Authorship Declaration

"I hereby declare and confirm that this thesis is entirely the result of my own work except where otherwise indicated. I acknowledge the supervision and guidance I have received from Sudha Narayanan. This thesis is not used as part of any other examination and has not yet been published."

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MASTER THESIS

The effects of constitutional commitment to social security on social and economic development

EUROPEAN MASTER
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EMILE CAMMERAAT

Studentnumber: 142579

Abstract

*In this paper, we researched the effect of constitutional commitment to social security on social and economic development. We have contributed to the debate on the rights-based approach and to the debate on effectiveness of social security benefits. First of all, we researched the effect of constitutional commitment to social security on old age benefits, survivor benefits, disabled benefits, family benefits and total social security benefits. Subsequently we have researched the effect of the different kinds of social benefits on economic growth, inequality, poverty, unemployment and life expectancy. We did this by using both OLS-models and TSLS-models. In the latter we took a self-created interaction variable law*politics and the lag values of the different social benefits as instrumental variables. We controlled for GDP per capita, capital formation, trade, tertiary school enrollment, government consumption, inflation and a time trend. Six specifications were used to check for non-linear effects, combined effects and to correct for endogeneity. We found positive significant effects of commitment to social security in the constitution on all different kinds of social benefits. The implication of this is that constitutional commitment to social security has an effect on social and economic development, which is in line with the rights-based approach. No effect of social security benefits on GDP growth is found. In general, negative significant effects of social security benefits on poverty and inequality and positive significant effects of social security benefits on unemployment and life expectancy are found. However, these results are not robust in all specifications and differ for the different kinds of social benefits. We can infer from this results that different kinds of social security benefits have different effects. The findings can be a rationale for social security benefits as we found no negative effect on growth and a negative effect on inequality and poverty and a positive effect on life expectancy. However a tradeoff exists between lower inequality, lower poverty and a higher life expectancy on the one hand and higher unemployment on the other side.*

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1 Introduction

Over the past two decades, we have seen a growing emphasis on universal human rights in the development debate. The focus shifted from a merely market-oriented focus of the Washington Consensus to a broader approach including social rights and the provision of public goods as education, healthcare and social security (Townsend, 2007; World Social Protection Report, 2014).The main argument in favor of the rights-based approach is that it gives an entitlement that can be enforced in court. Without such a right, people are fully dependent on the willingness of the government to provide certain freedoms and public provisions. Also the electoral support of the population may increase if certain freedoms or public provisions are rights. This can be explained by the universal nature of rights, in which the entire population, rather than a subset of the population, has access to this rights. After all, the middle class is more inclined to support a right if they can make use of it than when they are merely contributors. An argument against the rights-based approach is that rights are not always the most efficient way to fulfill goals. For example, for the goal of fighting malnutrition giving food may actually be more effective than giving a minimum income. Another argument against the rights-based approach is that government's deal with limited resources. A rights-based approach may lead to a more equal distribution of the benefits leaving less resources for target groups such as the poorest, homeless or children. For example, pay-as-you-go pension schemes in which every person above a certain age receives a pension paid by the current taxpayers takes a lot of the resources and leaves less resources for other more specific target groups like the poor elderly.

Evidence based policies and laws are very important both for the effectiveness of, as well as for the support for, policies and laws. In this research, we contribute to the literature by focusing on the effects of constitutional commitment to social security on social and economic development. To the extent that such commitment is only operationalized through fiscal transfers, we expect that a possible effect would be possible only by social security benefits, rather than through the effect of the law alone. The research question is therefore split into two sub-questions. 'What are the effects of constitutional commitment to social security on social security benefits?' and 'What are the effects of these social security benefits on social and economic development?' The answer to the first question contributes to research on the effect of the popular rights-based approach, as it provides us with an answer to the question whether rights actually translate into different relevant policies. The second question contributes to the research on the effect of social security as an aspect of the broader approach on social and economic development. Social and economic development are measured by the dependent variables GDP growth, inequality, poverty, unemployment and life expectancy. We have select this dependent variables as they are among the most common variables in the literature to measure social and economic development and because of data availability.

Ben-Bassat and Dahan (2008, 2015) are the first ones that researched the effects of different kinds of constitutional commitment to social rights on different kinds of government expenditure. However, the effects on family benefits are not covered by them. Besides, they did not connect the transfers with social and economic development. The paper of Townsend (2007) and the World Social Protection Report (2014) are the most extensive papers on the effects of social security on social and economic development. But they made no distinction between effects of different kinds of social benefits on

different kinds of social and economic development variables. This paper addresses these gaps and extends their line of research by showing that different kinds of social security benefits have different effects on social and economic development. We used an instrumental variable, constitutional commitment interacting with politics, to deal with the endogeneity issue. This approach is, to our knowledge, not been done before. This paper does not only add to the limited literature on both sub-questions, but is also the first modest but novel attempt to connect the two sub-questions. This is crucial as the rights-based approach for social security is only desirable if rights do not only have an effect on transfers but have genuinely an effect on overall social and economic development.

This paper starts with a literature study in chapter 2, it continues with describing the data in chapter 3, the methodology in chapter 4, the results in chapter 5 and finally the conclusion in chapter 6. The literature study starts with the history of the right to social security in section 2.1, the structure of social security in section 2.2, the structure of international obligations in section 2.3 and endogenous constitutions in section 2.4. It continues with the effects of constitutional rights on social security benefits in section 2.5. This is done by researching the effects of constitutional rights in practice, using theoretical arguments from political economy and explaining the role of the interdependent cost calculus.[1] Afterwards the effects of social security benefits on social and economic development are researched in section 2.6. This is done by explaining the role of risk-aversion, efficiency gains, reaching the potential of the poor and how social security

[1] The interdependent cost calculus explains a tradeoff between decision making cost and external cost. We will explain how constitutional rights reduce the price of external costs and thereby total decision making costs in chapter 2.5.3.

deals with externalities. This chapter concludes with a discussion of the expected effects on the different dependent variables growth, inequality, poverty, unemployment and life expectancy. The data used in the empirical part, the sources and the selection of the data, are described in the chapter Data. In the methodology, an explanation of the model and a description of the six specifications to check for robustness of the results are given. It also describes how the problem of endogeneity is dealt with. In the results, the signs and significance levels of the correlation coefficients of our explanatory variables and significant control variables are shown and explained. This is done for both the regressions on the different social security benefits as for the regressions on growth, inequality, poverty, unemployment and life expectancy. It continues with a discussion, specifically to examine if these are in line with the theories and how these should be interpreted. The paper concludes with a short summary of the paper, some policy implications and suggestions for further research.

2 Literature

2.1 The history of the right to social security

We have seen an increasing emphasis on human rights since the end of the Second World War. The most important international document on human rights is the Universal Declaration of Human Rights (UDHR), which was adopted in 1948. The UDHR was a result from the gross human rights violations in the Second World War. The main goal of the UDHR was to prevent this kind of crimes in the future. The acceptance and influence of human rights has increased since then. Nowadays human rights have an important role in the economic and social development debate and the UDHR has been ratified by most nations.

The right to social security including social insurance and an adequate standard of living are stated in articles 22 and 25 of the Universal Declaration of Human Rights (UDHR) (UN General Assembly, 1948), articles 9 and 11 of the International Covenant on Economic, Social and Cultural Rights (ICESCR) (UN General Assembly, 1966) and 26 and 27 of the convention on the rights of the child (UNCRC) (UN General Assembly, 1989). In addition, the European Convention of Human Rights (ECHR) (Council of Europe, 1950) contains human rights regarding social security. Heredero (2007) showed that case law by the European Court of Human Rights led to more extensive protection of human rights over the last few years.

The attention for human rights in promoting development was limited untill the 1990s. For example, human rights played hardly any role in the formulation of the Millennium

Development Goals.[2] The focus was on targeting the poorest people of the population rather than creating minimal living standards for all by using a rights-based approach. It was only after the 2000s that international agencies became aware of the importance of universal public social services, benefits and human rights.

A universal approach helps to build coalitions between different groups in society, between old and young people, between high and low incomes and between people from different regions, (Townsend, 2007). This universal approach reduced multiple forms of discrimination. All people will benefit from the social security system in the future, as it contains pensions and insurance for the whole population. This social insurance function will raise support for a higher level of social provision among different classes.

International Human rights are instruments that provide a legal framework for strategies to reduce poverty. It is a shift from an instrumentalist approach of development towards an entitlements based approach that is based on the law (Chinkin, 2002). Moreover, it is a shift from obligations from states against one another towards obligations from states towards individual citizens.

In the 1980s and 1990s the general development policy advice was to restrain government expenditure and social security expenditure in order to let the market work. Since the 2000s, there is a resurgence of emphasis on good institutions and human rights. As Holzmann et al. (2003,pp.1) put it: “Dismissed as ineffective, expensive or even detrimental to development in developing countries for a long time, it is now increasingly

[2] The Millennium Development Goals (MDGs) are eight international development goals that were established following the Millennium Summit of the United Nations in 2000, Following the adoption of the United Nations Millennium Declaration.

understood that assisting individuals, households and communities in dealing with diverse risks is needed for accelerated poverty reduction, and sustained economic and social development.“ Social security is a way of risk management with the purpose of reducing the effects of negative income shocks, which can occur due to multiple reasons such as health problems, unemployment and natural disasters. This new focus on social security has been enhanced after the financial crisis of 2008. School of thoughts like new institutional economics provide potential answers to the role and importance of institutions like social rights to social security.

