The Effect of Armed Conflict on Saving Rates: International evidence from 1980 to 2015

Martin Vanegas Arias

Laura Builes Aristizabal

Advisor:

Alejandro Torres Garcia

Abstract

The importance of savings rates on economic growth have been well studied among economic literature (Solow, 1956) finding that economies without higher levels of savings present problems when private investment is needed. Current authors have found the determinants of savings and almost every author agree in variables as disposable income, education level and several other demographic variables (see Grigoli, Herman & Schmidt-Hebbel, 2018 and Doshi, 1994). In contrast, sociopolitical variables as measures for political instability and armed conflicts haven't been included as determinants for savings although these factors should affect the life of individuals and at last their decisions. According to several authors almost a half of the countries have suffered any kind of armed conflict or civil war in the 20th century (see Blattman & Miguel, 2010), so is feasible that these situations have certain effects over human behavior and their decision. To test the hypothesis that armed conflicts have a determinant effect over human behavior and savings, a sample of 65 countries for the period between 1980 to 2015 is constructed and fixed effect of conflicts over the saving rates is tested including the traditional determinants of savings as control variables. The results indicate that the probability of dying, explained in terms of life expectancy and death rate, have a negative effect over the saving rates, the results show that these results are worsened by the appearance of conflict.

Key words: Armed conflict, saving rates, civil war, saving determinants, time preferences.
**JEL Code:** D15, D74, D91, E21

1. Introduction

The determinants and effects of the saving rates on the economic performance has become in one of the main issues both in macro and microeconomic theories, because this flow can explain several facts such as the aggregate investment and household consumption, which positively affect the economic growth in the long run. As has been pointed by Solow (1956), in a closed economy, private savings are the investments that boost a country's economic performance. Moreover, in the case of the saving rates determinants, the main finding is that the income, interest rates, education levels, and demographic variables are basic elements to understand the dynamics of the saving-related decisions. (Schmidt-Hebbel *et al*, 1996; Thimann & Dayal-Gulati, 1997; Carlin & Mayer, 2003; Grigoli, Herman & Schmidt-Hebbel, 2018).

Although economic literature has advance in the understanding of savings rates, one of its main limitation is that in almost cases (especially on the economic field), has been ignored the institutional and sociopolitical frameworks of the countries involved or, in the best case, they assume that these conditions remains stable through the time. However, it is not necessarily true. In fact, since approximately the second half of the 20th century, almost half of the existing countries have suffered some kind of sociopolitical instability related with armed conflicts (Figure 1 of this section and figure 3 from section 3). It implies that most of the explanations about the evolution of savings rates through time are incomplete, in the sense that they do not consider the potential effects of sociopolitical instability.[1]

Recent sociological studies (e.g. Hoffer 2015; Voors et al, 2012; Callen *et al*, 2014), have worked on proving that people in conflict-affected countries seem to behave in a different way compared to others that have been not affected. Specifically, the results suggest that conflict becomes persons more impatient, which means that they seem to prefer higher consumption levels in the present by giving up consumption in the future through lowering savings.

---

[1] See Venieris & Gupta (1986), Blattman & Miguel (2010) for further discussions on the political instability of the 20th century

Figure 1: 45 years of terrorism
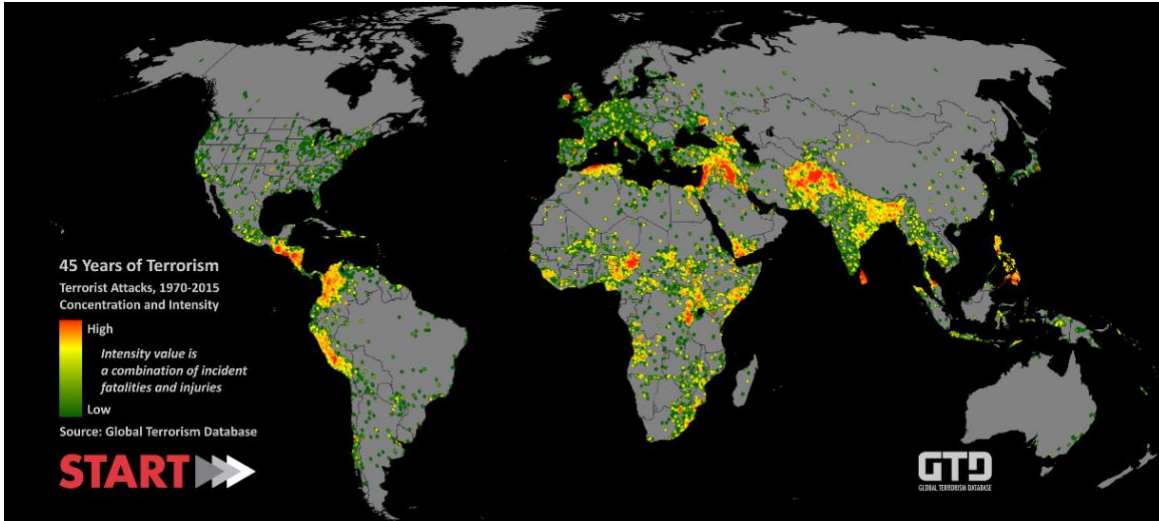
Source: Global Terrorism Database, 2016.

However, can conflict to affect the aggregate saving decisions since an economic point of view? The intertemporal theories of consumption, like Modigliani´s life cycle model or Friedman´s permanent income theory, suggest that it is possible. These theories show that agents decide their consumption paths considering the market interest rates, subjective rate of discount and their life and income expectation. It implies that an armed conflict could affect the consumption and saving rates in two ways: first, the incremental effects on the probability of dying in the short run could induce people to save less money and to increase its present consumption. Second, conflict could increase the subjective rate of discount, which generates a higher preference for present consumption instead saving and future consumption.

Considering these theories and the increasing data of conflicts around the world, the aim of this paper is to contribute to answer the following questions: (i) how could conflict affect the aggregate savings rates? (ii) Is it possible to measure the effect of conflict on savings? (iii) How does economic theory explain this phenomenon? To this end, we use select data for 65 countries from 1980 to 2015. Our results suggest that effectively countries with armed conflict tend to have lower saving rates in comparison which countries that not suffer

any conflict. Additionally, conflicts are related with lower saving rates. Other determinants of the saving rates are income per capita, interest rate, social public expenditure and inflation.

The rest or paper is organized as follows: section two revises the theories that links the saving rate and conflict. In section three, we show some stylized fact related with the world conflicts in 20th century. Section four discussed the methodology and data used in the estimation. Section five includes the main results. Finally, in section 6 we conclude.

2. Savings, Conflict and Theory

The saving rates determinants has been analyzed from the economics and sociological points of view. On this section, we discuss some of the main contributions of each area on this topic.

2.1. The economic intertemporal consumption theories

The basics of modern intertemporal consumption theories are based on the Time preference's theory, which was developed by the Austrian economist Eugen von Böhm-Bawerk (1851 – 1914). In his book "The Positive Theory of Capital" (Böhm-Bawerk, 1891) the time preference is defined as the intertemporal marginal rate of substitution among present and future consumption accepting that not all people are symmetrically patient. Income level, education and location explains differences between agents. In fact, Böhm-Bawerk affirms, "The intensity of the preference varies widely from person to person, as it is attested by that famous scale which ranges from the American Indian who will sell the ancestral hunting grounds for a dram of 'firewater' to the sober, provident and educated scion of Europe's cultured peoples" (in Becker & Mulligan, 1997).

Later, Irving Fisher, one of the very first neoclassical American economist, returns to this theory by stating that several variables have an important effect on this consumption decision, especially income: "Poverty bears down heavily on all portions of man's expected life. But it increases the want for immediate income even more that it increases the want for

future income" (Fischer, 1930). Since the mid-twenties, several economists continue with the classical approach of the time preference theory, as Samuelson (1937) affirms that the time preference discount factor, the relative valuation placed on receiving a good at the present compared with receiving it at the future, can be taken as given or exogenous.

