Wageningen University of Life Sciences and Research Centre

Development Economic Chair Group

The Impact of a Basic Income on Labour Supply and Work Performance

Evidence Based on Student Experiment

MSc Thesis Development Economics

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ABSTRACT

This thesis examines the effect of a basic income policy on individuals, markets and the economy with regard to its impact on labour force participation and the performance at work. Since a basic income policy is a policy which has not been implemented in any country, the scientific literature, case studies with similar policies and the student experiment were used for the analyses. It is suggested in our hypothesis that the implementation of a basic income policy would lead to the reduction of labour force participation. However, the introduction of basic income grants could enhance the work performance due to basic income's potential to have a positive effect on working conditions given the occupation choices. The behavioural experiment was conducted in order to determine the validity of the hypotheses that were formed based on the findings from the literature search. The experiment was designed in a way that enabled us to compare the changes in behaviour between the treatment and the control group what was equivalent to the comparison of people who work under a basic income scheme and who do not work under a basic income scheme. According to the results of the experiment, it seems that the implementation of a basic income policy would not necessarily lead to any radical changes in human behaviour since the difference between the treatment and the control group was statistically insignificant.

Keywords: basic income, welfare policy, performance, labour supply

CHAPTER 1: INTRODUCTION

This thesis addresses the question as to what would be the impact of implementing an unconditional basic income on people's behaviour. Do people prefer to work less once their basic needs are met? Or are they motivated to work more for the sake of obtaining an additional income? The thesis investigates the consequences of this change in behaviour with regard to individuals' perception of leisure. More precisely, the relationship between a basic income and work performance, labour supply, wages, prices and working conditions has been analysed.

What is an unconditional basic income? An unconditional basic income is a particular utopian proposal which refers to 'the income paid by a political community to every member of the society on an individual basis without any work requirements' (Van Parijs 2013: 174). In other words, the government administers a certain minimum income to everyone, no matter whether they are rich or poor. A basic income is paid regardless of who lives with whom, how much income a person has earned in the past or earns at the moment, what her or his work performance is, and whether a person has any incentive to work at all (Ibid.). It is a lump-sum transfer, which is universal and unconditional (Tondani 2009: 246).

Hence, the concept of a basic income has the potential to support both the notion of equality and freedom, if basic income grants are sufficiently high to cover basic needs and if the policy is properly implemented while taking into consideration country's economic situation and its welfare and administration system. A basic income policy has the potential to equally free people from the worries as how they would meet their basic survival needs once they regularly keep on receiving a basic income. Martin Luther King was of the same opinion when he said: '*The solution to poverty is to abolish it directly by a now widely discussed measure: the guaranteed income. … We are likely to find that the problems of housing and education, instead of preceding the elimination of poverty, will themselves be affected if poverty is first abolished. '(Martin Luther King) (Weissmann 2013).*

Moreover, basic income grants could give power to the recipients to freely decide the direction of their lives without concerning themselves with any survival constraints. On this basis, the concept of social justice is often linked with a basic income since the scheme encompasses the fair distribution that gives to the people the freedom and the power to pursue their life goals (Van Parijs 2004: 18).

On the other hand, there are also risks associated with the implementation of a radical scheme like a basic income. The economic sustainability of such policy would largely depend on the way it is funded. If it requires increase in income taxes, then its political sustainability could be also questioned. Nonetheless, the greatest danger linked with the introduction of a basic income policy is that it could cause the reduction in labour supply what would negatively impact the country's economy.

Since a basic income has not been implemented in any country so far, I found it interesting to research the role basic income grants could play for citizens' welfare. In my thesis I took both micro and macro-economic approach toward the analysis of a basic income. My thesis is motivated by the objective to get an insight into the impact of a basic income on labour supply and work performance. So the main research question of this thesis is 'What are the effects of a basic income on the labour supply participation and the work performance?'.

Furthermore, through this thesis I wanted to find out whether a basic income could be an effective type of a welfare policy when it comes to solving the problem of poverty and inequality while

taking into account the risks and the issues linked with the introduction of a basic income scheme. The United Kingdom (UK) is the country which inspired me to learn and to research more about a basic income policy. In the UK the problem of poverty and inequality has become increasingly relevant over the last decade. In the Poverty and Social Exclusion Research Project (2014) it was found that a quarter of people living in the UK have unacceptably low standards of living, almost half of the population suffers from financial insecurity and 12 million people are too poor to engage in any social activities (PSE 2014). Henceforth, conducting a research which investigates a policy that could improve countries' welfare situation is of high relevancy and significance.

