sqr	0.040	0.043
dfres	39	39
BIC	3825.3	3677.0

* p<0.05, ** p<0.01, *** p<0.001

All regressions include fixed effects. Robust t-statistics in parentheses. Significance levels at * p<0.05, ** p<0.01, *** p<0.001

Table 4. Cost-Benefit Analysis for Suriname

Cost	Benefit
<ul style="list-style-type: none"> • 2.3 percentage point reduction which would result in -0.3 GDP growth • GDP cost of default: 78,827,202.68 USD (136.85 USD per capita) • Inflation rates doubles from the current rate of 6% to 12% (possibility of an amplified increase) • Receiving the Credit Rating “D” • Decrease in bilateral partners • Decrease of government consumption of 1.2% of the GDP in the first lag 	<ul style="list-style-type: none"> • Decrease of outstanding debt from 1.7 Billion USD To 95 million USD which includes the World Bank and IMF outstanding loan (1.6 Billion USD decrease). • In the case of a Haircut this would result in 1.02 Billion USD (0.68 Billion USD decrease)
<ul style="list-style-type: none"> • Political cost for the current government: Loss of upcoming elections and/or change in top Government officials 	

5. Robustness checks

In order to test the sensitivity of the results, some robustness checks are performed. Figure 7 highlights the cycle of GDP through a countries' GDP growth and GDP per capita in and around the default year. The values between the brackets include the robust standard errors. The first Colom of fig 7 shows that leading up to default there has been decreasing GDP. In the default year, the GDP takes a sharper decrease before changing its projectile. Although some coefficients do are not statistically significant, the default years does have a great significance. Colom 2 of fig. 7 includes the GDP per Capita cycle that shows almost identical results, which is expected. Comparing the results from figure 7 to the analysis of Kuvshinov & Zimmermann (2019) which estimates the cost of default the result of figure 7 can be labelled as conservative. They go on to show the unconditional⁵ GDP growth and the real GDP growth decreasing after default up to 4 percentage points, where the real GDP growth starts recovering (somewhat identical as the results of figure 7). They also show the unconditional GDP growth which decreases to a lever of 6 percentage points before stabilizing at that level. Appendix V includes regressions with the full control set and full sample. in an attempt to check for reverse causality that low GDP causes defaults, Kuvshinov & Zimmermann (2019) state that their causal interpretation relies on the condition that the default definition is exogenous and find that defaulting countries have rather low GDP growth. The goal of the regressions in Appendix V is to include different effects and see if there are any significant changes. Colum 1 is highlights the panel regression with Random effects. Colum 2 highlights the panel regression with fixed effects. The values between the brackets include the robust standard errors. Colum 3 includes a normal linear regression. All regressions include GDP growth as the dependent variable. The estimation results show that the controls log population, Inflation, Unemployment, Government Consumption, Banking crises dummy, Default Dummy all keep the same sign for all 3 regressions. Inflation, Unemployment, Banking Crises, and default included significant results.

⁵ Kuvshinov & Zimmermann (2019) define the unconditional GDP growth as a local projection that controls for local that controls for country fixed effects while excluding the variables GDP growth, External public debt/GDP, Inflation, Openness, Governance quality, Banking crisis probability, Currency crisis probability, War intensity, Coup probability

Conclusion

This research aimed to analyze the cost of default in the case of a Default for Suriname while using the Yeyati & Panizza, (2011) research as the guideline. Borensztein & Panizza, (2009) recognize four types of cost of default: Reputation cost, International trade exclusion cost. Reduction in GDP growth and Political cost. The reputation cost involves credit rating bureaus that provide the international capital market with credit ratings that give information about debt takers in the form of labels (Ratings) with AAA being the best Rating and D being the Worst. These Ratings indicate how likely the debt taker would keep his promise. From the moment a country announces their decision to default they receive Credit Rating “D”. With regard to the political costs, prior studies imply that a country that faces high political costs would be more likely to service their debts. These high political costs would lead to the top officials wagering in their attempt to recover the economy. However, this could result in a higher cost of default in the case of an unavoidable default. Empirical evidence shows that this type of default led to a loss of following election just 18 out of 19 times while increasing the probability to 26% that top economic officials would be changes during or after the default year. Regarding the cost of GDP growth, prior studies accepted a standard of 2% Growth reduction. In terms of a standard growth this standard reduction can be seen as a sacrifice in return for economic recovery. While there are cost, long-term analysis shows that these costs are not long-lived. The benefits of default include not paying back the promised amount and interest in case of a full default. Considering both the benefits and the costs a country evaluates whether the cost outweighs the benefits or otherwise. This trade-off allows the country to make the decision of whether to default or not. When choosing to default there is also a reserved option to choose for a haircut, which includes a decrease in value of the outstanding debt. Haircuts are parted into two types, by way of calculation: Market Haircut, mostly used by market participants incorporates both the face value and the present value while the Sturzenegger and Zettelmeyer Haircut only includes the present value. The average haircut is around a 40% decrease in the value of the initial value. For the sample used in this research a part of the data used in Yeyati & Panizza (2011) is being explored and adjusted. Instead of the quarterly data, this research uses yearly data, with the year of default being the quarter that the country defaulted in. The estimation results show an expected relation between banking crises and GDP growth. The effect of the banking crises is almost the same as the default effect on GDP growth. In an attempt to analyze the cycle of the GDP growth before and after the year of default the regression also consisted of lag and lead dummies which show a rather upwards trend just one lag afterward. This suggests a trend in the positive direction, consistent with prior studies that show that the default