On the counterpart, Gary S. Becker (1930 – 2014), Nobel laureate in 1992, started linking the concept of time preference with its implications on the human behavior, and more specifically, neglecting the classical approach of human rationality. Therefore, a model of time preferences is developed with a focus on a new concept of rational behavior, "A model of patience formation that combines the classical economists' insights with a particular view of what it means to be rational, a conception of rationality that is consistent with many kinds of human frailties, including defective recognition of future utilities" (Becker & Mulligan, 1997). This model shows how income level, mortality probability, addictions, uncertainty and other human issues affect the decision between present and future consumption.

In a few words, Becker tries to endogenize preferences, understanding that humans are not as rational as classical economic theory says, going against Samuelson's theory of exogenous preferences. The effect of variables such as education level, wealth and mortality on time preference are the main findings of his work. For this paper the most important idea taken from Becker is the fact that changes in probability of dying indeed do to affect time preferences. According to the author "consumers increase the weight placed on future consumption in response to a decrease in mortality merely because future consumption becomes more likely" (Becker & Mulligan, 1997).

Although income has been in the center of economic theory since the classic authors, until the mid-50s the decisions about how people decided to manage their income through life was not in the center of the economic agenda. However, in "A Theory of the Consumption Function", Friedman proposes a new perspective about income and consumption. The main axiom of his theory is that individuals desire homogeneous consumption. To achieve this goal, they decide how and in which moment of their life they have to save and when the have to dis-save.

On this theory, it is stated that economic agents decide their future expectations based on the current income and expected income. Consumption decision will then be determined by income shocks throughout the lifetime of the agent, but only permanent shocks have an effect on the long run; temporary shocks only affects saving – dis-saving decision not the consumption decision. Finally, the author concludes that every individual will try to soften their consumption over their life in the homogenous consumption level; so, when the income is higher to the agent's homogenous income, which is the average income level needed for maintaining homogenous consumption, all the excess income over this level will be saved and when this income is lower to this level, the agent will need to find a way to soften their consumption either through dis-saving or going to the credit market.

The ideas behind these theories could be formalized following different authors. De Gregorio (2007), proposes a two-period model when a representative consumer should decide how to consume in each period, looking for maximize his/her intertemporal utility function. The problem is written as:

(1)
$$\max_{C_1 C_2} u(C_1) + \frac{1}{1+\rho} u(C_2)$$

Where ρ represents the intertemporal discount rate, an exogenous variable that determines the impatience of the individual regarding consumption; C_1 and C_2 represent present and future consumption. The individual maximizes constrained by equation 2:

(2)
$$Y_1 + \frac{Y_2}{1+r} = C_1 + \frac{C_2}{1+r}$$

Where Y_1 represents income in the first period and Y_2 income in the second period and r the interest rate. First order conditions after the maximization process are:

(3)
$$C_1 = \lambda$$

(4)
$$C_2 = \lambda \frac{1+\rho}{1+r}$$

Dividing (3) by (4) there is the equation 5:

(5)
$$\frac{C_1}{C_2} = \frac{1+\rho}{1+r}$$

Solving for C_1:

(6)
$$C_1 = \frac{1+\rho}{1+r} C_2$$

Replacing (6) in (2), we obtain the optimal consumption level as:

(7)
$$C_1 = \frac{1+\rho}{2+\rho}\left[Y_1 + \frac{Y_2}{1+r}\right]$$

Equation 7 shows the consumption as a function of the sum of the live income, or the present value of his/her wealth. It implies that a decrease in the life expectation, for example, could affect the present consumption decisions. On the other hand, equation 6 is the so-called "Euler equation". It shows the optimal relationship between present and future consumption, which is determined by the relation between ρ and r. In fact, assuming r as fixed, an increase in ρ, explained by an increase in impatience, will lead to an increase in present consumption in comparison with the future consumption. Given a fixed income, it implies a decrease in savings.

As a conclusion, the intertemporal consumption theories imply that, if armed conflicts affect the impatience rate of the individuals or their expected wealth through a change in their life expectancy, their decisions over consumption and saving will be effectively affected, finding by this way a channel that relate conflict with saving.

2.2. Sociological effects of conflict

Ever since humans started living in communities, they tend to impose their ideas on others using coercion, which means that war and social conflicts have been shaping human history since the dawn of time. Affecting everything around them, from infrastructure to mental capacities. Many knowledge areas have been documenting these effects through history and with different focuses. Blattman and Miguel (2010) documented increasing literature that link political instability with its effects on national savings, investment, income level and economic growth in their war-related literature review. Long-term effects on non-financial assets in poorer countries are another finding, as mentioned by authors:

> "First, house- hold assets may be stolen or destroyed. Mozambicans, for instance, are thought to have lost 80 percent of their cattle stock during their civil war (Tilman Bruck 1996), while many in northern Uganda lost all of their cattle, homes and assets (Annan, Blattman, and Roger Horton 2006; Robert Gersony 1997); cattle and other farm assets often represent most of a rural household's savings." (Blattman & Miguel, 2010)

On the psychological perspective, most of studies concentrates in to analyze the effects of conflict on human behavior, finding that different strong traumatic effects associated with conflict exposure (called post-traumatic stress disorder or PTSD[2]), could affect the individual behavior in terms of consumption and saving. On this line, Venieris and Gupta (1986) propose the inclusion of a "sociopolitical instability" variable (SPI)[3] as an additional argument in the saving function. The main finding of the authors is that "one of the reasons why poor countries do not save as much as the rest of the world is to be found in the fact that these countries do not seem to provide a sociopolitical environment that is conducive to saving."

---

[2] According to Anxiety and Depression Association of America (ADAA) PTSD main symptoms are re-experiencing the trauma, emotional numbness and increased arousal.
[3] Author took the definition of SPI from a pool of variables from Taylor and Hudson (1972)

Hoffer (2015) conduces a controlled laboratory experiment with students from the University of Winston – La Crosse, trying to understand the human choices under the shadow of a latent conflict. The main finding of this procedure was the effect on investment. Throughout the article, the author concludes that "the shadow of conflict is enough to strongly distort resource allocation (36.6 percent less economic investment by participants under the shadow of conflict)". Voors et al (2012) try to measure the impact of exposure to violence on civilians in Burundi, and the effect on their behavior and choices. The main finding is "exposure to conflict is positively correlated with altruistic behavior, risk seeking behavior, and impatience".

Callen et al (2014) developed a similar experiment in Afghanistan, with the aim to measure the relationship between violence and risk preferences. They find that "individuals exposed to violence, when primed to recall fear, exhibit an increased preference for certainty". Keeping on the line of risk aversion, Kim and Lee (2014) estimate the risk attitude of citizens who experienced the Korean civil war in any time of their lives. The authors conclude that there is a positive relationship between a traumatic experience in any stage of live and a risky economic behavior: "It is possible that risk preference is instantaneously altered due to a major traumatic experience, regardless of the age at which an individual experience it. This temporary change may be attributable to a sudden increase in the perceived likelihood of adverse shocks."

3. An Overview of Armed Conflicts

Armed conflicts and their implications have been broadly studied along academic literature, finding that they have important consequences for the history of a country. However, one of the first issues in the discussion is the definition of conflict itself. According with the Uppsala Conflict Data Program at the Uppsala Universitet of Sweden (2017) "An armed conflict is a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths in one calendar year." Where battle-related deaths are defined as "Counted as battle-related deaths is the use of armed force between warring parties in a conflict dyad, be it state-based or non-state, resulting in deaths".

According to these definitions, Blattman and Miguel (2010) states that armed conflicts can be defined in two ways, first, high intensity conflicts, also known as civil wars, with more than 1.000 battle-related deaths per year and second, low intensity conflicts, internal armed conflicts, with at least 25 deaths per annum. Hereinafter, for our own benefit we will define conflicts as those with at least 25 deaths; using this definition, it's possible to state that almost half of the countries in this study have suffered a conflict in the 20th century. Gates et al (2012) state how conflicts affect the economic development of a country in the frame of Millennial Development Goals (MDGs) of the United Nations "the growth loss over the first 5 years of the conflict is very large — about 20% relative to the non-conflict country".