The thesis is divided into six chapters, which give answers to their corresponding sub-research questions. The use of sub-research questions was necessary in order to properly answer the main research question that would consider different attributes of a basic income scheme. Chapter 2 answers the sub-question 'What social and political aspects of a basic income are relevant to consider prior the introduction of a basic income scheme?' It introduces the characteristics of an unconditional basic income given its various forms of a definition. It describes the dimensions of a basic income and the challenges linked to the administration of a scheme. Moreover, it looks at the connection between the concept of Contemporary Justice and a basic income scheme as well as the political feasibility and economic sustainability of a basic income.

Chapter 3 examines various economic as well as psychological factors related to the concept of introducing a basic income scheme. It answers several sub-research questions such as 'How would a basic income scheme affect the behaviour of people at the individual level? Given the changes in individuals' behaviour what would be its further impact on markets and the economy?' Hence, the chapter analyses the effect of a basic income on individuals, markets and the economy. Several case studies like a pilot project in Namibia, Alaska Permanent Fund Dividend, an experiment with lottery winners and a psychological experiment on the importance of having an option not to do anything, are used for the analyses.

Following Chapter 4 describes the methodology which was used in the empirical part of the research. More specifically, it refers to the behavioural experiment which was conducted in order to determine the validity of hypotheses that were formed based on findings in Chapter 3. Hypothesis 1 states that the implementation of a basic income will not have a major consequence on the participation in the labour market. However, a slight reduction in the labour force participation is expected due to the fact that leisure is generally perceived as a normal good. According to Hypothesis 2 people who do not drop out from the labour force and continue to work under a basic income scheme will spend more effort when working than people to whom a basic income was not given. Hence, an experiment was designed in order to verify the validity of these two hypotheses. The experiment enabled us to observe the behaviour of participants who worked on a word-search puzzle as well as their work performance under a basic income scheme scenario and without a basic income scheme scenario.

Chapter 5 presents the results of the data analyses from the experiment. It explains the data analyses which were performed in response to the main hypotheses. The findings presented in Chapter 5 demonstrate the effect of a basic income scheme on individuals' behaviour in our experiment with regard to their participation, performance and motivational level. Lastly, thesis' findings are summarized and discussed in Chapter 6. Mostly qualitative data collection methods were used for my research. The existing documents like articles, books, magazines, websites, annual reports and the

official statistics provided by research organizations in addition to the student experiment were used for answering my research and sub-research questions.

CHAPTER 2: BASIC INCOME AND ITS SOCIAL AND POLITICAL ASPECTS

The following Chapter 2 introduces social and political aspects that are associated with the concept of a basic income. It starts with Section 2.1 which introduces some characteristics of an unconditional basic income. It emphasizes what a basic income does not necessarily stand for given its definition introduced in Chapter 1. Next, it describes the dimensions of a basic income like universality, individuality, conditionality, etc. It also mentions the challenges related to the implementation and administration of a basic income scheme.

Section 2.2 looks at the term Compensatory Justice. It explains what the meaning of the term and the role a properly implemented basic income could play to help to achieve this type of justice. The last Section 2.3 refers to the claims about a basic income. It investigates whether a basic income could lower inequality rates, combat poverty and, perhaps, even reduce the unemployment. Moreover, Section 2.3 analyses political feasibility and economic sustainability of a basic income as well as its impact on the environment. Lastly, Section 2.4 gives a summary of the chapter.

2.1 THE CHARACTERISTICS OF A BASIC INCOME

Section 2.1 is dedicated to the introduction and the explanation of several facts about a basic income. Firstly, the connection between the level of basic income grants and the funding of a basic income policy is mentioned in relation to the acceptance of this scheme by the general public. Afterwards, the section describes seven dimensions of a basic income. Lastly, the issues and bottlenecks associated with the implementation and the introduction of a basic income policy are discussed.

2.1.1 The Facts about Basic Income

The definition of a basic income stated in Chapter 1, which defines a basic income as 'the income paid by a political community to every member of the society on an individual basis without any work requirements' (Van Parijs 2013: 174), does not specify that a basic income needs to be sufficient to cover for all basic needs that a person has. A universal basic income does not have to be the only social benefits that citizens receive. On the contrary, a basic income is sometimes considered in the proposals as a supplement to other social benefits such as housing benefits and career bonuses. Of course, the level of basic income grants is closely linked to the government's revenues what has a clear impact on its affordability.