point is indeed the point from which the economy starts recovering. When running the same regression with GDP per Capita the results show no deviation from the results with GDP growth.

Consequences for Suriname

Taking the 2018 WorldBank GDP growth report on Suriname, the results of the estimation would allow for a -2.3% growth reduction in the year of default. While the cost of default in regards to GDP growth might not seem as much, there might be other costs of defaults that may also have an impact. The total external debt of Suriname reached an amount of 1.7 Billion US Dollars. A full default with respects to the IMF and World Bank loan would result in outstanding debt of 95 million US dollars. A haircut average of 40% would result in 1.02 Billion US Dollars. The inflation rate cycle of Suriname in the past 8 years would serve as evidence of tough economic times or the beginning of such times. While both the mean analysis and the estimation results show an increase of almost twice the rate just 2 lags after the default year, we would expect the same to occur in the case of default for Suriname. The Central Bank of Suriname reported an inflation rate of 6% and the default would double that rate 12% with the chance of an amplified rate. Including the Net Trade for Suriname in the last 10 to 13 years, the trend shows a rather shifting cycle along the years with even a negative Net Trade. The cycle of the Net Trade for Suriname suggests that in the case of default Suriname would undergo some cost of default due to the loss of trade partners. Suriname's government consumption in the last decade, While adjusting for exchange rate shows an increase of twice as much in seven years after the beginning of the data leading to budget deficits and intimately increasing debt. A default would lead to less income thus an adjustment to the expenditures would be inevitable

Closing statement

The ultimate goal of this research was to answer one question: “ **Given the recent economic developments and the Current state of Suriname would a default be in place?** ”. While the answer seems to be binary, one cannot answer without an explanation. Considering the benefits, the costs of default for Suriname and the current economic environment instead of a full default, a debt restructuring with a possible 40% haircut seems in place instead of a full default or the pursuit of economic recovery with a small probability of success.

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Appendix I. Definitions of haircuts by Cruces & Trebesch (2013)

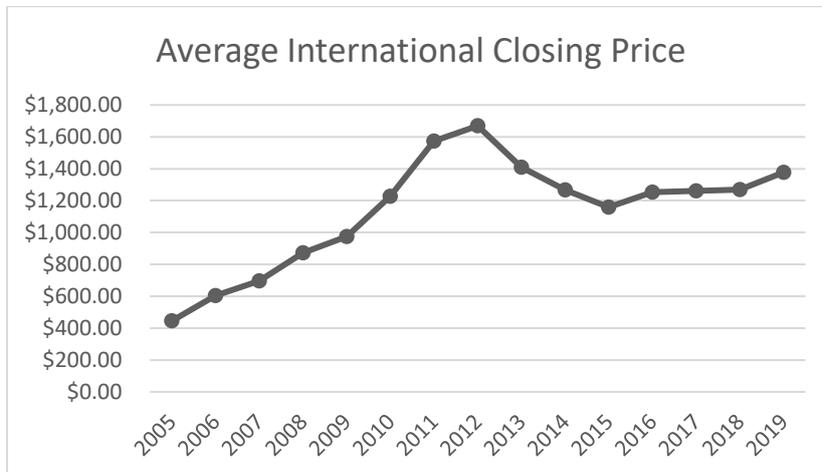
Complete list of 180 restructurings 1970 to 2010. The table also provides details on key features of each restructuring agreement, in particular:

1. The volume of debt restructured in million US dollars,
2. If the restructuring involves bond debt only,
3. If the deal implies a reduction in face value of outstanding debt,
4. If the deal is a buy-back,
5. If the restructuring is a Brady deal,
6. If the deal is donor funded or supported by bilateral or multilateral money, e.g. via funds by International Development Association Debt Reduction Facility (World Bank 2007, 2010),
7. If all the old debt being restructured had fallen due at the time of the restructuring,
8. If the exchange includes previously restructured debt (PRD),
9. If the agreement includes the provision of new money or concerted lending,
10. If the agreement also affects short-term debt, e.g. trade credits, and
11. The Data Quality Index, reflecting the scope of information available.