Blattman & Miguel (2010) states that there are several social motivations that lead to an armed conflict, these motivations are "ancient hatreds incite violence, oil wealth breeds separatism, trade shocks trigger insurrections, and income inequality leads to class warfare". These four motivations can explain almost every conflict in the world but before a conflict can be described as one there are some things that have to happen berfore. Taking into account the motivations and the definitions mentioned above the first thing for a conflict is the appearance of an organized group of people identified as a party, this parties in every conflict explains their motivation to fight for their objectives as a revindication of certain rights that have been neglected by the other party, generally the government.

Figure 2 present the durations in years of each conflict in the sample used in this study[4], in this figure are only presented the countries with conflict, in the other 37 countries there is an absence of conflict. In 28 of the 65 countries in the sample had been affected by an armed conflict, this means that more than 40% of the countries had suffered any kind of armed conflict with at least 25 in a single year. The longest conflicts in the sample are in Colombia, in India and in Pakistan with a duration of 36 years, then Israel and Uganda with 34 years and Sudan, Turkey and Sri Lanka with more than 20 years, the rest of the conflict have endured no more than 16 years.

---

[4] For a detailed discussion of the sample selected and its characteristics, see section 4.

Figure 2: Duration of the selected conflicts
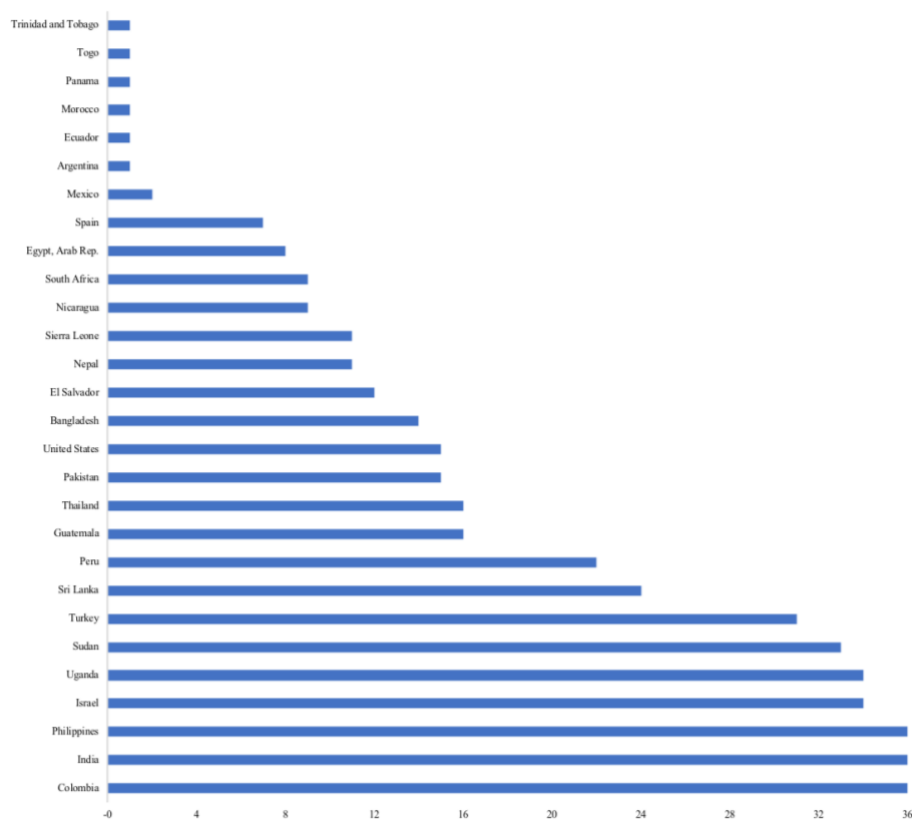
Source: UCDP/PRIO

In the Figure 3 it is possible to see that most of the conflicts happens in middle or low-income regions as Latin America and the Caribbean, South Asia and Sub-Saharan Africa. The evolution trough time of the number of conflicts around the world goes in line with world history, for the period between 1980 and 2015, it's possible to divide the history in three parts, the first part is 1980-1992 that it's the cold war era, in this period of time there is the highest number of conflict. Several dictators in Latin America and the Caribbean and social insurrections in Africa defined the second part is 1992-2001. And the appearance of religious armed groups and drug wars marked the third part is from 2001 to 2015. In general, the number of conflicts hasn't changed over time, in 1980 were 12 active conflicts and then in 2015 were 11 active conflicts, but this not mean a continuity of the same conflicts, as mentioned before, only Colombia, India and Pakistan have suffered 36 years of conflict. In regional terms only in Latin America and the Caribbean the number of conflicts has

11

decreased. The younger conflict is the narco-conflict in Mexico that reached 25 battle-related deaths.

Figure 3: Number of conflicts by region: 1980-2015
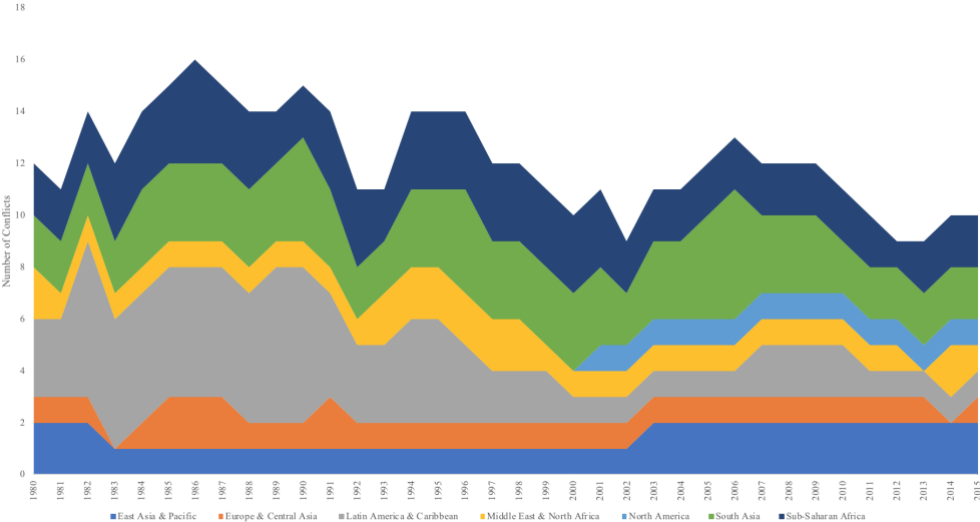
Finally, Figure 4 presents the relation between the number of conflicts, the global death rate and the average life expectancy. The slope of the trend line and the slope of the death rate is very similar, this suggests that an important factor of the death rate are the battle-related deaths. The death rate has been declining trough time, and this is reflected in the life expectancy in the world that has been growing steadily. Relating these two effects it's possible to affirm that the decrease in the number of conflict have had an effect on the increasing of life expectancy.

In the next sections will be presented the way that is approached conflict in terms of its effect over savings. Although, as mentioned before, an armed conflict it's more than battle-related deaths the best way to describe it is with the battle-related because many things have to happen before these deaths like social insurrections, police riots, and several other social interactions that lead to the decision of an organized group of people to use the armed force.