In most cases a basic income is supposed to be funded by a Nation-state, whether it is labelled as state bonus, national dividend or citizens' taxes. Even though, it can be also paid by a politically organized unit at the province or other level (Van Parijs 2004: 10). Depending on the funding of a basic income scheme the popularity of the program would vary. If it is paid by working citizens, there is a chance that the employed people would not be in favour of such welfare program. Therefore, it could be a better alternative if a basic income is funded by a common pool of revenues that the government uses to pay for the country's expenditures. For example, the government could use the return on publicly owned productive assets to pay for a basic income (Ibid.). If a basic income policy is funded by

a land tax or a tax on natural resources, the concept of a basic income would receive much friendlier reception.

In fact, if a basic income is sufficiently high to provide the citizens with a satisfactory standard of living irrespective of their work contribution, most of the other benefits could be eliminated. Due to this presupposition, some people believe that a universal unconditional basic income would not result in high additional administrative costs if it is implemented through existing welfare programs (Wright 2000: 150). However, this assumption does not take into consideration other costs like setting up the database and monitoring cost.

Next, there is a myth that a basic income makes the rich richer just like it makes the poor poorer. Even though the same income is paid to everyone it does not necessarily make the persons with different income levels richer by the same amount. If a basic income is funded by a progressive income tax then the rich would end up paying more for its funding than the poor (Van Parijs 2004: 13). Hence, the implementation of a basic income does not discriminate rich or poor people due its contribution and distribution properties.

2.1.2 The Dimensions of Basic Income

According to Wispelaere, there are seven dimensions of a basic income. Those dimensions are universality, individuality, conditionality, uniformity, frequency, modality and adequacy. A basic income is universal and as such its extent covers the whole population, though through selective measures a subset of the population like non-citizens or inmates can be excluded (De Wispelaere and Stirton 2004: 267). Since the policies which claim to be universal can be selective in their principles and administrative implementation, it is crucial to pay close attention to the implementation of the policies to see whether the implementation is being conducted properly and in accordance with all the policy claims. Therefore, it is advisable to pay close attention to the changes in administrative practices when introducing a basic income.

Next, the dimension of individuality refers to the standard unit that is targeted by the policy. Welfare policies are in most cases administered to a household unit or individual, but a basic income is originally directed at individuals. Although the suggestion to provide basic income per household units was made by some political actors as a compromise in order to advocate a basic income policy. The term conditionality, indicates the conditions that restrict a person's eligibility for the offered service. The conditions can set criteria needed to acquire eligibility or they can impose behavioural constraints to retain eligibility. Even though a basic income policy is unconditional, a hidden form of conditionality can exist when the recipients are treated differently within an officially uniform framework (De Wispelaere and Stirton 2004: 268). Hence, it has to be reiterated that the monitoring of how a basic income policy is implemented at the individual level is crucial for ensuring its effectiveness.

Following dimension is the dimension of uniformity that sets the extent to which all the eligible recipients receive similar treatment in terms of the obtained benefits. In some welfare programs the allocation of benefits is differentiated based on the age of the recipients e.g. children, adults of working age and pensioners (Ibid. 269). When it comes to the implementation of a basic income scheme it might be advantageous to make good use of the distinction that is already installed in the existing welfare systems. It could make the process of the implementation of the new policy easier.

Regarding the income payment frequency, a basic income is proposed to be a regular source of income for the eligible recipients. However, the timing as to when this regular benefit is paid to the recipients is not clearly specified in the basic income proposals (Ibid. 270). Certainly, it would make a difference to receive a benefit on weekly, monthly or yearly basis. Nonetheless, a society which is relatively well-off and ,therefore, it is not very concerned by securing its immediate basic needs possibly would not mind receiving a basic income in longer intervals than weeks or months what could substantially reduce the administrative costs. In any case, basic income grant would give a certain level of purchasing power to its recipients at regular intervals.

Modality is about the form that a universal transfer takes. A basic income is usually associated with cash transfers but different forms such as in-kind transfer could also take place. If the policy seeks to distribute to the population not only benefits related to private goods but also related to public goods, then in kind transfers like food coupons and education vouchers could be also part of a basic income scheme. However, just as the word 'income' implies, a basic income scheme normally uses the payment in cash rather than in-kind. In-kind forms act like complements rather than substitutes of a basic income. Lastly, adequacy relates to the ability of universal basic income scheme to meet the basic needs of the recipients (De Wispelaere and Stirton 2004: 271).