Appendix II historical Gold price

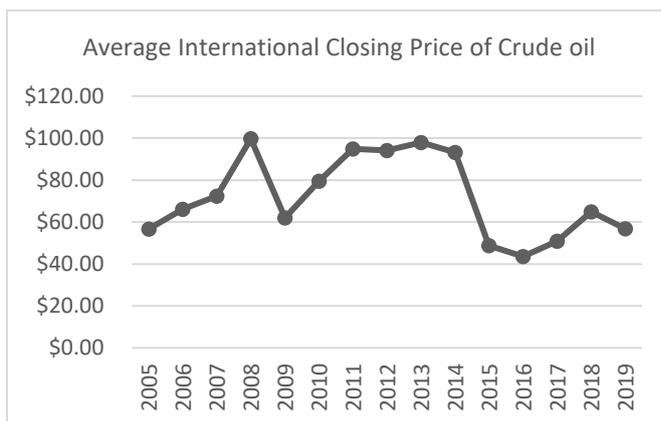
Year	Average Closing Price	Year Open	Year High	Year Low	Year Close	Annual % Change
2019	\$1,376.69	\$1,287.20	\$1,542.60	\$1,270.05	\$1,490.15	16.27%
2018	\$1,268.93	\$1,312.80	\$1,360.25	\$1,176.70	\$1,281.65	-1.15%
2017	\$1,260.39	\$1,162.00	\$1,351.20	\$1,162.00	\$1,296.50	12.57%
2016	\$1,251.92	\$1,075.20	\$1,372.60	\$1,073.60	\$1,151.70	8.63%
2015	\$1,158.86	\$1,184.25	\$1,298.00	\$1,049.60	\$1,060.20	-11.59%
2014	\$1,266.06	\$1,219.75	\$1,379.00	\$1,144.50	\$1,199.25	-0.19%
2013	\$1,409.51	\$1,681.50	\$1,692.50	\$1,192.75	\$1,201.50	-27.79%
2012	\$1,668.86	\$1,590.00	\$1,790.00	\$1,537.50	\$1,664.00	5.68%
2011	\$1,573.16	\$1,405.50	\$1,896.50	\$1,316.00	\$1,574.50	11.65%
2010	\$1,226.66	\$1,113.00	\$1,426.00	\$1,052.25	\$1,410.25	27.74%
2009	\$973.66	\$869.75	\$1,218.25	\$813.00	\$1,104.00	27.63%
2008	\$872.37	\$840.75	\$1,023.50	\$692.50	\$865.00	3.41%
2007	\$696.43	\$640.75	\$841.75	\$608.30	\$836.50	31.59%
2006	\$604.34	\$520.75	\$725.75	\$520.75	\$635.70	23.92%
2005	\$444.99	\$426.80	\$537.50	\$411.50	\$513.00	17.12%

Source: (Macrotrends LLC, 2019)

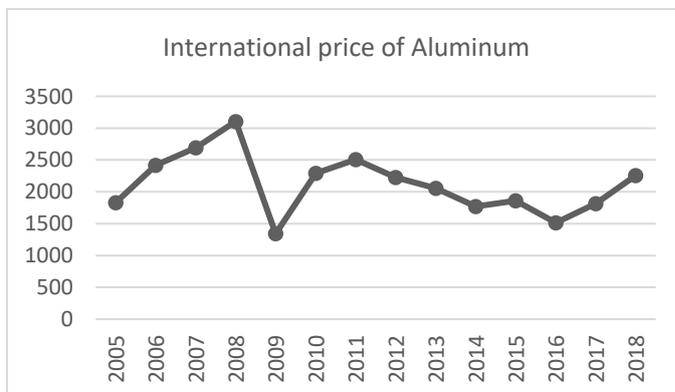


The international price of crude oil.