Besides fighting poverty, social security can also play an important role in restoring the social contract between different income groups in society. Many of the developing countries deal with high levels of inequality. Too high levels of inequality will lead to rent seeking behavior (Stiglitz, 2013) and may put our democratic norms under pressure (Piketty, 2014).

2.2 Structure of social security

Social security systems consist of three components (Townsend, 2007). The first component consist of social insurance programs. In social insurance programs, people who become unemployed are insured against unemployment and receive from this social insurance program. Social insurance may also include full or part pensions for the retired. The social insurance is paid out of premiums from both the employer and the employee over the course of their working life.

The second component comprise financed benefit schemes, usually flat rate financed, for all residents of a particular social categories determined by age, disability or other qualifying conditions.

The third component of social security consists of social assistance schemes for lower income families. They provide minimum benefits or income and include tax deduction schemes that favor low income households.

In general, social security started with targeted social assistance schemes in the beginning of the 20th century. The emergence of social security was in line with upcoming utilitarian thinking that strived for the famous happiness principle: “The greatest happiness of the greatest number that is the measure of the right and wrong” (Bentham, 1891). This together with democratic and socialistic movements caused pressure for this social assistance schemes. Hence we can argue that these social security schemes were introduced as distributional justice instruments rather than universal rights. These social assistance schemes were discriminating the working people who also wanted some social protection. The pressure of the working class, the small level of benefits and the poor coverage changed social security in a mainly social insurance based system. This provided protection for the unemployed, sick, disabled, elderly and their dependents, and brought the possibility to find a new job without suffering a lot in the process of finding one (Townsend, 2007). A critique on this social insurance based system is that it is mostly obligatory. Therefore it is perceived as paternalistic as the government is protecting citizens for income falls, which they possibly could take care of themselves.

An affordable and acceptable social security system was created. It was also good for the government and the employers as it solved disputes and the costs of settling individual and collective claims. For the insured people, the benefits were more certain and predictable under the social insurance schemes. In addition, fees and management costs are much lower in public than private insurance. This can be explained by adverse selection mechanism that would exist under private insurance. Public social insurance is cheaper to administer than selective social assistance or private insurance, more complaint proof and more resilient against economic shocks (Townsend, 2007). Another advantage of social insurance was the requirement to register which formalized a part of the informal economy. Nowadays we notice an increasing downward pressure on social security by increased competition of companies and states due to globalization. International cooperation is necessary to preserve the joint contribution for social security by the insured, employer and the government.

2.3 Structure of the international obligations

Article 26 of the Vienna Convention on the Law of Treaties states: “Every treaty in force is binding upon the parties to the treaty and must be performed by good faith“, (United Nations, 1969, pp.11). However, the UDHR itself is not a treaty but a declaration which is ratified by almost all UN-members. The UDHR was explicitly adopted to define “human rights“ and “universal freedom“ appearing in the United Nations Charter which is binding to all nation states. Besides many international lawyers like Humphrey (1979) argue that the UDHR is part of customary international law and therefore binding for all mem-

ber states. Chayes and Chayes (1993) came to the conclusion that fulfillment of international agreements is in general not verifiable by empirical tests. According to them, we can only assume that countries do or do not comply with international law.

2.4 Endogenous constitutions

Constitutions can be endogenous in themselves. Cultures may care on average more about social policies in countries with a higher constitutional commitment to social security. This means that the law is seen as a representation or expression of social preferences, which can be explained by history, culture and religion. Secondly, it is possible that the different law systems merely represent the way and amount of codification and is in reality unrelated to the weight a society gives to social policies. For example, the shortest constitution is the one of the USA which contains only 4400 words, whereas the longest is the constitution of India which contains 117.369 words. The latter is around 25 times larger than the first (Ministry of Law and Justice of India, 2008), (Independence Hall Association, 2010). Longer constitutions are on average more detailed and concrete. Therefore, commitment to social security in the constitution is more concrete and thereby higher when the constitution is longer. This may only represent that the constitution is more detailed and not that different social preferences exist. Hence, constitutional commitment to social security in the constitution can be explained by both social preferences and codification. Moreover, the effects of constitutional commitment may dependent on the factors that explain constitutional commitment.

Ben-Bassat and Dahan (2008) showed that commitments in constitutions are endogenous. We can derive from their research that it may be both culture, history and

legal origin that determine both constitutional commitment and social benefits. Another example is given by Acemoglu et al. (2005) who argue that economic outcomes and the distribution of resources determine de facto political power, which has an effect on political institutions as the constitution. Ben-Bassat and Dahan (2008) found that constitutional commitment to social security is on average higher in countries that share the tradition of French civil law. They also found that common law countries exhibit a lower average constitutional commitment to social security. Constitutional commitments for socialist countries are closer to French civil law whereas German and Scandinavian traditions resemble the English common law more closely (Ben-Bassat and Dahan, 2008).

We can account for some of these differences in culture like religion, geographic region or legal origin, but it is impossible to find perfect indicators for culture or history. Nevertheless, attempts are done to develop indicators and metrics to capture beliefs and values. The World Values Survey created one of this indicators that try to measure different values in different geographical areas. Alesina et al. (2001) try to explain different welfare states in Europe compared to the USA by using this World Value Survey. They found that racial animosity and the lower willingness to pay for the black population, who is overrepresented within the poor, is the main explanation for less pro-poor policies in the USA compared to Europe.

2.5 The effects of constitutional rights on social security benefits

2.5.1 Constitutional commitment to social security in practice

Enforceability of social and cultural rights is much weaker than the enforceability of many other rights like property rights, contract law and other rights that put constraints on government intervention. One of the main distinctions between social rights and these other rights is that social rights contain positive rights whereas most other rights contain negative rights. It is easier to enforce negative freedom, which means that individuals are free from external influence, than to enforce positive freedom that refers to the freedom to do things in an autonomous way. For example, article 22 UDHR states: "Everyone, as a member of society, has the right to social security and is entitled to realization, through national effort and international co-operation and in accordance with the organization and resources of each State, of the economic, social and cultural rights indispensable for his dignity and the free development of his personality", (UN General Assembly, 1948, pp 5). This article raises immediately the questions when the right to social security is fulfilled. It is arbitrary and subjective when someone is living in dignity or when individuals have enough free development of their personality. In addition, "in accordance with the organization and resources of each state" contains a subjective element, (UN General Assembly, 1948, pp 5). Different people may answer the question of fulfillment differently.

Because of difficulty in enforceability, we question to which degree social rights actually result in social policies. Ben-Bassat and Dahan (2008) researched the effects of the right to social security, education, health, housing and workers in the constitution. They constructed quantitative indicators for constitutional commitment for all of

these five indicators. For social security, they studied the relationship between constitutional commitment to social rights and the size of government and redistribution policy. They found no robust effect of constitutional commitment on public policy, except for the effect of constitutional commitment to social security on government transfers and for constitutional commitment to health on health policy performance.

Ben-Bassat and Dahan (2015) also found a positive connection between their indicator of constitutional commitment to social security and the extent and coverage of actual measures of social security laws. The text in the constitution seems to explain part of the cross country variation in welfare coverage around the world. They also tested for interaction effects between constitutional commitment to social security and the degree of constitutional review, the ease of amending the constitution, the power of NGOs and international organizations and ethnic fractionalization. In contrast with the theory, they found that these institutional factors do not have a significant influence on the effect of social security commitment in the constitution on social security policy.

Blume and Voigt (2007) found that basic human rights have a positive effect on investment but do not contribute to productivity, whereas social rights do contribute to productivity improvements but do not have an effect to investment in physical capital. Dahan and Strawczynski (2013) found a negative effect of fiscal rules on the ratio of social transfers to government consumption. Perrson and Tabellini (2005) showed that a proportional electoral rule is correlated with higher and a presidential system with lower government expenditure. From this three papers, we can conclude that

constitutions do have an effect on policies. But the literature regarding constitutional commitment to social security is based only on the two papers of Ben Bassat and Dahan (2008, 2015).

2.5.2 Political economy arguments

The difference between constitutional law and policies lies mainly in the more sustainable character of the constitution. According to political economy, politicians are selfish individuals that maximize their own benefits. Landes and Posner (1975) argue that benefits for interest groups are bigger if policies have a more sustainable character. This makes it that interest groups their willingness to pay is higher for constitutional rights than for policies. For this reason, politicians are in favor of constitutions even when it limits their power, as it helps them to extract more rents by changing or not changing the constitution. Politicians know that the durable character of the constitution will be questioned when they abolish or dramatically change the constitution. They also know that this would decrease the value of the constitution. Hence, we could explain the existence of constitutions with a game theoretical framework in which a tit for tat strategy is applied.[3] As commitment to the constitution creates value, it is likely that constitutions do have an effect on laws and policies. Constitutions contain the preferences of former politicians, interest groups and society. The new generation of politicians will take these former preferences more into account when they are stated in the constitution rather than when they were only expressed in policy. Hence, it is likely that com-

[3]A tit for that strategy is a trigger strategy that can be applied to solve the prisoner's Dilemma. If a player deviates from the social optimum (constitution), then he will be punished in the next period as the other player will also start deviating. Both players are better off not deviating, this makes commitment to the constitution pareto superior.

mitments to social security in the constitution do have an effect on social security expenditure. An alternative to the political economy explanation is that social rights in the constitution can get legal force through civil society or judicial activism.