Figure 4: Number of conflicts, life expectancy and death rates, 1980-2015
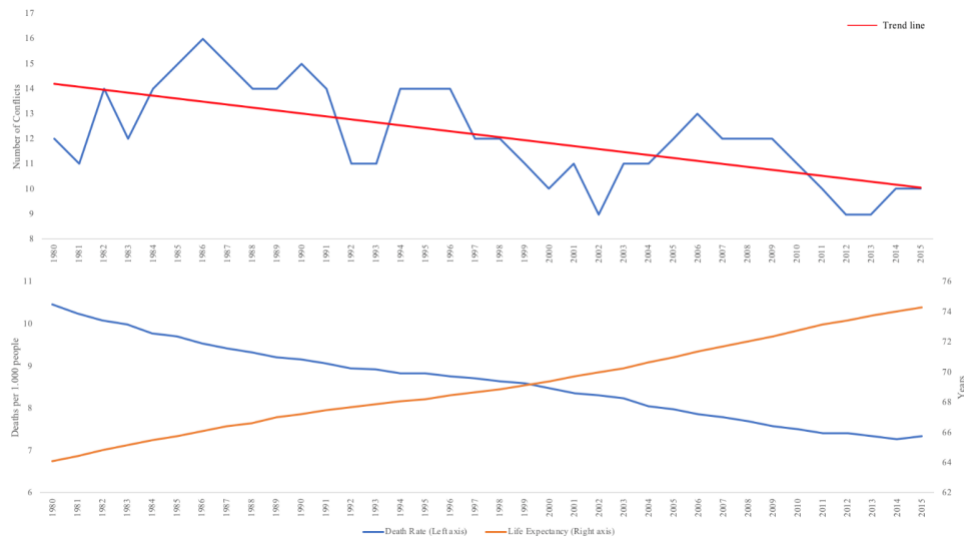
Source: World Bank – UCDP/PRIO – Own calculations

4. Methodology and data

Several authors like Grigoli, Herman & Schmidt-Hebbel (2018) gather the determinants of savings in the academic literature and find out that the main determinants are disposable income, relative prices, poverty and inequality, government spending components and urbanism. Doshi (1994) also stays the importance of variables like income and life expectancy for savings. Ponce de Leon *et al.* (2014) support the inclusion of Co2 as proxy for urbanization; the authors find out that an increase of 1% in urbanizations correlates with an 0,95% increase of emissions.On this line, the proposed equations to be estimated under fixed-effects methodology[5] are:

$$gross\ savings\ GDP_{it}$$
$$= \beta_0 + \beta_1 life\ expectancy_{it} + \beta_2 conflcit_{it} + \beta_3 GDP\ per\ capita_{it}$$
$$+ \beta_4 unemployment_{it} + \beta_5 inflation_{it} + \beta_6 real\ interest\ rate_{it}$$
$$+ \beta_7 health\ expenditure_{it} + \beta_8 education\ expenditure_{it} + \beta_9 co2_{it}$$

---

[5] Fixed-effects were selected according Hausman test.

$$for\ i\ countries\ and\ t\ years$$

$$gross\ savings\ GDP_{it}$$

$$= \beta_0 + \beta_1 death\ rate_{it} + \beta_2 conflcit_{it} + \beta_3 GDP\ per\ capita_{it}$$

$$+ \beta_4 unemployment_{it} + \beta_5 inflation_{it} + \beta_6 real\ interest\ rate_{it}$$

$$+ \beta_7 health\ expenditure_{it} + \beta_8 education\ expenditure_{it} + \beta_9 co2_{it}$$

$$for\ i\ countries\ and\ t\ years$$

The data for each of the 65 countries was taken from two main sources from 1980 to 2015. The time frame is selected because of two main reason; the first one is the one presented in the figure 1, most of the conflicts in the world have happened in the last 50 years, the second one is the availability of the macroeconomic data. All the macroeconomic data from the World Development Indicators of World Bank and the terrorism data from the Uppsala Conflict Data Program from the Uppsala Universitet of Sweden. In the table 1 is presented the source, the definitions and the expected effect of the variables that will be used.

Table 1: Variables and definitions

Variable	Definition	Source	Expected Effect
gross_savings_gdp	The difference between income and consumption (% GDP)	World Bank	-
life_expectancy	Life expectancy of the total population	World Bank	Positive effect
death_rate	Number of deaths occurred during the year by 1.000 people	World Bank	Negative effect
conflict	Dummy variable - 1 if the conflict reached at least 25 deaths in each year	UCDP PRIO	Negative effect
gdp_per_capita	The gross domestic product divided by the population (US$ Dollars)	World Bank	Positive effect
unemployment	Share of the labor force that is without work but seeking for it	World Bank	Negative effect
inflation_gdp_def1	Rate of price change in the economy. The ratio in current local currency to constant local currency.	World Bank	Negative effect
real_int_rate	Real interest rate is the lending rate adjusted for inflation.	World Bank	Positive effect
health_exp	Spending from the government budgets on all health public programs (% GDP)	World Bank	Negative effect
gov_exp_educ2	Government expenditure on education (% of total expenditure)	World Bank	Positive effect
co2	CO2 emissions (metric tons per capita)	World Bank	Positive effect

Source: World Bank – UCDP/PRIO

While the control variables are the same in both cases, the main difference is the way in which probability of dying is measured. According to Becker's theory, this probability affects the time preferences of the agent. In the first case, we use a traditional life expectancy variable, while in the second one is used the death rate as a *proxy* for life expectancy. Although they are very similar and have a negative correlation of -0.7, we decide to include

both of them because in the traditional life expenditure variable could be included many non-observable characteristics that affect the model.

Additionally, a conflict variable was constructed, based on the armed conflict definitions developed by the Uppsala Conflict Data Program from the Uppsala Universitet of Sweden. There is a dummy variable which takes the value of 1 if the country had a number of deaths related with the conflict of 25 or more. On the contrary, we assume that the country does not experiment a conflict and the variable takes the value of 0. It's important to clarify that the measure of the probability of dying does not represent only the probability of dying in a conflict; two countries with the same probability of dying but with different conflict scenarios should present different results in terms of savings and impatience.

Appendix 1 presents the mean and the standard deviation by country for all variables. In this table it is possible to see the differences between countries in terms of the mean and the standard deviation of the variables. For the variable *conflict* the mean represents the proportion of years that there was conflict over the total number of years. In this table is possible to see the heterogeneity of the selected countries in terms of disposable income, comparing the average GDPs per capita of the countries it's clear that the sample represents all income levels. From low income like Uganda with an average GDP per capita of $418,71 dollars to high income countries like Canada with a GDP per capita of $50.729,23 dollars. As mentioned before 28 of the 65 countries in the sample presents at least one year of conflict.

5. Estimation and results

Before the econometrical results there are several correlations that confirm the relationship between conflict and other important variables for the analysis. Figures 5 and 6 present scatter plots with different interactions between years of conflict, life expectancy, death rate and saving rates.

First, in figure 5, life expectancy has a negative correlation with years of conflict, which suggest that more years with conflict leads to an increase in deaths and a decrease in

the life expectancy, and death rate. Also, a positive correlation with GDP per capita, in general terms high income countries tend to have a higher life expectancy, and with savings, this fact supports the Becker's theory of time preference.

Figure 5: Life expectancy correlations
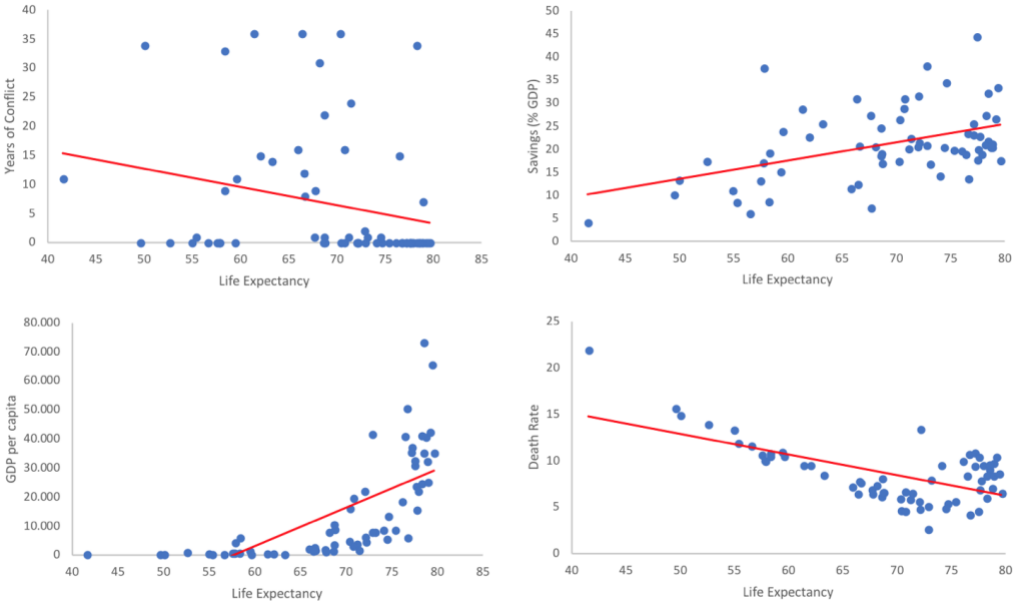
Source: World Bank – UCDP/PRIO - Own calculations

Second, in figure 6, are presented the correlations between death rate and conflict, savings and GDP per capita. The correlation with conflict is ambiguous because although it is positive, the tendency line is almost horizontal, this could be explained because many countries haven't been affected by an armed conflict, but their death rates are high rates because other factors different from conflict as illnesses and accidents.