Year	Average Closing Price	Year Open	Year High	Year Low	Year Close	Annual % Change
2019	\$56.78	\$46.54	\$66.30	\$46.54	\$54.18	19.31%
2018	\$64.90	\$60.37	\$76.41	\$42.53	\$45.41	-24.84%
2017	\$50.84	\$52.33	\$60.42	\$42.53	\$60.42	12.47%
2016	\$43.58	\$36.76	\$54.06	\$26.21	\$53.72	45.03%
2015	\$48.72	\$52.72	\$61.43	\$34.73	\$37.04	-30.70%
2014	\$93.17	\$95.14	\$107.95	\$53.45	\$53.45	-45.55%
2013	\$97.98	\$93.14	\$110.62	\$86.65	\$98.17	6.90%
2012	\$94.05	\$102.96	\$109.39	\$77.72	\$91.83	-7.08%
2011	\$94.88	\$91.59	\$113.39	\$75.40	\$98.83	8.15%
2010	\$79.48	\$81.52	\$91.48	\$64.78	\$91.38	15.10%
2009	\$61.95	\$46.17	\$81.03	\$34.03	\$79.39	78.00%
2008	\$99.67	\$99.64	\$145.31	\$30.28	\$44.60	-53.52%
2007	\$72.34	\$60.77	\$99.16	\$50.51	\$95.95	57.68%
2006	\$66.05	\$63.11	\$77.05	\$55.90	\$60.85	-0.34%
2005	\$56.64	\$42.16	\$69.91	\$42.16	\$61.06	40.82%



Price of aluminum



Appendix III prof. Ugo Panizza questionnaire

1. When a country defaults on sovereign debts there is no international organization that holds the country accountable, neither is there a fine for defaulting on sovereign debt. What is your opinion on this?
2. Can a default be the result of bad governance such as corruption?
3. Regarding the variables of this research do you suggest them to be sufficient?
4. In recent years Suriname has faced some difficult economic times. Would a default be in place?

Appendix IV. full sample and default years

CountryName	Year	Default years
Algeria	1995-2005	
Argentina	1970-2005	1982
Bangladesh	2000-2004	
Barbados	2000-2005	
Brazil	1991-2002	
Bulgaria	2000-2005	
Chile	1980-2002	1983
Colombia	1994-2002	
Cote d'Ivoire	2000-2003	
Croatia	1991-2005	
Cyprus	2000-2005	
Dominican Republic	1980-2002	1982/1999
Ecuador	1991-2002	1999
Fiji	2000-2002	
Hungary	1979-2005	
India	2000-2005	
Indonesia	1993-2002	1998/2000/2002
Korea, Rep.	1970-2005	
Luxembourg	2000-2005	
Malawi	2000-2004	
Malaysia	1970-2005	
Mexico	1970-2005	1982
Morocco	1993-2002	
Nigeria	1970-2005	1983/1986
North Macedonia	2000-2004	
Pakistan	1995-2002	
Paraguay	1970-2015	1997/1998
Peru	1979-2002	1980/1983
Philippines	1981-2005	1983
Poland	1982-2005	
Senegal	2000-2003	
South Africa	1970-2002	1985/1989
Suriname	2005-2015	
Thailand	1993-2002	
Trinidad and Tobago	2000-2004	
Tunisia	1970-2005	
Turkey	1980-2005	
Ukraine	1993-2002	1998/1990/2003
Uruguay	1988-2004	
Venezuela, RB	1993-2002	

Appendix V. full sample, full controls regression

	Reg 1_RE b/se	Reg 2_FE b/se	Reg 3_LIN b/se
POPGROWTH	0.104 (1.01)	2.600 (4.11)	-0.306 (0.87)
LNPOP	-0.093 (0.47)	-3.358 (12.93)	0.302 (0.52)
INFLATION	-0.907** (0.33)	-1.155** (0.38)	-0.861** (0.28)
UNEMPLOYMENT	-0.228* (0.09)	-0.948** (0.31)	-0.158*** (0.04)
EXTERNAL DEBT	-0.008 (0.20)	1.233 (0.73)	-0.119 (0.15)
NET TRADE	0.611 (0.35)	0.738 (0.35)	0.429 (0.34)
GOVERNMENT CONSUMP~N	-0.001 (0.00)	-0.002 (0.00)	-0.001 (0.00)
BANKINGCRISIS	-2.904*** (0.87)	-2.682* (1.12)	-2.972** (0.93)
DEF(T+1)	0.805 (0.56)	1.377 (0.86)	1.071 (1.18)
DEF(T)	-2.911*** (0.85)	-2.302* (0.84)	-2.624 (1.92)
DEF(T-1)	-0.853 (1.41)	0.156 (1.42)	-0.604 (1.48)
constant	-5.319 (4.49)	21.548 (222.07)	-5.663 (4.90)
R-sqr		0.346	0.297
dfres		13	114
BIC	.	716.4	750.8

* p<0.05, ** p<0.01, *** p<0.001

Appendix VI. Addition to Figures

Figure 4C. INFLATION (median)