2.5.3 The interdependent cost calculus

Another way in which rights can have economic effects is by reducing decision making costs. Buchanan and Tullock (1962) came with the interdependent cost calculus in which there is a trade-off between decision making costs and external costs. Decision making costs contain all the costs necessary to come to a decision. External costs are all the costs that are inflicted on others than the persons that were involved in the decision making process. To reach a decision the number of costly consultations and meetings will go up exponentially when more people are involved in the decision making process. On the other hand, the external costs go up exponentially, the less people are involved. The efficient level of involvement is where the sum of the decision making costs and external costs is lowest. Rights in the constitution can protect minorities and thereby reduce external costs. Therefore, the efficient level of the amount of people involved can go down and the total decision making costs go down by both lower decision making costs and lower external costs. Not only decision making costs are saved, but it also makes it more likely that efficient policies are chosen. For example, decision making costs can outweigh the efficiency gains by a more efficient policy. Then it will be efficient not to propose the new policy as the marginal decision making costs may outweigh the marginal benefits by a better policy. A right to social security gives security to the lower and middle class and thereby reduces external costs of political decisions on them, as they have at least some basic rights. This will generate satisfaction among the social

benefits receivers and reduce political instability as their benefit to rise against their government will reduce. Lower risk of resistance against policies by the population will give politicians more freedom to make more rational rather than populist emotion based decisions. These more efficient policies could lead to more economic growth. On the other hand, high satisfaction by the population can lead to lower involvement in politics and thereby lead to more possibilities for lobby groups, interest groups and politicians to capture rents at a cost for society.

2.6 The effects of social security benefits on social and economic development

2.6.1 The role of risk aversion

The first way in which social security can lead to higher economic and social development can be explained by the tendency of humans to be risk-averse. A safety net for people who lose their job, go bankrupt, become disabled, are old or lose their partner reduces the risk of falling into extreme poverty enormously. As the loss of such a harmful event will reduce significantly, this will lead to a higher level of risk taking. If people were risk neutral this would undoubtedly result in an inefficient high level of risk taking as the social security benefits are paid by others. This too high level of risk taking due to shifting the potential losses on others is called moral hazard. However under the assumption of risk-averseness, humans tend to take a level of risk for which the expected benefit is much lower than it would had been for a risk-neutral person. As humans are risk-averse this means that they may not take enough risk from a social perspective. Firstly, because a part of the benefits of the risk will also fall on other people. For example, innovations that result from taking risks are not only beneficial for the individual that takes the risk, but also for the society as a whole that makes use of this innovation. For instance,

Cramer, Hartog and Jonker (2002) found a significant negative effect of risk aversion on the choice for entrepreneurship. Hence, social security can move individuals from an inefficiently low level of risk taking towards a more efficient level of risk taking. However, it will be hard to determine what the efficient level is and moral hazard may even lead to an inefficient high level of risk taking. In line with the risk-averse nature of humans, Kahneman and Knetsch (1991) showed that losing something is on average two times as costly as winning the same thing. This means that the risk-averse nature of human beings is very strong. At the same time (part of) just the monetary loss is compensated by the state, which means that risk takers still bear a significant part of the material and immaterial losses themselves. Therefore, we expect that social security will move risk taking towards a more efficient level rather than a too high level of risk taking.

In line with this, Estevez-Abe, Iversen and Soskice (2001) came with a different interpretation of the welfare state. They showed that social security will result in higher investments by employees in their firm and in industry-specific skills. As social security provides security, the willingness to build up dependence on particular employees and hence being more vulnerable to market fluctuations increases. Therefore, employees are willing to invest more in their current job and employer when there is a high level of social security. Hence, social security decreases risks and decreased risks increase investments, productivity and thereby growth.

2.6.2 *Efficiency Gains*

A second reason why social security may have a positive effect on welfare is because the willingness to pay for social insurance or social security is much higher than the cost of providing it. This can be explained by the tendency for humans to be risk-averse, which means that they are willing to pay for security. In other words, the willingness to pay for security is higher than the expected costs. Hence, when the administrative costs for the provision of social security are not excessive, social insurance can result in a large efficiency gain by providing social insurance. Voluntarily based private insurance may be inefficient due to asymmetric information about the expected cost of a person for the insurance. This could result in adverse selection in which the people with lowest risks will not buy the insurance for the premium based on the cost of the risk level for an average person. When the lowest risk groups do not buy the insurance, the average risk and premium will go up. This process may repeat itself until no market is left as Akerlof (1970) showed in his example of the market for used cars. Then market failure arises due to asymmetric information. As long as the aggregate willingness to pay for social insurance is higher than the aggregate of the cost to provide social insurance, it would be efficient for the government to provide social insurance. When there exist an inefficient market solution, the government should from an utilitarian efficiency perspective, only provide social insurance when the difference between the total willingness to pay and the total cost for public provision is positive and larger than for the private solution. Efficiency gains by social insurance may have positive effects on social and economic development. Further, a more efficient result says nothing about the distribution of the benefits. But as social security benefits mainly go to the lower incomes, we can expect that the efficiency gains go together with redistributive effects.

On the other hand, reduced risks may also imply that people will save less and work less, as we will discuss below. Lower labor supply and savings may indeed have a negative effect on social and economic development. However, lower labor supply may in the long-term lead to higher wages to attract employees. This may result in lower poverty and inequality. Lower labor supply may also mean that there are fewer vacancies filled, which may lead to lower unemployment.

2.6.3 Reaching the potential of the poor

Another way in which social security can effect social and economic development is by getting more out of the potential of poor people. A safety net can prevent poverty. Poverty has negative effects on education and health care. Brooks-Gunn and Duncan (1997) showed that family income has an effect on children's capabilities and achievements. Aber, Bennett, and Conley (1997) showed negative effects of poverty on child health and development. By reducing poverty, more of the human potential of poor children and adults can be exploited, because they are healthier and have better access to education and internet to improve their skills. Providing social security can help to increase the demand side for healthcare and education. In general, poor people are less willing to invest in health and education than the non-poor, because the cost and opportunity cost in the short term may be too high. Laibson (1997) showed that hyperbolic discounting leads to lower savings, which may reduce welfare. We can extrapolate this argument to inefficient low levels of investments in education and healthcare from a long-run perspective. Social security can overcome liquidity problems and thereby help individuals to take the long term more into account by investing more in health and education in the present. Healthier and better educated individuals may increase productivity and

thereby growth. We can expect it to reduce poverty and inequality as well because the poor receive more than proportionally from social benefits. Duflo (2003) showed that pensions received by woman in South Africa had a large impact on the weight and height of girls. This example shows that social security is expected to reduce poverty and inequality. Unemployment may decrease as productivity increases and life expectancy could increase due to higher investments in health.

Duflo (2006) argues that poverty has an effect on rationality. Also Mani et all (2013) showed that poverty itself reduces cognitive capacity. Their explanation is that poverty-related concerns consume much of the mental resources and thereby leave less of them for other tasks. Stress for things like food, medicine and droughts leaves less mental space to use the cognitive capacity of the brain for investments regarding the long-run. Social security may decrease poverty and thereby increase rationality of people and hence increase productivity and growth.

2.6.4 Dealing with positive and negative externalities

Social security can also reduce negative externalities of poverty, criminality and bad health. Healthcare is paid for the largest part out of public means and insurance. Therefore, it will effect healthy people, as they need to pay higher taxes and premiums for the higher healthcare cost for poor people. Another example is that the incentive to earn money with criminal activities is higher if people are poor as the expected net benefit of stealing or selling drugs is higher poor people, due to decreasing marginal utility of money. Expensive healthcare and criminal behavior lead to negative externalities for societies. On the other hand, reaching the potential of the poor by higher education and better health leads to more innovation, creation of employment and tax revenue. For

example when the poor are educated, they will receive a higher income and pay more taxes. This has a positive effect on the rest of society. However, we have to take into account that the provision of social security itself is also costly and need to be paid by taxpayers. This imposed tax could be seen as a negative externality on tax payers as well. According to welfare economics, the positive externalities of social security should be weighted with the negative externalities to find an optimal level of social security provision.

2.6.5 Effects on growth and capital accumulation

There exist a strong apparent relation between social security and economic growth. Most of the OECD countries are committing more than 20% of GDP to public services and cash benefits from which more than half of it is committed to cash benefits (Townsend, 2007). Most low-income countries commit less than 5 percent of GDP in total to public social services and benefits. The question remains whether social security is the cause or the effect of economic growth.

Research is mixed on the effect of social security on growth. Studies that rejected the argument that social security had a negative impact on growth were done by Koskela and Viren (1983), Atkinson (1995), Singh (1996), Gramlich (1997).

Two ways in which social security may influence growth are by effecting capital accumulation and the labor supply. We will use the rest of chapter 2.6.5 to elaborate on the effects of capital accumulation and will elaborate on the effects of labor supply in chapter 2.6.6. The expected effect of social security on savings is negative. As people will have a right to income in their old days and in case of emergencies, people will be less

tending to save to survive by private means. Nevertheless, Katona (1964) and Cagan (1965) showed that higher levels of social security lead not to lower saving levels and sometimes even to higher saving levels. Cagan (1965) explained his result with a "recognition effect" which entails that when a person is forced to pay for social security it makes him more aware of the need for an income in the old days. Katona (1964) explained this with the "goal gradient" hypothesis, which means that effort is intensified if one comes closer to his goal.