The correlation with savings is negative because lower savings are explained by an increase of the probability of dying as stated by Becker. If the death rate is used as a rustic proxy for conflict this correlation supports the hypothesis proposed in this paper because in this variable measure all the deaths of a country in a certain period of time and in countries with armed conflict most of the deaths are related with the conflict. The correlation with GDP per capita is negative and this is explained in the same way as the positive correlation between

life expectancy, countries with a high death rate have many difficulties in terms of social and health expenditure and this is traduced in a lower GDP per capita.

Figure 6: Death rate correlations and savings-conflict correlation
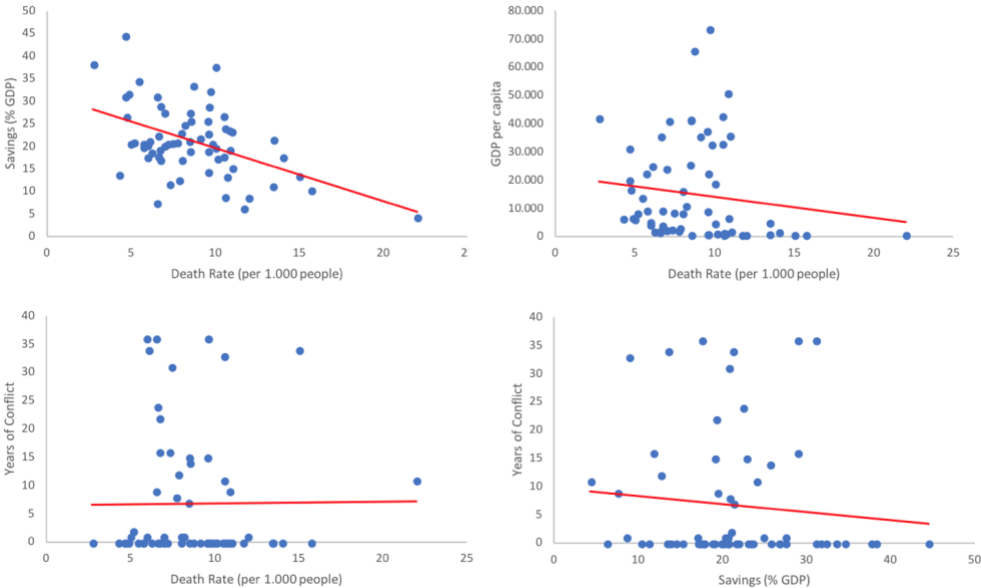
Source: World Bank – UCDP/PRIO – Own calculations

The last correlation is between savings and the number of years, this is a negative correlation. This correlation supports the hypothesis proposed in this paper, the higher the amount of years with a conflict tend to explain lower levels of savings. All this scatter-plots presented in the figures supports the fact that an armed conflict have an important impact for the socioeconomic conditions of a country.

The first table of this section, table 2, presents ambiguous results of the econometrical estimation. Although the signs of the variables are according to the literature, the main problem of this model is the significance of variables like GDP per capita, one of the fundamental determinants of savings. Life expectancy presents a positive effect over savings, because if the probability of dying decreases there will be more incentives to save more. The appearance of an armed conflict with at least 25 deaths in a year have a negative effect over savings also explained by the increase in the probability of dying.

GDP per capita have a positive but not significant effect over savings, this means that an increase in the disposable income of the agent will lead an increase in savings. Unemployment, as a measure for poverty, present the expected negative effect because if there is no income the individual will try to soften their consumption by dissaving. The effect of relative prices, in this case inflation, is negative because if everything is more expensive the individual will have to spend more for the same level of consumption. And finally, the components of government expenditure affect savings as expected, the increase in public health expenditure decreases the necessity for savings and more educated people, explained by an increase in public education expenditure, tends to save more.

Table 2: Econometric results with life expectancy

VARIABLES	(1)	(2)	(3)	(4)	(5)
life_expectancy	0.446***	0.431***	0.436***	0.472***	0.378***
	(0.0494)	(0.0498)	(0.0407)	(0.0413)	(0.0408)
conflict		-1.627**	-1.528***	-1.672***	-1.636***
		(0.750)	(0.529)	(0.526)	(0.533)
gdp_per_capita			-0.000111***	-8.96e-05**	4.29e-05
			(3.74e-05)	(3.75e-05)	(3.18e-05)
unemployment			-0.106***	-0.121***	-0.0542**
			(0.0238)	(0.0246)	(0.0229)
inflation_gpd_defl			-0.00103***	-0.00101***	-0.000998***
			(0.000270)	(0.000268)	(0.000280)
real_int_rate			-0.000876**	-0.000402	
			(0.000429)	(0.000436)	
health_exp				-0.357***	-0.213***
				(0.0742)	(0.0730)
gov_exp_educ2				7.63e-07*	1.51e-06***
				(3.97e-07)	(4.15e-07)
co2					0.532***
					(0.0760)
Constant	-9.609***	-8.313**	-6.190**	-7.847***	-7.199***
	(3.415)	(3.464)	(2.647)	(2.653)	(2.589)
Observations	2,337	2,337	2,006	1,972	2,295
R-squared	0.035	0.037	0.094	0.110	0.104
Number of country	65	65	56	56	65

Standard errors in parentheses

*** p<0,01, ** p<0,05, * p<0,1

Source: Own calculations

In table 3, the effect over savings of each variable is in the same line of academic literature. Death rate have a negative effect explained by to facts; first an increase in the

number of deaths mean shorter life cycles and according to the economic theory this means less savings; the second effect is related to the increase of the probability of dying because the psychological effect behind this increases the impatience of the agents and this means an increase in present consumption. As mentioned before, conflict have a negative effect over the dependent variable and this explains the huge impact that have the escalation of a conflict over savings. The income variable, GDP per capita, have the expected positive effect suggesting that higher income levels determine higher savings.

The poverty and inequality variable, unemployment, presents a negative effect that implies an impossibility to save when there are higher poverty levels. On the same way, inflation, the measure for relative prices, have a negative effect because an increase in prices should lead to a higher present consumption and less savings. The components of the government expenditure have two effects, first the expenditure on health and social services have a negative effect on savings explained by the fact that in many cases people tend to save for private health services and social issues like pensions; and second the education expenditure have a positive effect that is explained because more educated people should save more. Finally, the urbanization measure has a positive effect, as academic literature stays, and this means that more urbanized societies save more.

The real interest rate variable is omitted in the final model (5) because isn't significant in all the models, this suggest that it's ambiguous the effect and the analysis behind this variable. This problem, the ambiguity of the variable, is explained by the low reliability of the data of this variable. The academic literature supports the exclusion of this variable, Grigoli, Herman & Schmidt-Hebbel (2018) found an ambiguous effect of the real interest rate as determinant of saving rates and also found that the variable isn't consistent, the authors use inflation as solution for this problem. The approach for solving this problem is using the inflation, as the authors mentioned before, as proxy of the interest rate because in the long run the risk-free rate tends to converge to the inflation rate.