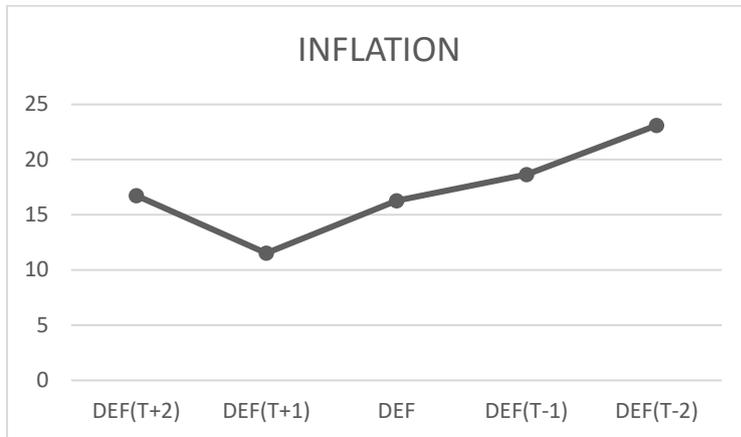
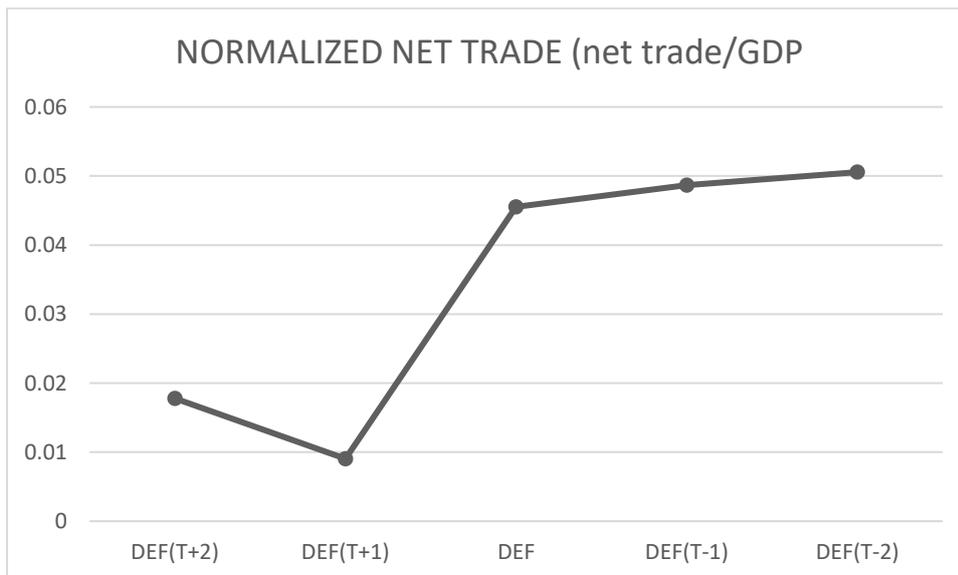


Figure 5C



FULL REGRESSION WITH GDPPERCAPGROWTH

	Reg 1 b/se	Reg 2 b/se	Reg 3 b/se	Reg 4 b/se	Reg 5 b/se
POPGROWTH	4.050 (4.91)	2.458 (3.94)	2.600 (4.11)		
LNPOP	1.771 (15.42)	-2.521 (12.16)	-3.358 (12.93)		
INFLATION	-1.457*** (0.34)	-1.108** (0.35)	-1.155** (0.38)		
UNEMPLOYMENT	-0.988** (0.31)	-0.969** (0.29)	-0.948** (0.31)		
EXTERNAL DEBT	1.188 (0.72)	1.188 (0.72)	1.233 (0.73)		
NET TRADE	0.500 (0.35)	0.645 (0.37)	0.738 (0.35)		
GOVERNMENT CONSUMP~N	-0.002 (0.00)	-0.002 (0.00)	-0.002 (0.00)		
BANKINGCRISIS		-2.797** (0.91)	-2.682* (1.12)		
DEF(T+1)			1.377 (0.86)	-2.012 (1.18)	
DEF(T)			-2.302* (0.84)	-4.176*** (1.07)	-3.994*** (0.95)
DEF(T-1)			0.156 (1.42)	-1.463 (0.88)	
constant	-62.227 (268.13)	10.613 (209.14)	21.548 (222.07)	2.361*** (0.07)	2.242*** (0.03)
R-sqr	0.292	0.325	0.346	0.038	0.027
dfres	13	13	13	39	39
BIC	707.1	705.8	716.4	3667.8	3661.9

* p<0.05, ** p<0.01, *** p<0.001