The effect on capital accumulation also depends on the social insurance system in place. Pension funds and social insurance funds have a lot of capital. Premiums for social insurance can be higher than the amount people would had saved otherwise in the private sector for their pension and emergencies. This could mean that public savings and investments by public insurance funds are higher than it would have been by private savings and investments without social security. However, this public savings and investments would not exist when social security and pensions are paid by a pay-as-you-go system, where the taxpayers pay for the people that use social security.

Feldstein (1974) defended the life cycle theory according to which we would expect a decrease in savings as big as to leave consumption during retirement unchanged. His method was making the extent of retirement endogenous. Therefore, pension has two effects on personal savings. Firstly, it reduces savings as individuals expect to get money from the government during their old days. Secondly, people will save more because they will go with retirement earlier. He concluded based on empirical evidence that personal savings decreased with 30-50% due to social security. Smaller capital accumulation

can be explained by the pay-as-you-go nature of this social security system in which the old generation gets the pension based on payments of the working generation.

2.6.6 Effects on labor supply and unemployment

Blinder, Gordon and Wise (1980) showed in their paper that the provision of the social security law in the USA provides strong work incentives for older men. This can be explained by higher future social security benefits when current earnings are higher. Krueger and Pischke (1991) found that labor supply continued to decline after less generous benefit schemes due to the amendments to the social security acts in 1977. This seems to underpin the conclusion that decreasing labor supply is not caused by increasing social security benefits. Rust and Phelan (1997) showed how social security and Medicare affect retirement behavior in a world of incomplete markets. They showed that for employees in the US who did not build up a retirement health insurance, social security creates strong incentives to keep in the labor market till they are eligible for full Medicare coverage at age 65. They showed that retirement behavior can for a large part be explained by the specific features of the social security system.

On the contrary, Friedberg (2000) found that when social security taxes away benefits when they are higher than a certain threshold, a substantial number of people stay just below this threshold. This shows that social security may have a negative effect on labor supply. Krueger (2005) argued that labor supply effects of social insurance programs deserve special treatment from the rest of the labor supply literature. For the reason that key features as eligible by being disabled are different from standard labor supply theory. Besides, social security does often deal with the question whether to work at all, while standard labor supply theory almost always deals with questions at the margin,

how much individuals will work. His empirical work found that unemployment insurance and workers' compensation insurance increase the time employees do not participate in employment.

The effects of social security on unemployment are inconclusive. On the one hand, we expect fewer jobs due to lower labor supply as social security will decrease the incentive to work. If people who could create jobs by working make less use of this possibility, fewer jobs for others are created. This can be explained by lower investments and unused entrepreneurial potential. Besides, as this people work less they will also earn less and therefore consume less. Through this, unemployment could go up from the demand side as well. On the other hand, this reduction of labor supply may give more space for the unemployed to enter the labor market. This would happen when the supply of labor decreases faster than the decrease in the demand for labor. If this would happen, one of the things that could explain this is the propensity to consume. This is higher for lower income groups than for higher income groups. As social security benefits receivers are mostly lower income groups this may have a positive effect on employment by higher consumption when the demand side lags behind the supply side. On the other hand, social security benefits may lead to lower capital accumulation as the higher income groups, whose propensity to save is higher than for the lower income groups, share a relatively large side of the tax burden for social security. The effects of higher consumption and lower savings by social security on employment may highly depend on the part of the economic cycle the economy moves.

2.6.7 *Effects on inequality, poverty and life expectancy*

We expect social security to have a negative effect on inequality. Social benefits go mostly to the lower and middle income groups of society .It prevents that people fall in extreme poverty due to negative income shocks by becoming unemployed, disabled, a survivor or old.

We also expect poverty to decline by social security benefits as poor people receive benefits in case they are old, survivor, disabled or have a family to take care of. The causal effect of social security on reducing poverty is clearly easier to determine as the theoretical basis for reverse causality in which poverty determines social security is much weaker than for growth. Fisher (1976) showed a noticeable decline in poverty rates for the elderly poor in 1968 compared to 1967, 1966 and the years after 1968. This decline could be explained by a 13 percent increase in social security in 1968. Smeeding, Rainwater and Burtless (2001) found a strong correlation between social expenditure as a percentage of GDP and relative poverty rates in 16 countries in the 1990s. Also Chen and Corak (2005) and Smeeding and Phillips (2001) found a positive correlation between social spending as a percentage of GDP and poverty reduction.

Poverty leads to more stress, less healthy food and less access to healthcare and other amenities. Therefore, we expect poverty to have a negative effect on life expectancy. Wilkinson (1992) argues that after GNP reached a threshold of $5000 it is relative poverty rather than absolute poverty that effects life expectancy. All OECD countries have passed this threshold and therefore we expect that inequality rather than absolute poverty has a negative effect on life expectancy. We expect both poverty and inequality to

go down by social security. Therefore, we expect social security to have a positive effect on life expectancy.

The main objective of this paper is to research the effect of social security law on social and economic development. In this chapter, we have given an elaborate literature review complemented with theory and personal insights. The second part of this paper is an empirical study and we start this part with describing the data in the next chapter.

3 Data

For the empirical part, we used OECD data, World Bank data and data from the paper of Ben-Bassat and Dahan (2008). We have created a panel dataset for 28 OECD countries and 32 years from 1980 to 2011.[4] We chose to focus on OECD countries for the reason of data availability. This made it possible to use both data from OECD and the World Bank to get a more complete dataset. Table 1 presents details of the variables and sources of data.[5] We selected these OECD countries for which an indicator of social commitment in the constitution is available in the paper of Ben-Bassat and Dahan (2008). The selection of countries based on data availability could lead to a possible bias. Nevertheless, we think that this problem may not be too serious as we cover 28 out of 34 OECD countries. When we want to extrapolate our results to Non-OECD countries, we have to be more careful as different mechanisms might be at work for non-OECD countries. Our sample covers a wide range of common law and civil law countries with different levels of GDP, democracy and types of constitutions. The panel dataset is a highly balanced in which only for a few countries data is missing for a few years. Given that the total time period contains 32 years, we have sufficient number of observations to work with. The missing years are mainly for former Soviet Union countries that have started to register some indicators since 1990. This means that there are still 21 years left with data for these countries.

[4] The selected countries are Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Spain, Sweden, Turkey, United Kingdom and the United States

[5] See the appendix for the tables.

As described in the theoretical part we do expect an effect from constitutional commitment to social rights on social security benefits, which will subsequently have an effect on economic and social development variables.

The first dependent variables are social security variables for which we used the OECD database of social protection and well-being (Table 2). To research the second stage, we used these same variables as explanatory variables. Our first variable for social security is public expenditure on old age in percentage of GDP (*old age)*. This variable contains old age pension, old age other cash benefits, old age residential care and home-help services and old age other benefits in kind. Our second social security variable is public expenditure on survivors in percentage of GDP (*survivor)*, which contains survivors' pension, survivors other cash benefits and survivors funeral expenses. Our third social security variable is public expenditure on disability and sickness cash benefits in percentage of GDP (*disability)*. This variable includes disability pensions, pensions due to occupational injury and disease, paid sick leave for both occupational injury and disease as for sickness daily allowances and other cash benefits. Our fourth social security variable is public expenditure on family in percentage of GDP (*family)*. This variable includes both cash benefits and benefits in kind. Our fifth variable is the sum of the first three variables, old age, survivor and disability (*t.soc.sec.)*. We excluded family in this fifth variable because the indicator for law did not take family benefits into account.

The main explanatory variable of interest in the first stage is constitutional commitment to social rights, which we will call '*law*' (Table 3). This variable is the indicator that Ben-Bassat and Dahan (2008) created, which varies between 0 to 3. "A rank of 0 is given if a right is absent from the constitution. A rank of 1 is given if the constitution includes a

general statement with regards to a particular right. A rank of 2 is given if the constitution guarantees a minimal level with respect to that right such as 'a minimum standard of living,' a rank of 3 is given if the constitution has a high degree of commitment and concreteness." (Ben-Bassat and Dahan, 2008, p. 106). As this variable is time-invariant, we have created an interaction variable with political party in office. This is because we expect leftwing governments to care on average more about social security than rightwing governments. We have multiplied the index of law with 0.5 for the years a rightwing party is in office, with 0.75 for center parties and with 1 when a leftwing party is in office. This new variable *Law*politics* varies over time as political party in office changes over the years (Table 3). We expect a positive correlation between this variable and social security benefits. This is because we expect a positive effect from both constitutional commitment and political party in office in on social benefits as we have discussed in section 2.5. And we will continue our explanation of the instrument and how we used it in the methodology.

Our dependent variables for the second stage are variables for economic and social development (Table 4). We used the variables: annual GDP growth in percentage (*growth)*, Gini coefficient for inequality (*inequality)*, Poverty rate after taxes and transfers for a poverty line of 50% (*poverty)*, unemployment as percentage of total labor and life expectancy at birth (*unemployment)*.

The control variables we used are GDP per head of population (USD, constant prices, 2005 PPPs), Gross capital formation (annual%growth) (*capitalfor.)*, *Trade* (% of GDP), School enrollment, tertiary (%gross) (*t.school.en.)*, General government final consumption expenditure (% of GDP) (*gov.cons.)*, Inflation, consumer prices (annual%), time

trend (Table 5). These control variables are based on the papers of Solow (1956) and Barro (1996). Further, we added the independent variables *growth, inequality, poverty, unemployment* and *life expectancy* as control variables in the regressions where these variables where not the independent variable. Only the significant control variables were kept in the regression as will be explained in the methodology.