Table 3: Econometric results with death rate

VARIABLES	(1)	(2)	(3)	(4)	(5)
death_rate	-0.885***	-0.855***	-0.75***	-0.757***	-0.792***
	(0.106)	(0.107)	(0.0798)	(0.0795)	(0.0765)
conflict		-1.804**	-1.843***	-2.034***	-1.790***
		(0.750)	(0.529)	(0.528)	(0.528)
gdp_per_capita			3.49e-05	6.15e-05*	0.000127***
			(3.41e-05)	(3.47e-05)	(2.97e-05)
unemployment			-0.103***	-0.127***	-0.0633***
			(0.0240)	(0.0249)	(0.0228)
inflation_gpd_defl			-0.00115***	-0.00113***	-0.00105***
			(0.000271)	(0.000270)	(0.000279)
real_int_rate			-0.00109**	-0.000747*	
			(0.000431)	(0.000437)	
health_exp				-0.260***	-0.165**
				(0.0739)	(0.0714)
gov_exp_educ2				1.09e-06***	1.87e-06***
				(4.00e-07)	(4.10e-07)
co2					0.622***
					(0.0744)
Constant	28.83***	28.91***	28.17***	28.72***	23.88***
	(0.934)	(0.933)	(0.855)	(0.882)	(0.978)
Observations	2,337	2,337	2,006	1,972	2,295
R-squared	0.030	0.032	0.081	0.092	0.112
Number of country	65	65	56	56	65

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Own calculations

These results go on the line of the academic literature. It's possible to state that an armed conflict affects the saving decisions of an individual because in both scenarios the effect is negative and significant. For the other variables there are mixed results because in the first scenario, table 2, with life expectancy, all the effects are in the same line of the academic literature but not all the variables are significant, and this means a less robust results. In the second scenario, table 3, also the effects are correct, and all the variables are significant so the model with death rate is a robust model that explains better the determinants of savings. According to the results of both tables the best model for analysis and interpretation is the (5) model of the table 3.

It's important to mention the limitations related to fixed effects. The main problem of this approach is that only takes into account the static effect of conflict on savings; not the dynamic effect over time of these armed incompatibilities that affects savings because saving rates in the present are highly correlated with saving rates in the past periods of time.

Although this is the first approach, for further investigations a dynamic panel-data regression should be included.

6. Conclusions

The main finding of this paper is that armed conflicts have a negative effect on saving decisions of the individual for the selected sample between 1980 to 2015. The result of the econometric approach shows a significant and negative effect of conflict on savings. The implications of this result are that conflict resolutions should be a way for increasing savings and in the long term the absence of conflict should mean higher economic growth. Other implications over the individual are the increase of wellness and utility levels because the absence of conflict leads to higher life expectancy. Conflict affects the factor ρ of the individuals in the countries affected and the individuals become more impatient and this leads them to consume more in the present and save less for future consumption. According to the econometric results countries with conflict save around 1,8 percentage points less than those who haven't had an armed conflict.

It is important to highlight the implications of the variable selected for the representation of conflict. This variable only represents the loss of human capital because it's created in function of the conflict related deaths, the idea of this variable is isolate the effects over the individuals, not on the asset losses and the destruction of infrastructure. So, the effect of this variable represents the effects of conflict over the individuals and if is taken the concept of rationality proposed by Becker, individuals react in accordance to the present situations, conflicts should have an effect over the decisions of the individuals. According to this the negative effect found in the methodology section affects, as mentioned above, the intertemporal discount factor ρ assuming a constant interest rate and this means an increase in the impatience of the individual and the preference of present consumption over future consumption.

The policy implications of this paper should be focused in the way armed conflicts have been treated by the NGOs and GOs because effects over the human behavior haven't

been on the agendas of these institutions. In general, infrastructure losses and assets destruction have been the main focus for treating a conflict and although these factors are fundamental for economic growth, psychological factors are ignored in most of the cases. So, the effects over human behavior and should be addressed by governments and NGOs working in post-conflict scenarios according with the academic literature and the econometric results presented before.

For countries going true the end of an armed conflict, as Colombia, building institutional and social confidence should be one of the key issues because they have to restore the confidence of their citizens and if this happens the economic growth will be boosted because there will be an increase of investment explained by the increase of saving rates. Also, it's important to highlight that there are important economic implications of an escalation of a conflict, so governments should work on solving their internal problems and social dissatisfactions because these problems are the main causes that can ignite any conflict.

The main problems of this research are the construction of conflict measures, the availability of conflict-related data, the inexistence of a globally accepted measure for risk aversion or time preference, and the problems related to the methodologic approach. The absence of a risk aversion measure difficult the quantification of conflict over the impatience of the individuals, that why the main finding of this paper is the negative effect no precisely the amount of the effect over the intertemporal discount factor and over savings.

About the conflict measures and data, the problems are in the representation of a conflict, that includes social issues, deaths, infrastructure destruction and many other things, in one variable, for solving this, as mentioned before, was proposed a dummy variable that defines a conflict in terms of deaths, but the logic of this variable is that there are many things that have to happen before the actors start the use of armed forces. The problems related to the methodologic approach were mentioned before but basically in this paper is only taken the fixed effect over time of the variables and not the dynamic one. These problems should be taken into account for further investigations.

Bibliography

Allansson, Marie, Erik Melander & Lotta Themnér (2017) Organized violence, 1989-2016. *Journal of Peace Research, 54(4).*

Becker, G. S., & Mulligan, C. B. (1997). The endogenous determination of time preference. *The Quarterly Journal of Economics*, *112*(3), 729-758.

Blattman, C., & Miguel, E. (2010). Civil war. *Journal of Economic literature*, *48*(1), 3-57.

Böhm-Bawerk, E. V. (1891). *The positive theory of capital*. Macmillan.

Callen, M., Isaqzadeh, M., Long, J. D., & Sprenger, C. (2014). Violence and risk preference: Experimental evidence from Afghanistan. *American Economic Review*, 104(1), 123-48.

Carlin, W., & Mayer, C. (2003). Finance, investment, and growth. *Journal of financial Economics*, *69*(1), 191-226.

De Gregorio Rebeco, J. MACROECONOMIA TEORIA Y POLITICAS. Primera edición, 2007. *Editores Pearson Educación de México, SA de CV*.

Doshi, K. (1994). Determinants of the saving rate: an international comparison. *Contemporary Economic Policy*, *12*(1), 37-45.

Fisher, I. (1930). The theory of interest.

Foa, E. B., Steketee, G., & Rothbaum, B. O. (1989). Behavioral/cognitive conceptualizations of post-traumatic stress disorder. *Behavior therapy*, *20*(2), 155-176.

Friedman, M. (1957). The permanent income hypothesis. In *A theory of the consumption function* (pp. 20-37). Princeton University Press.

Gates, S., Hegre, H., Nygård, H. M., & Strand, H. (2012). Development consequences of armed conflict. *World Development*, *40*(9), 1713-1722.

Gleditsch, Nils Petter, Peter Wallensteen, Mikael Eriksson, Margareta Sollenberg, and Håvard Strand (2002) Armed Conflict 1946-2001: A New Dataset. *Journal of Peace Research 39(5).* Also see [PRIO's webpage](#)

Grigoli, F., Herman, A., & Schmidt-Hebbel, K. (2018). Saving in the world. *World Development*, *104*, 257-270.

Hoffer, A. J. (2015). Choice Under the Shadow of Conflict: An Experimental Investigation. *Browser Download This Paper*.

Kim, Y. I., & Lee, J. (2014). The long-run impact of a traumatic experience on risk aversion. *Journal of Economic Behavior & Organization*, *108*, 174-186.

Pedersen, D. (2002). Political violence, ethnic conflict, and contemporary wars: broad implications for health and social well-being. *Social science & medicine*, *55*(2), 175-190.

Ponce de Leon Barido, D., & Marshall, J. D. (2014). Relationship between urbanization and CO2 emissions depends on income level and policy. *Environmental science & technology*, *48*(7), 3632-3639.

Samuelson, P. A. (1937). A note on measurement of utility. *The review of economic studies*, *4*(2), 155-161.

Schmidt-Hebbel, K., Serven, L., & Solimano, A. (1996). Saving and investment: paradigms, puzzles, policies. *The World Bank Research Observer*, *11*(1), 87-117.

Solow, R. M. (1956). A contribution to the theory of economic growth. *The quarterly journal of economics*, *70*(1), 65-94.

Thimann, M. C., & Dayal-Gulati, M. A. (1997). Saving in Southeast Asia and Latin America compared: searching for policy lessons (No. 97-110). *International Monetary Fund.*

Uppsala Conflict Data Program at the Uppsala Universitet of Sweden (2017) Definitions. *Department of Peace and Conflict Research.*

Venieris, Y. P., & Gupta, D. K. (1986). Income distribution and sociopolitical instability as determinants of savings: a cross-sectional model. *Journal of Political Economy*, *94*(4), 873-883.