Henceforth, a careful analysis, as to how much of a basic income would be adequate for meeting the survival needs of the recipients in addition to other social benefits, if there are any, and how high is the amount of basic income grants that the government can afford to pay to its citizens, needs to be undertaken in order to assure the effectiveness of the scheme.

2.1.3 Administration of Basic Income

When the government introduces new welfare policy, it is necessary to take proper steps to ensure that every eligible individual can receive a share in welfare. A social policy needs to be backed up by social legislation what enables citizens to enforce their rights and duties. Typically, the welfare state provides social security benefits that are selective, conditional and temporary. Since welfare states mostly rely on basic institutions of society like family and market to secure the basic provisions for most of the members of the society, welfare policies target people who are incapable of securing the basic means for their livelihoods. They are very restrictive in terms of selecting the right recipients who need the benefits most (Groot 1997: 204).

On the contrary, a basic income is unlike most of the security benefits thanks to its universal, unconditional and permanent properties. However, as to which type of welfare policies would be the most effective given the country's current situation largely depends on the effect it would cause on citizens' behaviour. For example, assessing the right monetary level of benefits is a delicate job, because if the benefits are too high the policy would be economically unsustainable in the long term and if they are too low the policy would not meet the objectives that were supposed to be achieved making the scheme socially unacceptable. Hence, accurate analyses of the country's situation and the predictions of the impact of welfare policy on citizens' behaviour could significantly contribute to the assessment of the proposed welfare policy reform.

In fact, the implementation and the administration of the universal basic income usually results in the rise of three bottlenecks which often are not taken into consideration when designing the proposals for a basic income. The possible bottlenecks are the difficulty to enlist eligible claimants, to design universal modalities of payment that would reach all beneficiaries and to design effective

oversight mechanisms that do not overlap with the existing administrative systems (De Wispelaere and Stirton 2012: 105). The potential threat of the bottlenecks should not be taken lightly. The bottlenecks are problems which need to be solved in order for a basic income to be implemented effectively and efficiently. The administrators should be fully aware of the errors within the system in order to respond on time since the proper implementation of a basic income scheme largely depends on the administrative capabilities (Ibid. 107). Nonetheless, a basic income scheme could simplify the complexity of reaching the intended beneficiaries as it is in its broad sense 'universal and unconditional'.

The first bottleneck of the implementation of a basic income which refers to the identification of eligible recipients represents smaller problems to a basic income scheme than it would to any other welfare program since there are not many people who are not entitled to the benefit (Ibid. 108). Thereafter, the cost of the implementation of a basic income can be in some cases lower as it is not too difficult to exclude non-beneficiaries. However, in the countries that lack a social assistance scheme that encompasses most of the population, the cost of creating an appropriate cadaster which covers almost the whole population and keeping it up to date would be high. For example, the United Kingdom made a proposal to create a nationwide identity card system of which the medium cost was estimated by the London School of Economics and Political Science at GBP 14.5 billion over ten years (Ibid. 109).

Even though setting up and maintaining an accurate list of the beneficiaries is crucial for ensuring the basic income's target efficiency, the cost as well as the ethics associated with its implementation need to be addressed. Furthermore, relying purely on already existing cadasters such as social security databases which have the tendency to be very selective could import their deficiencies into the basic income scheme. Another option would be integrating several cadasters like health insurance registers with voting registers. However, making sure that a person does not appear on a basic income register would result in additional bureaucratic costs (Ibid. 111). Hence, to guarantee the universalism of a basic income one must seriously weigh the cadasterability of registering all entitled citizens when designing a basic income policy.

Regarding the second bottleneck, selecting the modalities of payment through which a basic income would be delivered is an essential step during the process of implementation. The literature on basic income proposes several options such as the taxation system which would use tax deductions as means of distributing the benefits. Nonetheless, this existing administrative mechanism would have to find a way of how to include people who do not work (Ibid. 112). Therefore, the income tax system might not sufficient in covering all the eligible beneficiaries of a basic income. Also a basic income scheme is individual-oriented, not household-oriented what makes it more difficult to simply rely on a tax deductions system.