4 Methodology

We have run six regressions for each of the dependent variables '*growth, inequality, poverty, unemployment* and *life expectancy'* to see if possible results are robust under this six different specifications. In the first specification, we took the four different kinds of social security benefits: '*old age, survivor, disability* and *family*', to explain the dependent variables *growth, gini, poverty, unemployment* and *life expectancy*. In the second specification we added the squared of the social security benefits variables as explanatory variables. The third specification takes *family* together with the sum of *old age, survivor* and *disability*, named *t.soc.sec.* (total social security) as explanatory variables. We keep *family* as a separate variable as constitutional commitment to family benefits is not included in the index of Ben-Bassat and Dahan (2008) and we will use this index in specifications five and six. The fourth specification adds *t.soc.sec.sq (squared of total social security)* and *familysq (family squared)* as explanatory variables to the third specification.

The reason that we add two TSLS regressions with instrumental variables in specifications 5 and 6, is that we expect the different social security benefits to be endogenous. We have showed in the literature chapter that there exists a strong correlation between initial GDP per head and social security benefits as percentage of GDP. This is confirmed by our correlation coefficients (Table 6). But we are not just researching this correlation but are interested in the causal link from social security on social and economic development. The first way we researched this causal link is by adding a range of control variables to observe if there may be third factors that explain both variables. This could

correct for confounding factors that would lead to a wrongly perceived causal link between social security benefits and social and economic development.

However, these control variables do not correct for the possibility of reverse causality in which social and economic development determine social security benefits. We use an instrumental variable approach to correct for reverse causality. A good instrument meets the requirements of relevance and exclusivity. Relevance means that the instrument needs to be correlated with the social security benefits variables. This means that the lag of the social security benefits variables and the *law*politics* variable must have an effect on current social security benefits. This is both theoretically plausible and is confirmed in our correlation table (Table 6). The second requirement is exclusivity, which means that the instruments are not allowed to have a direct effect on the dependent variables. The theoretical argument behind our instruments is that something of the past, like the lag of social security variables, does not have an effect on the dependent variables now, except through the explanatory variables of the present. This is confirmed by our significant Hausman test, which showed that the TSLS regressions with the lag of social security instrumental variables are consistent and efficient compared to the OLS regressions in specification 1-4 (Table 7). For *law*politics* we may argue that a constitutional right to social security in itself is unlikely to affect social and economic development. And that this effect is only from law on social security benefits and subsequently from social security benefits on social and economic development. However, the requirement of exclusivity is harder to fulfill than the requirement of relevance and we can only test by the Hausman test if this instrument does reduce the endogeneity problem. We found negative chi values for the test statistic, even asymptotically, which

points at the direction that the neglected variable (or instrument) is strong enough relative to the Hausman test. Therefore we assume that we can reject the null hypothesis and that we should include the law*politics variable as an extra instrument. Hence, we included both *law*politics* and the lag of social security benefits as instruments in specification 6 of our TSLS regressions for dependent variables *inequality, unemployment* and *life expectancy*. This is also in line with significant values of the Hausman test when we compare OLS with TSLS models and with finding no overidentification problem by adding this extra instrument when we test for this with the Sargan overidentification test (Table 8). Hence, the fifth and sixth specifications are TSLS regressions instead of the OLS regressions. Our Two Stage Least Square models:

$$\boldsymbol{y}_i = \boldsymbol{\beta}_0 + \boldsymbol{\beta}_1 \boldsymbol{x1}_i + \boldsymbol{\beta}_2 \boldsymbol{x2}_i + \varepsilon_i$$

$$\boldsymbol{x1}_i = \pi_0 + \boldsymbol{\pi}_1 \boldsymbol{z}_i + v_i$$

$\boldsymbol{y}_i$ = dependent variables: *growth, inequality, poverty, unemployment* and *life expectancy*.

$\boldsymbol{x1}_i$ = endogenous variables: *family, familysq, t.soc.sec.* and *t.soc.sec.sq*

$\boldsymbol{z}_i$ = instrumental variables*: lag of family, lag of familysq, lag of t.soc.sec.* and *lag of t.soc.sec.sq.*

$\boldsymbol{x2}$ = control variables

In specification five we took *family* and *t.soc.sec.* as explanatory variables and the *lag of family* and the *lag of t.soc.sec*. as instruments. We also included *Law*politics* as an instrument in the regressions on *inequality, unemployment* and *life expectancy*. We can

do this because the Hausman test showed that this helped solving the endogeneity issue and the Sargan-test showed no problem of overidentification by including this instrument for this variables. For the regressions on economic growth and on poverty there was an overidentification problem when we included the *law*politics* instrument and therefore we left this instrument out these regressions (Table 8). The sixth specification added *familysq* and *t.soc.sec.sq* as explanatory variables to specification five and added the *lag of familysq* and the *lag of t.soc.sec.sq* as instruments. We added again the *law*politics* variable as instrument in the regressions on *inequality, unemployment* and *life expectancy* because there was no identification problem for the regressions on this three dependent variables.

We included all control variables in all six specifications and subsequently deleted the control variables that were insignificant in all six specifications from the regressions as they have no significant explanatory effect and may cause possible multicollinearity problems. We also tested if we should use random or fixed effects with the Hausman test. As the tests were significant we have used fixed effect in our models to control for country fixed effects. This controls for the differences in effects between the different countries, due to different country characteristics. We found insignificant values for the Hausman test Only for *life expectancy* in specifications 1, 2 and 4. Therefore, we ran these regressions with random effects instead of fixed effects. We also used robust standard errors to correct for possible heteroscedasticity problems, which will probably occur as we used panel data for more than 30 years. Moreover, we added a time trend as control variable where it was significant in order to correct for autocorrelation.[6]

[6] First stage estimates and IV tests are available on request.

5 Results

Firstly, the results of the effect of commitment to social security in the constitution on all four kinds of social security benefits are shown (Table 9). We found positive significant effect of our law index on all four social security benefits and also on total social security benefits.[7] Other variables that can explain social security benefits are GDP per capita, GdP growth, government consumption, ageing, inequality and trade. But even after controlling for all this control variables, we found positive significant effects at a 1-percent level from commitment to social security in the constitution on all four social security benefits. This answers our first question affirmative, commitment to social security in the constitution does have an effect on social security benefits. This is also in line with what Ben Bassat and Dahan (2008) found for constitutional commitment to social security on transfers. Besides, the positive effect of law on social security benefits points out that it is indeed a good instrument as it is correlated with the endogenous variable. This argues in favor of using law*politics in our TSLS models in specifications 5 and 6.

The first dependent variable for economic development is growth (Table 10). None of the social security variables has a significant effect on growth in any of the 6 specifications. Further, we found a positive significant effect of capitalformation and a negative significant effect of inflation and government consumption in all six specifications, which is in line with the literature. There we showed that there are a lot of theories which predict how social security benefits may influence growth in different

[7] In the chapters results and conclusion, we used the meaning of the variables as notation, rather than the variable names, as we believe that this is clearer.

ways. However, in this empirical part we do not find any effect as we can see in table 10. This could mean that some positive and some negative effects are at work and balance each other out or that there are no effects from social security on the determinants of growth at all. Nevertheless, we can conclude that there is no evidence for a negative effect from social security benefits on GDP growth. This finding is in line with the shift in policy advice from a narrow free market focus in the 80s, which argued that social policies would harm growth, towards focus on inclusive growth based on rights and social development in the last two decades. However, our model does find a negative effect of government consumption on economic growth. This means that we need to make a distinction between different kinds of government expenditure in which social security benefits should not be confused with government consumption.

The second dependent variable of interest is inequality, which is measured by the Gini index (Table 11). We found negative significant coefficients for survivor benefits and family benefits at a 1-percent level in specification 1. We found also a small negative significant effect of family benefits at a 10-percent significance level in specification 5. For the control variables, we found a small positive significant effect of inflation in specification 1 and 2 and we found a small negative effect of government consumption on inequality in specifications 2-6. Hence, survivor benefits and family benefits cause lower inequality, which is in line with the literature.

The third dependent variable of interest is poverty (Table 12). We found a negative significant effect of family benefits on poverty at a 1-percent level in specifications 1 and 5 and at a 5-percent level in specifications 2 and 3. We found also a negative significant

effect of the squared of family benefits at a 5-percent level in specification 5. This implies a higher negative effect of family benefits for higher levels of family benefits. Total social security benefits have a small positive significant effect at a 5-percent level in specification 5 and a 10-percent level in specification 6. Further, we found a negative significant effect of GDP growth in all specifications except the third one and a positive significant effect of life expectancy in all specifications. The negative effect of family benefits on poverty is in line with the expectations we have described in the literature part. On the other hand, the positive effect of total social security in specification 5 and 6 implies an increase of poverty by social security benefits. This is in contrast with our expectation and therefore needs further scrutiny. A mechanism by which social security benefits could lead to more poverty is that it could make receivers of social security more passive and therefore less likely to escape poverty.