Voors, M. J., Nillesen, E. E., Verwimp, P., Bulte, E. H., Lensink, R., & Van Soest, D. P. (2012). Violent conflict and behavior: a field experiment in Burundi. *American Economic Review*, *102*(2), 941-64.

Annex 1

Country	Gross Savings (% GDP)		Life Expectancy		Death Rate (per 1.000 people)		Conflict		GDP per capita		Unemployment (% of labor force)		Inflation		Real Interest Rate		Health Expenditure (% GDP)		Education Expenditure (% of total expenditure)		Co2 (Metric tons. Per capita)	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Argentina	17,03	2,81	73,10	2,07	7,99	0,35	0,03	0,17	8.196,28	1.412,05	8,00	6,43	227,28	608,71 -	16,50	31,96	5,55	2,12	3,56	1,55	3,92	0,47
Bahamas, The	20,70	6,24	71,99	2,10	5,70	0,19	0,00	0,00	22.326,42	1.690,53	6,93	8,19	4,95	7,84	2,67	6,38	2,74	0,49	2,85	0,70	7,12	5,56
Bangladesh	25,68	8,98	63,17	6,08	8,53	2,91	0,39	0,49	537,57	178,72	0,39	6,00	7,12	4,17	1,67	6,57	1,63	0,92	1,72	0,43	0,23	0,12
Benin	11,18	5,09	54,91	3,83	13,42	2,99	0,00	0,00	682,01	73,17	-0,14	2,03	4,51	6,75	12,38	9,07	2,44	0,40	3,68	0,75	0,29	0,18
Bolivia	15,25	7,20	59,36	5,80	11,01	2,71	0,00	0,00	1.652,09	296,65	4,59	1,20	409,12	2.059,49	30,04	28,24	0,09	4,89	6,24	0,93	1,18	0,40
Botswana	37,72	6,32	57,78	5,25	10,01	2,52	0,00	0,00	4.630,79	1.630,26	13,55	8,52	9,24	5,89	3,77	6,80	2,83	0,84	6,79	1,86	1,85	0,69
Brazil	17,09	4,41	68,70	4,25	6,70	0,95	0,00	0,00	9.107,78	1.373,09	7,84	5,60	326,15	675,87	1,12	61,40	3,45	0,44	4,80	0,79	1,76	0,37
Bulgaria	21,58	8,63	72,13	1,17	13,45	1,41	0,00	0,00	4.844,43	1.420,37	22,96	17,37	47,90	164,32	-	-	4,90	1,49	3,87	0,76	7,29	1,70
Cameroon	17,60	3,84	52,55	2,24	14,02	1,70	0,00	0,00	1.342,00	209,16	5,33	1,30	4,82	7,51	14,30	9,64	1,02	0,16	3,02	0,35	0,33	0,16
Canada	20,59	2,57	78,70	2,07	7,14	0,13	0,00	0,00	40.863,50	6.358,20	7,09	2,52	3,10	2,63	4,29	2,63	7,30	0,91	5,94	0,80	16,30	0,81
Chile	19,94	6,18	75,29	2,98	5,73	0,41	0,00	0,00	8.979,15	3.365,48	8,22	2,67	11,22	9,91 -	1,31	18,63	2,24	1,23	3,68	0,80	3,23	1,03
Colombia	17,58	2,90	70,25	2,55	5,96	0,37	1,00	0,00	4.994,89	1.091,14	12,74	3,16	16,14	11,01 -	114,37	138,64	-0,03	7,14	3,88	0,82	1,58	0,14
Costa Rica	13,78	2,21	76,69	1,99	4,27	0,29	0,00	0,00	6.228,43	1.567,98	8,93	4,84	17,02	15,82	4,64	15,38	5,32	1,06	5,18	1,32	1,34	0,34
Cyprus	20,13	5,37	77,56	1,59	6,97	0,24	0,00	0,00	24.011,50	6.016,33	7,31	3,20	4,29	3,54	5,70	4,55	2,06	0,97	4,86	1,35	6,23	1,09
Denmark	23,56	3,27	76,59	2,09	10,79	0,86	0,00	0,00	50.729,23	8.024,77	7,24	2,27	3,14	2,58	-	-	7,38	1,27	7,52	0,95	9,81	1,84
Ecuador	20,31	5,09	71,13	3,89	5,94	1,08	0,03	0,17	4.096,52	551,69	1,44	1,27	2,89	10,54	19,05	21,14	0,95	1,89	4,05	1,66	2,07	0,38
Egypt, Arab Rep.	20,88	5,78	66,58	3,83	7,71	1,87	0,22	0,42	1.883,39	465,46	11,15	2,20	10,69	6,04	3,46	5,05	1,96	0,20	4,52	0,52	1,76	0,47
El Salvador	12,62	3,11	66,48	5,17	7,83	1,67	0,33	0,48	2.832,26	592,14	3,90	5,65	4,16	3,44 -	3,35	23,72	1,10	3,79	3,12	0,50	0,80	0,28
Finland	25,77	4,08	77,13	2,44	9,51	0,27	0,00	0,00	37.243,26	7.808,74	-0,04	18,74	3,49	3,01	2,95	2,89	5,53	1,01	5,94	0,82	10,62	1,26
France	21,87	1,33	78,43	2,65	9,10	0,55	0,00	0,00	35.501,99	5.175,31	7,86	4,30	3,06	3,29	5,48	1,81	8,26	0,33	5,21	0,47	6,21	0,97
Germany	23,33	2,24	77,09	2,57	10,95	0,71	0,00	0,00	35.736,91	6.019,51	5,25	4,65	1,96	1,43	-	-	6,51	2,37	4,61	0,27	11,48	2,63
Ghana	13,39	5,36	57,46	2,77	10,69	1,43	0,00	0,00	1.025,29	277,78	8,96	4,79	30,75	22,40	33,00	40,21	0,77	2,38	5,07	1,96	0,34	0,09
Greece	19,02	7,39	77,85	2,22	9,56	0,48	0,00	0,00	22.327,94	3.767,29	10,90	5,79	9,32	8,48	3,77	5,62	4,77	0,88	2,52	0,82	7,30	1,16
Guatemala	11,75	2,39	65,84	4,94	7,29	2,09	0,44	0,50	2.491,67	301,41	4,36	2,89	9,71	9,62	6,21	4,82	2,19	0,37	2,53	0,68	0,72	0,23
Honduras	18,73	5,97	68,55	3,97	6,21	1,60	0,00	0,00	1.706,36	186,47	6,82	4,92	10,40	8,00	10,08	5,91	4,73	1,73	3,96	1,30	0,76	0,24
Iceland	17,79	5,21	79,61	2,01	6,61	0,33	0,00	0,00	35.509,82	6.624,24	0,31	6,76	14,24	18,13 -	1,89	26,95	7,43	0,43	6,61	1,11	7,16	0,67
India	28,90	6,33	61,30	4,49	9,60	1,92	1,00	0,00	818,18	396,79	4,00	0,25	7,28	2,72	6,17	2,25	1,26	0,21	3,60	0,40	0,96	0,38
Israel	21,23	2,55	78,19	2,70	6,08	0,60	0,94	0,23	24.992,12	4.818,64	9,75	2,48	39,76	82,15	24,69	14,15	4,27	0,69	6,48	0,96	8,05	1,41
Italy	20,63	1,77	78,83	2,77	9,78	0,26	0,00	0,00	32.504,24	4.302,38	11,38	3,21	5,39	5,26	2,95	4,38	5,56	1,08	4,45	0,20	7,11	0,81
Kenya	17,32	5,32	57,73	4,26	10,12	1,97	0,00	0,00	900,81	70,99	10,79	0,98	10,66	7,57	7,44	6,70	3,09	1,53	5,83	0,66	0,27	0,05
Korea, Rep.	34,55	3,85	74,58	5,04	5,44	0,49	0,00	0,00	13.662,01	6.780,02	2,97	1,23	4,94	4,76 -	5,39	14,29	1,63	1,74	3,79	0,73	7,99	2,78