The fourth dependent variable of interest is unemployment (Table 13). We found a positive significant effect of family benefits on unemployment at a 5-percent significance level in specification 1. Besides, we found a positive significant effect of old age benefits and the squared of survivor benefits on unemployment at a 10-percent level in specification 2. However we found a negative significant effect of family benefits at a 10-percent level, a positive significant effect of the squared of family benefits at a 1-percent level and a small positive effect of the square of total social security benefits at a 1-percent level in specification 6. This implies a decreasing marginal effect of family benefits on unemployment, which is negative for small family benefits and becomes positive for high amounts of family benefits. The control variables are not very robust either, with a negative effect of GDP per capita in all specifications, a negative effect of

inflation in specification one and a positive effect of tertiary school enrollment in specification 5 and 6. Furthermore, trade has a positive effect in specification 2 and a negative effect in specification 5. Besides, inequality has a positive effect on unemployment in specification 5 and 6. The increase of unemployment by old age, survivor and family benefits points in the direction of less labor demand or more labor supply as described in the literature. These two different potential causes would have different effects on social and economic development. That family benefits becomes negative when we add the squared of family benefits could tell us something. High family benefits may cause an increase in fertility rates as the cost of having children reduces. More children would eventually mean an increase in labor supply. Another possible explanation is that there is a third factor at work. There may be a correlation between family benefits and subsidized childcare. Subsidized childcare increases the incentive for woman to enter the labor market as the net benefit from working increases. Both possible explanations effect unemployment by higher labor supply. However, further research is necessary to find the reasons and mechanisms behind the correlation between family benefits and unemployment.

Finally, the last and fifth variable of interest is life expectancy (Table 14). We found a positive significant effect of survivor benefits on life expectancy at a 10-percent level in specification 1. Furthermore, we found a negative significant effect of family benefits and a positive significant effect of total social security benefits at a 1-percent level in specifications 1 and 2. In addition, there is a significant positive effect of the squared of family benefits in specification 5 and a negative significant effect of squared total social security benefits in specification 6. This implies that family benefits reduce life

expectancy at a reducing rate. And total social security benefits increase life expectancy, but the positive effect is smaller for higher levels of total social security benefits and might even turn negative after a certain threshold. The positive effects of social security benefits on life expectancy confirm the expectations described in the literature part. The only unexpected effect we found is the negative effect from family benefits on life expectancy.

To summarize, we found a positive significant effect of constitutional commitment to social security on all different social security benefits. We found that no significant effect exist from social security benefits on economic growth. We found a negative significant effect of survivor benefits and family benefits on inequality. Furthermore, we found a negative significant effect of family benefits on poverty and a small positive effect from total social security benefits on poverty. We found a positive effect of family benefits on unemployment which became negative in specification 6 when we added the squared of family benefits. Squared family benefits itself is significant with a negative coefficient in specification 6. We also found a positive significant effect from old age benefits, the squared of survivor benefits and total social security benefits on unemployment. Finally, we found a positive significant effect of survivor benefits, total social security benefits and the squared of family benefits on life expectancy. In addition we found a negative significant effect of family benefits and of the squared of total social security benefits on life expectancy.

6 Conclusion

We started this paper by describing the shift from relatively narrow free market oriented development policies in the 80s, towards inclusive growth models including social rights and the provision of public goods in the last two decades. At the same time, the target group approach was partly replaced by a right-based approach. This paper contributes to the research of both. It is the first paper that researched the effects of commitment to social security in the constitution on social and economic development. Besides it is also the first paper that showed the different kinds of effects from different kinds of social benefits on different kinds of social and economic development variables.

The main question we tried to answer in this paper is "What are the effects of commitment to social security in the constitution on social and economic development?" We divided this question into two parts "the effects of commitment to social security in the constitution on social security benefits?" and "the effects of social security benefits on social and economic development?" We found a positive effect of constitutional commitment to social security on social security benefits in the literature, in our theory and in our empirical part. We explained this positive effect from constitutional rights by using a political economy framework and by explaining the interdependent cost calculus. Afterwards, we answered the second question by explaining the role of risk aversion, efficiency gains, reaching the potential of the poor, and dealing with externalities. In our empirical part, we found in general no effect on growth, a negative effect on inequality and poverty and a positive effect on unemployment and life expectancy. However, we need to be careful in our interpretation as we found some exceptions for some social benefits variables for some specifications. Besides, the results were never robust in all

different specification and therefore highly dependent on the chosen specification. Nevertheless, commitment to social security in the constitution has an effect on social and economic development and this effect goes by social security benefits. This is in line with both the popular rights-based approach and with the broader development approach, which extends the focus on market institutions and property rights with human rights and social policies.

Furthermore, this is the first time that different effects for different kinds of social security benefits on inequality, poverty, unemployment and life expectancy are researched and found. We can infer from our results that not all social security benefits have the same effects. The kind of social security benefits matters for the effect on different social and economic development variables. Another point in which we need to be careful in generalizing the results, is to draw conclusions for developing countries. The reason for caution is that our empirical part relies on data for OECD countries. Possible reasons why things may work differently in developing countries are primitive institutions, weak operationalization of policies, bad enforcement, high information costs, little transparency, corruption and limited resources. Further research is required to find the mechanisms behind the effects of specific kinds of social security benefits on social and economic development and to research the external validity for non-OECD countries.

Overall, we can conclude that the literature, the theory and the empirical results show that constitutional commitment to social security does have a positive effect on social benefits. This provides a legal rationale for constitutional commitment as it showed that constitutions have an effect on policies. Besides, no effect of social security benefits on

growth is found. At the same time, we found that social security does effect social development in a positive way with regard to inequality, poverty and life expectancy. Hence, we found no tradeoff between economic growth on the one hand and poverty, inequality and life expectancy on the other hand. This provides an economic rationale both for commitment to social security in the constitution and for higher social security benefits. However, unemployment is negatively affected by social security. Hence a tradeoff between unemployment on one side and inequality, poverty and life expectancy on the other side exists. Knowing which tradeoffs exist will help politicians to make better decisions on constitutional commitment to social security and on the extensiveness of different kinds of social benefits.

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8 Appendix

Table 1. variable description

	Meaning	Source
Gdp growth	Annual Gdp growth in %	Worldbank, http://data.worldbank.org
Gini/inequality	Gini coefficient for inequality	Worldbank, http://data.worldbank.org
Poverty rate	Poverty rate after taxes and transfers for a poverty line of 50%	Worldbank, http://data.worldbank.org
Unemployment	Unemployment as percentage of total labor	Worldbank, http://data.worldbank.org
Life expectancy	Life expectancy at birth	Worldbank, http://data.worldbank.org
Oldage	Public expenditure on old age (% of GDP)	OECD, https://stats.oecd.org
Survivor	Public expenditure on survivors (% of GDP)	OECD, https://stats.oecd.org
Disability	Public expenditure on disability and sickness cash benefits (% of GDP)	OECD, https://stats.oecd.org
Family	Public expenditure on family (% of GDP)	OECD, https://stats.oecd.org
T.soc.sec	Total social security benefits, which is the sum of Oldage, Survivor and Disability	Derived from OECD data, https://stats.oecd.org
Oldagesq	Square of Oldage	Derived from OECD data, https://stats.oecd.org
Survivorsq	Square of Survivor	Derived from OECD data, https://stats.oecd.org
Familysq	Square of Family	Derived from OECD data, https://stats.oecd.org
T.soc.sec.sq	Square of T.soc.sec	Derived from OECD data, https://stats.oecd.org
Lagoldage	Lag of Oldage	Derived from OECD data, https://stats.oecd.org
Lagsurvivor	Lag of Survivor	Derived from OECD data, https://stats.oecd.org
Lagdisability	Lag of Disability	Derived from OECD data, https://stats.oecd.org
Lag.t.soc.sec.	Lag of T.soc.sec	Derived from OECD data, https://stats.oecd.org
Lag.familysq	Lag of familysq	Derived from OECD data, https://stats.oecd.org
Lag.t.soc.sec.sq	Lag of t.soc.sec.sq	Derived from OECD data, https://stats.oecd.org
Law	Indicator for constitutional commitment to social security. This one varies between 0 and 3, where 3 contains the highest commitment.	Ben Bassat and Dahan (2008)
Politics	Political party in office: left, center, right	Worldbank, http://data.worldbank.org
Law*politics	Law times 0.5 for right-wing, 0.75 for center and 1 for left-wing government.	Self-created interaction variable between law and politics.
Gdp per cap	GDP per head of population (USD, constant prices, 2005 PPPs)	Worldbank, http://data.worldbank.org
Capitalfor.	Gross capital formation (annual%growth)	Worldbank, http://data.worldbank.org
T.school.en.	School enrollment, tertiary (%gross)	Worldbank, http://data.worldbank.org
Trade	Trade (% of GDP)	Worldbank, http://data.worldbank.org
Gov. cons.	General government final consumption expenditure (% of GDP)	Worldbank, http://data.worldbank.org
Inflation	Inflation, consumer prices (annual%)	Worldbank, http://data.worldbank.org
Ageing	Ageing population, share age group 66-75 (% of population)	OECD, https://stats.oecd.org

Table 2. Independent variables: Social Security Benefits

Variable		Mean	Std. Dev.	Min	Max	Observations
Oldage	overall	5.893	2.670	0	13.245	N = 806
	between		2.472	.659	10.490	n = 28
	within		1.140	1.486	11.045	T-bar = 28.7857
Survivor	overall	1.003	.770	0	3.15	N = 806
	between		.704	.0128	2.457	n = 28
	within		.327	-.528	2.199	T-bar = 28.7857
Disability	overall	1.831	1.318	0	6.512	N = 896
	between		1.096	.0385	4.594	n = 28
	within		.760	-1.268	4.705	T = 32
Family	overall	1.688	1.189	0	4.805	N = 896
	between		.966	.418	3.731	n = 28
	within		.717	-.761	3.938	T = 32
T.soc.sec	overall	8.034	4.417	0	17.598	N = 896
	between		3.539	.761	14.666	n = 28
	within		2.725	-2.919	16.688	T = 32