Kuwait	38,23	48,37	72,84	1,31	2,73	0,41	0,00	0,00	41.952,87	4.004,60	1,63	0,85	3,63	14,50	6,31	15,03	3,83	1,89	5,47	2,72	23,95	7,08
Madagascar	6,25	4,64	56,53	5,73	11,68	3,69	0,00	0,00	448,05	50,68	6,83	6,22	14,14	9,37	-	-	0,32	2,68	2,94	0,61	0,10	0,02
Malawi	10,30	5,22	49,54	5,42	15,71	4,15	0,00	0,00	387,47	46,41	7,45	1,07	22,74	20,63	8,43	11,60	5,40	2,54	4,20	0,93	0,08	0,01
Malaysia	31,70	5,25	72,05	2,08	4,85	0,38	0,00	0,00	6.517,41	2.279,41	2,56	1,36	3,37	3,95	1,31	6,35	1,79	0,32	5,66	1,03	5,09	2,08
Malta	23,01	5,08	77,68	2,46	7,97	0,71	0,00	0,00	15.913,99	4.966,89	7,81	2,14	2,86	2,42	3,92	2,51	3,80	2,22	4,48	1,55	5,59	1,05
Mexico	20,97	2,49	72,80	3,15	5,15	0,66	0,06	0,23	8.165,01	848,96	3,51	1,19	27,32	32,89 -	6,32	18,83	3,20	0,97	4,26	0,98	3,94	0,22
Morocco	27,46	3,49	67,62	5,26	6,95	1,48	0,03	0,17	2.076,33	573,32	16,70	6,98	3,83	5,79	5,83	6,16	1,57	0,32	5,13	0,49	1,23	0,35
Nepal	24,06	10,54	59,51	7,44	10,54	3,83	0,31	0,47	444,73	117,29	1,53	2,56	8,88	3,76	1,98	4,39	1,74	0,59	3,51	0,45	0,11	0,07
Netherlands	27,46	1,46	78,23	1,86	8,49	0,27	0,00	0,00	41.314,51	8.065,25	8,79	6,74	2,01	1,58	5,83	6,35	7,41	1,85	5,23	0,43	10,75	0,69
Nicaragua	7,51	12,85	67,69	5,30	6,52	2,01	0,25	0,44	1.413,13	231,20	10,97	3,87	814,16	2.561,48	1.067,99	2.210,30	5,18	2,15	3,53	1,25	0,68	0,13
Norway	32,28	5,09	78,46	2,08	9,68	0,93	0,00	0,00	73.419,88	14.830,12	3,57	1,48	4,49	4,60	-	-	7,25	0,58	6,61	0,75	9,34	1,35
Oman	26,67	11,48	70,33	5,20	4,70	2,17	0,00	0,00	16.390,06	2.391,20	18,64	1,05	4,23	14,98 -	127,05	150,11	3,01	0,73	3,64	0,51	9,69	4,31
Pakistan	22,83	3,12	61,95	2,77	9,55	1,70	0,42	0,50	844,23	166,63	7,06	2,11	9,54	5,10 -	19,65	20,32	0,52	0,36	2,43	0,31	0,72	0,18
Panama	20,63	6,98	74,42	2,18	4,96	0,21	0,03	0,17	5.871,20	1.901,51	14,63	7,89	2,68	2,76	23,68	20,29	7,26	3,09	3,78	0,42	1,80	0,48
Peru	19,27	4,53	68,63	4,58	6,69	1,34	0,61	0,49	3.799,54	944,01	1,18	10,20	298,21	1.110,85	15,43	25,15	2,46	0,42	3,07	0,35	1,28	0,34
Philippines	31,14	12,63	66,31	2,01	6,52	0,64	1,00	0,00	1.744,29	327,28	9,41	2,04	8,80	9,07	4,83	4,91	1,11	0,47	2,71	0,62	0,81	0,14
Portugal	19,81	6,00	76,04	2,88	10,02	0,36	0,00	0,00	18.563,57	3.765,35	6,46	3,74	7,87	7,68	17,05	27,02	4,28	2,59	4,41	0,88	4,61	1,16
Saudi Arabia	31,11	17,10	70,73	3,29	4,62	1,39	0,00	0,00	19.939,52	4.332,00	6,66	1,63	3,97	11,77	-	-	1,92	0,97	5,98	1,15	15,33	2,65
Sierra Leone	4,31	6,86	41,54	4,85	22,00	4,68	0,31	0,47	398,23	75,37	2,98	0,17	32,95	37,68 -	0,60	17,64	3,13	1,17	3,01	0,68	0,13	0,03
Singapore	44,51	5,07	77,46	3,21	4,63	0,20	0,00	0,00	31.130,37	12.230,61	0,93	4,80	1,91	3,01	4,68	2,79	1,62	0,44	3,24	0,44	11,44	2,96
South Africa	19,37	4,66	58,27	3,23	10,86	2,06	0,25	0,44	6.352,07	697,45	29,92	10,69	10,55	4,70	4,17	4,39	2,20	2,14	5,47	0,45	8,80	0,62
Spain	21,29	1,47	78,87	2,39	8,45	0,41	0,19	0,40	25.361,90	5.155,33	13,53	8,10	5,00	3,96	0,45	5,75	5,64	0,67	4,18	0,42	6,15	0,99
Sri Lanka	22,47	3,57	71,34	2,36	6,59	0,40	0,67	0,48	1.831,93	813,60	11,13	5,30	10,54	5,53	26,42	25,27	1,69	0,17	2,45	0,51	0,46	0,22
Sudan	8,86	10,01	58,25	3,28	10,57	1,83	0,92	0,28	1.090,62	356,85	15,08	1,82	37,28	35,68	-	-	0,08	1,95	1,72	0,44	0,22	0,08
Sweden	26,75	3,24	79,13	2,00	10,47	0,62	0,00	0,00	42.470,03	7.989,99	1,50	10,09	3,80	3,25	-	-	6,75	1,81	6,60	0,66	6,10	1,00
Switzerland	33,55	2,34	79,36	2,42	8,70	0,55	0,00	0,00	65.686,80	7.129,74	1,28	4,13	1,70	1,93	2,73	1,41	4,83	2,15	4,82	0,36	5,63	0,62
Thailand	28,97	3,74	70,67	2,73	6,71	0,62	0,44	0,50	3.429,77	1.357,13	4,26	4,83	3,91	2,75	6,80	5,07	1,65	1,19	3,72	0,72	2,66	1,32
Togo	8,61	8,03	55,29	1,90	11,97	1,43	0,03	0,17	522,22	50,72	6,33	0,11	4,89	7,53 -	40,76	40,01	1,80	0,40	4,41	0,68	0,26	0,07
Trinidad and Tobago	24,81	10,31	68,60	0,96	8,17	0,66	0,03	0,17	10.835,85	4.091,92	10,70	5,14	5,69	9,07	7,97	10,80	3,45	1,29	3,87	1,14	21,80	8,65
Turkey	20,73	3,68	68,07	5,26	7,42	1,67	0,86	0,35	8.267,40	2.456,47	8,16	1,81	43,48	34,00	-	-	2,03	2,13	2,62	1,02	3,14	0,84
Uganda	13,53	6,14	49,97	4,97	14,99	3,43	0,94	0,23	418,71	128,55	-0,62	5,28	34,15	52,43 -	3,23	27,06	1,80	0,43	2,91	1,09	0,07	0,03
United Kingdom	17,81	4,96	77,47	2,33	10,48	1,05	0,00	0,00	32.719,62	6.593,25	5,16	3,61	4,16	3,84	2,49	2,86	6,33	0,83	4,81	0,54	8,97	1,09
United States	19,05	1,99	76,39	1,60	8,47	0,28	0,42	0,50	41.136,67	7.503,56	5,04	2,44	2,82	1,88	4,74	2,21	6,56	0,88	5,10	0,28	18,89	1,17
Uruguay	14,44	2,47	74,01	2,07	9,54	0,24	0,00	0,00	8.850,56	2.319,74	9,76	2,71	32,60	30,49	467,08	467,42	5,81	2,40	2,61	0,51	1,68	0,39
Total	21,19	11,50	69,10	9,60	8,64	3,57	0,19	0,39	15.108,73	17.859,49	7,40	7,92	42,27	457,07	27,78	337,42	3,48	2,88	4,45	1,58	5,04	5,76

Source: Own calculations