Table 3. Constitutional commitment variables

Variable		Mean	Std. Dev.	Min	Max	Observations
Law	overall	.455	.627	0	2.14	N = 895
	between		.638	0	2.14	n = 28
Law*politics	overall	.358	.535	0	2.14	N = 896
	between		.522	0	1.806	n = 28
	within		.153	-.377	.843	T = 32

Table 4. Dependent variables: Social and Economic Development Variables

Variable		Mean	Std. Dev.	Min	Max	Observations
Gdp growth	overall	2.633	2.887	-11.615	21.829	N = 862
	between		.969	1.318	4.896	n = 28
	within		2.725	-12.587	19.601	T-bar = 30.7857
Gini	overall	.304	.056	.198	.519	N = 338
	between		.067	.229	.508	n = 28
	within		.016	.253	.365	T-bar = 12.0714
Poverty rate	overall	.104	.044	.032	.217	N = 337
	between		.045	.051	.206	n = 28
	within		.012	.046	.154	T-bar = 12.0357
Unemployment	overall	7.648	3.590	2	24.3	N = 588
	between		2.871	3.8	16.214	n = 28
	within		2.221	-.166	15.734	T = 21
Life expectancy	overall	76.316	3.573	58.692	82.931	N = 896
	between		2.764	67.215	79.938	n = 28
	within		2.323	67.792	83.641	T = 32

Table 5. Control variables

Variable		Mean	Std. Dev.	Min	Max	Observations
Gdp per cap	overall	24502.26	8741.057	5380.564	49134.69	N = 859
	between		7545.036	9001.998	38371.87	n = 28
	within		4863.903	11732.32	40143.37	T-bar = 30.6786
Capitalfor.	overall	3.176	10.960	-51.169	88.862	N = 838
	between		2.051	.59561	11.101	n = 28
	within		10.772	-59.094	80.937	T-bar = 29.9286
T.school.en.	overall	44.829	21.336	5.678	113.983	N = 824
	between		13.219	18.289	80.788	n = 28
	within		17.544	11.668	111.260	T-bar = 29.4286
Trade	overall	65.570	30.840	15.924	178.254	N = 865
	between		28.867	22.073	132.464	n = 28
	within		12.665	4.880	120.133	T-bar = 30.8929
Gov. cons.	overall	19.238	4.479	7.516	41.476	N = 865
	between		4.099	10.647	28.757	n = 28
	within		1.847	12.886	31.957	T-bar = 30.8929
Inflation	overall	10.808	31.532	-4.480	555.381	N = 831
	between		13.704	1.059	47.985	n = 28
	within		28.346	-34.459	522.342	T-bar = 29.6786
ageing	overall	.0776	.019	.025	.155	N = 273
	between		.020	.033	.122	n = 28
	within		.008	.018	.110	T-bar = 9.75

Table 6. Correlationtable

	Oldage	Survivor	Disability	Family	T.soc.sec.
Gdppercapita	**0.146**	**-0.042**	**0.224**	**0.440**	**0.171**
Law*politics	**0.208**	**0.254**	**0.156**	**-0.066**	**0.255**
Lagoldage	**0.953**	0.634	0.232	0.159	0.900
Lagsurvivor	0.632	**0.962**	0.055	-0.086	0.676
Lagdisability	0.255	0.064	**0.963**	0.536	0.518
Lagfamily	0.166	-0.857	0.539	**0.959**	0.282
Lag.t.soc.sec.	0.902	0.678	0.500	0.275	**0.960**

Table 7. Hausmantest for endogeneity

Dependent variable	Specification	Chi^2	p-value	Include lag variables as instruments
Growth	5 vs. 3	12.40	0.054	Yes
Growth	6 vs. 4	18.08	0.021	Yes
Gini	5 vs. 3	13.01	0.011	Yes
Gini	6 vs. 4	24.51	0.000	Yes
Poverty rate	5 vs. 3	100.29	0.000	Yes
Poverty rate	6 vs. 4	47.87	0.000	Yes
Unemployment	5 vs. 3	18.36	0.000	Yes
Unemployment	6 vs. 4	24.49	0.000	Yes
Life expectancy	5 vs. 3	129.33	0.000	Yes
Life expectancy	6 vs. 4	179.00	0.000	Yes

Table 8. Overidentificationtest table

Dependent variable	specification	Sargan Hansen stat.	p-value	Include law*politics
Growth	5	4.551	0.033	No
Growth	6	4.578	0.032	No
Gini	5	0.582	0.446	Yes
Gini	6	0.847	0.358	Yes
Poverty rate	5	3.108	0.078	No
Poverty rate	6	0.282	0.093	No
Unemployment	5	0.612	0.434	Yes
Unemployment	6	0.123	0.726	Yes
Life expectancy	5	0.137	0.712	Yes
Life expectancy	6	0.438	0.508	Yes

Table 9. Effects of constitutional commitment to social security on different kinds of social benefits

	Oldage	Survivor	Disability	Family	totalsocialsecurity
Law	0.628***	0.233***	0.473***	0.234***	1.312***
Gdp per cap	-0.000***	0.000***	0.000	0.000	-0.000*
Gdp growth	-0.096*	-0.000	-0.004	-0.015	-0.089
Government consumption	-0.051	-0.081***	0.011	0.030	-0.161*
Ageing	0.803***	0.192***	-0.093***	-0.133***	0.856***
Gini	-12.63***	-1.380	-10.882***	-11.433***	-27.757***
Trade	-0.014***	0.001	0.002	0.002	-0.0140**
Constant	8.753***	1.819**	5.230***	5.378**	17.613***
R-squared	0.611	0.425	0.516	0.495	0.594

***,** and * show that correlation is significantly different from zero on the 1,5 or 10 percent level, respectively.

Table 10. Effects on Growth

Specification	(1) GDP growth b/t	(2) GDP growth b/t	(3) GDP growth b/t	(4) GDP growth b/t	(5) GDP growth b/t	(6) GDP growth b/t
old age	-0.142	-0.115				
	(-1.53)	(-0.56)				
Survivor	-0.205	-0.144				
	(-0.58)	(-0.18)				
disability	-0.062	-0.235				
	(-0.46)	(-0.43)				
Family	-0.210	0.344	-0.005	0.366	0.036	0.165
	(-0.88)	(0.81)	(-0.03)	(0.94)	(0.22)	(0.46)
Capitalfor.	0.193***	0.193***	0.179***	0.178***	0.180***	0.180***
	(16.47)	(16.64)	(10.96)	(10.92)	(30.86)	(30.74)
Inflation	-0.037***	-0.038***	-0.037***	-0.035***	-0.036***	-0.035***
	(-4.68)	(-4.74)	(-6.58)	(-7.40)	(-5.96)	(-5.55)
Gov. cons.	-0.151**	-0.142**	-0.277***	-0.261***	-0.295***	-0.289***
	(-3.10)	(-3.11)	(-4.65)	(-4.95)	(-6.84)	(-6.63)
Timetrend	-0.053	-0.056	-0.082*	-0.079*	-0.087***	-0.085***
	(-1.59)	(-1.45)	(-2.26)	(-2.13)	(-4.60)	(-4.33)
GDPpercap.	0.000	0.000	0.000	0.000	0.000**	0.000**
	(0.87)	(0.84)	(1.34)	(1.26)	(3.09)	(2.98)
oldagesq		-0.004				
		(-0.29)				
survivorsq		-0.038				
		(-0.17)				
disabilitysq		0.027				
		(0.40)				
familysq		-0.119		-0.104		-0.039
		(-1.52)		(-1.15)		(-0.53)
t.soc.sec.			0.032	0.117	0.077	0.127
			(0.74)	(1.03)	(1.48)	(0.96)
t.soc.sec.sq				-0.007		-0.003
				(-1.19)		(-0.46)
Constant	6.155**	5.671*	6.316**	5.739**	6.237***	5.966***
	(2.96)	(2.39)	(3.20)	(3.14)	(5.94)	(5.40)
N	748.000	748.000	784.000	784.000	783.000	783.000
r2	0.687	0.689	0.657	0.660		
Bic	2690.535	2712.901	2891.361	2898.601	.	.
Aic	2648.979	2652.874	2858.711	2856.621	.	.

Specifications 1-4 are OLS models and specifications 5-6 are TSLS models with the lag of the explanatory social security benefits variables as instrumental variables. ***,** and * show that correlation is significantly different from zero on the 1,5 or 10 percent level, respectively.

Table 11. Effects on Inequality

Specification	(1) Gini b/t	(2) Gini b/t	(3) Gini b/t	(4) Gini b/t	(5) Gini b/t	(6) Gini b/t
old age	-0.001	-0.001				
	(-0.42)	(-0.25)				
Survivor	-0.014***	-0.030				
	(-5.95)	(-1.91)				
disability	0.006	-0.001				
	(1.23)	(-0.06)				
Family	-0.014***	-0.028	-0.003	0.003	-0.006*	0.005
	(-4.65)	(-2.01)	(-0.73)	(0.21)	(-1.98)	(0.79)
Inflation	0.001***	0.001***	0.000	0.000	0.000**	0.000**
	(6.28)	(5.46)	(1.42)	(1.55)	(2.91)	(2.58)
Gov.cons.	-0.002	-0.002	-0.003**	-0.003*	-0.003***	-0.003***
	(-1.55)	(-2.01)	(-3.32)	(-2.52)	(-5.98)	(-4.13)
Timetrend	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***
	(11.57)	(9.07)	(8.04)	(7.62)	(12.59)	(11.17)
Trade	-0.000	-0.000	-0.000	-0.000	-0.000*	-0.000
	(-1.09)	(-0.86)	(-1.62)	(-1.61)	(-2.27)	(-1.91)
oldagesq		0.000				
		(0.27)				
survivorsq		0.006				
		(1.10)				
disabilitysq		0.001				
		(0.57)				
familysq		0.002		-0.001		-0.002
		(1.01)		(-0.71)		(-1.81)
t.soc.sec.			-0.000	-0.000	0.000	-0.002
			(-0.28)	(-0.06)	(0.02)	(-1.15)
t.soc.sec.sq.				-0.000		0.000
				(-0.23)		(1.05)
Constant	0.335***	0.368***	0.358***	0.346***	0.358***	0.347***
	(20.19)	(11.73)	(15.01)	(12.51)	(29.48)	(20.71)
N	320.000	320.000	332.000	332.000	332.000	332.000
r2	0.516	0.527	0.417	0.422		
Bic	-1941.263	-1925.357	-1957.865	-1948.905	.	.
Aic	-1971.409	-1970.577	-1980.696	-1979.346	.	.

Specifications 1-4 are OLS models and specifications 5-6 are TSLS models with the lag of the explanatory social security benefits variables and law*politics variable as instrumental variables. ***,** and * show that correlation is significantly different from zero on the 1,5 or 10 percent level, respectively.

Table 12. Effects on Poverty

Specification	(1) Poverty rate b/t	(2) Poverty rate b/t	(3) Poverty rate b/t	(4) Poverty rate b/t	(5) Poverty rate b/t	(6) Poverty rate b/t
old age	-0.001	-0.001				
	(-0.62)	(-0.16)				
Survivor	-0.003	-0.019				
	(-0.80)	(-0.95)				
disability	-0.002	-0.009				
	(-0.53)	(-0.60)				
Family	-0.014***	-0.024**	-0.007**	-0.002	-0.009***	0.003
	(-4.93)	(-2.91)	(-2.97)	(-0.39)	(-3.98)	(0.54)
GDP growth	-0.001*	-0.001*	-0.001	-0.001*	-0.001**	-0.001**
	(-2.22)	(-2.35)	(-1.96)	(-2.08)	(-2.90)	(-3.04)
Life exp.	0.004***	0.004**	0.004***	0.004***	0.004***	0.004***
	(3.73)	(3.49)	(4.32)	(4.31)	(9.38)	(8.59)
Gov.cons.	-0.000	-0.001	-0.003*	-0.002	-0.003***	-0.002**
	(-0.44)	(-0.63)	(-2.34)	(-1.79)	(-5.97)	(-3.06)
Trade	-0.000	-0.000	-0.000	-0.000*	-0.000**	-0.000**
	(-1.61)	(-1.29)	(-2.02)	(-2.07)	(-3.21)	(-3.15)
Oldagesq		0.000				
		(0.12)				
survivorsq		0.006				
		(0.90)				
disabilitysq		0.001				
		(0.61)				
familysq		0.002		-0.001		-0.003**
		(1.23)		(-1.23)		(-2.65)
t.soc.sec.			0.001	0.003	0.002**	0.003*
			(1.09)	(1.46)	(2.98)	(2.14)
t.soc.sec.sq				-0.000		-0.000
				(-1.33)		(-1.18)
Constant	-0.155*	-0.130	-0.158*	-0.169**	-0.155***	-0.163***
	(-2.14)	(-1.60)	(-2.62)	(-2.78)	(-4.79)	(-4.98)
N	326.000	326.000	336.000	336.000	336.000	336.000
r2	0.353	0.371	0.334	0.352		
Bic	-2095.036	-2080.984	-2130.259	-2128.113	.	.
Aic	-2125.331	-2126.427	-2153.162	-2158.650	.	.

Specifications 1-4 are OLS models and specifications 5-6 are TSLS models with the lag of the explanatory social security benefits variables as instrumental variables. ***,** and * show that correlation is significantly different from zero on the 1,5 or 10 percent level, respectively.

Table 13. Effects on Unemployment

Specification	(1) Unemploy-ment b/t	(2) Unemploy-ment b/t	(3) Unemploy-ment b/t	(4) Unemploy-ment b/t	(5) Unemploy-ment b/t	(6) Unemploy-ment b/t
old age	0.425	2.439*				
	(1.26)	(2.07)				
Survivor	0.769	-11.110				
	(0.89)	(-2.05)				
disability	-0.034	1.919				
	(-0.03)	(0.53)				
Family	1.734**	0.718	0.174	-2.929	0.757	-3.360*
	(2.80)	(0.23)	(0.29)	(-1.48)	(1.31)	(-2.39)
GDPpercap	-0.001**	-0.001**	-0.001***	-0.001***	-0.001***	-0.001***
	(-3.04)	(-3.13)	(-4.15)	(-3.73)	(-8.86)	(-4.97)
Inflation	-0.068**	-0.048	-0.031	-0.030	-0.030	-0.043
	(-2.80)	(-1.67)	(-1.16)	(-1.09)	(-1.28)	(-1.77)
t.school.en.	0.042	0.039	0.043	0.046	0.044*	0.052**
	(1.73)	(1.43)	(1.52)	(1.60)	(2.36)	(2.81)
Trade	0.033	0.051*	-0.021	-0.007	-0.037*	-0.007
	(1.08)	(2.44)	(-0.69)	(-0.27)	(-2.12)	(-0.34)
Gini	42.994	35.414	23.121	27.587	27.202*	34.581**
	(1.94)	(1.82)	(1.02)	(1.28)	(2.57)	(3.27)
Timetrend	0.069	0.054	0.323*	0.234*	0.292***	0.111
	(0.60)	(0.50)	(2.60)	(2.16)	(4.95)	(1.43)
oldagesq		-0.118				
		(-1.48)				
survivorsq		4.219*				
		(2.15)				
disabilitysq		-0.215				
		(-0.44)				
familysq		0.052		0.600		0.827***
		(0.11)		(1.55)		(3.45)
t.soc.sec.			-0.136	-0.032	-0.091	-0.429
			(-0.62)	(-0.06)	(-0.53)	(-1.27)
t.soc.sec.sq				0.008		0.039*
				(0.25)		(1.99)
Constant	1.157	0.269	20.479**	16.993*	17.454***	12.100**
	(0.12)	(0.02)	(3.02)	(2.68)	(4.94)	(3.25)
N	247.000	247.000	255.000	255.000	255.000	255.000
r2	0.464	0.543	0.389	0.422		
Bic	993.088	975.505	1046.632	1043.352	.	.
Aic	957.995	926.374	1018.302	1007.940	.	.

Specifications 1-4 are OLS models and specifications 5-6 are TSLS models with the lag of the explanatory social security benefits variables and law*politics variable as instrumental variables. ***,** and * show that correlation is significantly different from zero on the 1,5 or 10 percent level, respectively.

Table 14. Effects on Life expectancy

Specification	(1) Life expectancy b/t	(2) Life expectancy b/t	(3) Life expectancy b/t	(4) Life expectancy b/t	(5) Life expectancy b/t	(6) Life expectancy b/t
old age	0.017	0.159				
	(0.37)	(0.59)				
Survivor	0.277*	0.643				
	(1.99)	(1.39)				
disability	0.204	-0.316				
	(1.13)	(-0.74)				
Family	-0.298	-0.997	-0.257	-0.934	-0.286***	-0.866***
	(-0.80)	(-1.06)	(-1.00)	(-1.17)	(-4.41)	(-6.31)
GDPpercap.	-0.000	-0.000	-0.000	-0.000	-0.000***	-0.000***
	(-1.10)	(-1.17)	(-1.53)	(-1.44)	(-8.94)	(-9.52)
timetrend	0.285***	0.298***	0.299***	0.296***	0.299***	0.305***
	(6.17)	(5.67)	(6.77)	(6.82)	(43.87)	(44.77)
oldagesq		-0.014				
		(-0.64)				
survivorsq		-0.134				
		(-0.91)				
disabilitysq		0.066				
		(1.01)				
familysq		0.158		0.148		0.129***
		(1.00)		(1.04)		(4.33)
t.soc.sec.			0.070	0.259	0.075***	0.220***
			(1.37)	(1.24)	(3.78)	(4.79)
t.soc.sec.sq.				-0.010		-0.008**
				(-0.99)		(-3.07)
Constant	73.098***	74.030***	74.068***	73.480***	74.038***	74.018***
	(57.45)	(50.93)	(65.72)	(72.95)	(288.98)	(288.32)
N	806.000	806.000	859.000	859.000	858.000	858.000
r2			0.920			
Bic	.	.	1708.495	.	.	.
Aic	.	.	1689.472	.	.	.

Specifications 1-4 are OLS models and specifications 5-6 are TSLS models with the lag of the explanatory social security benefits variables and law*politics variable as instrumental variables. ***,** and * show that correlation is significantly different from zero on the 1,5 or 10 percent level, respectively.