Moreover, certain types of modalities naturally assume that people have a bank account or they have an easy access to create one while meeting the required conditions to open a bank account (Ibid. 113). The assumptions made by the policy-makers when designing a basic income system require special attention as they have a direct impact on the success of the scheme. An option which could solve the problem linked to the bank accounts could be a basic income debit card that tops up automatically every period granted to recipients by the government (Ibid. 114). Nevertheless, this approach would consist of some additional transaction and administration costs. It would take a lot of preparation to come up with an efficient option which would win political support.

The last bottleneck emphasizes the need for an overseeing mechanism suitable for a large scale implementation associated with a basic income. The oversight mechanism is necessary for ensuring that there are no issues in delivering the benefit, especially to people who are the most vulnerable. The task of the oversight mechanism would be to identify people who fail to receive the benefit, to quickly eliminate the error and to prevent further failings of the system (Ibid. 115). The difficulty of establishing the oversight section would be to avoid a system that resembles public surveillance. Otherwise, people might perceive the monitoring mechanism as an increase in bureaucratic power. Furthermore, monitoring of the beneficiaries would require a lot of time, effort, patience and money what could make the option of implementing basic income policy less attractive.

To conclude, most of the proposals of a basic income are not particularly concerned by the potential bottlenecks what can result in some fatal errors that would become more visible during the process of implementation. It is important that policy-makers do consider seriously the administrative aspects of the implementation process and other practical challenges.

Section 2.1 started by emphasizing the fact that a basic income does not have to be necessarily high enough to cover for all basic needs because a basic income policy can also act as a supplement to other welfare policies. Next, it was stressed that it is advisable to carefully plan the policy with regard to the dimensions of a basic income like universality, individuality, conditionality, uniformity, frequency, modality and adequacy in order to ensure the effectiveness of the scheme. Regarding the implementation of a basic income, it was shown that the inadequate preparation could lead to the rise of several bottlenecks which could make the process of administering a basic income policy much more difficult.

2.2 COMPENSATORY JUSTICE

The implementation of a basic income is often associated with the term compensatory justice. But what is meant by the term compensatory justice? What conditions are required for achieving compensatory justice? And why a basic income is relevant component of this type of justice? Section 2.2 tries to answer all these questions by referring to the theory on compensating wage differentials.

The implementation of an unconditional basic income which can sufficiently cover all basic needs that would secure an appropriate standard of living meets the condition of compensatory justice which allows people to freely decide their labour careers (Groot 2002: 144). Thereafter, implementing the model of a basic income is perceived to be more favourable for meeting the criteria of compensatory justice compared to other welfare programs.

The theory that is focused on compensating and equalizing the differences in wages founded by Adam Smith states that wage differentials between jobs that have similar requirements should be equalized once the monetary and nonmonetary compensation is summed (Ibid. 145). For example, a job with bad working conditions should be compensated for those conditions by giving higher salary than a job with similar requirements but with a safe and better workplace. Thereafter, the concept of compensatory justice is significant for maintaining the values of equality as it follows ‘equal pay for equal work’ principle. It compensates for the workers’ welfare differences between their jobs by trying to avoid situations where pleasant and more secured jobs are better paid than unattractive and dangerous work. Such disadvantages among jobs could to be addressed through appropriate compensation.

Even though a basic income can be very helpful in securing compensatory justice, it needs to be emphasized that whether compensatory justice prevails depends a lot on the level of basic income. Ideally, a basic income should ensure that the citizens find unemployment an acceptable option without causing any distortion of competitive forces on the labour market for low-wage labour. The level does not have to be necessarily higher than the level of the total social benefits.

However, it should still be high enough to free people from forced labour. Such basic income would give an option to people to refuse unpleasant and dangerous jobs causing the rise in wages to compensate for the work's unpleasantness (Ibid. 154). Moreover, substantial basic income could have a favourable impact on the salary of low-skilled workers as well as the design of the workplace in order for employers to ensure the presence of the required number of workers for their production. However, more nonmonetary compensations than the monetary payments tend to be employed by employers.

Nonetheless, one could argue that the higher the level of a basic income is, the higher would be people's tendencies to live off a basic income instead of going to work. Although some people could view such choice as parasitic, can they complain about voluntarily unemployed people, if there are no people who are under the pressure to be employed? Properly designed basic income scheme could reduce the pressure that citizens feel when they take jobs which are underpaid and have no nonmonetary compensation that balances out the low pay since basic income grants would increase people's income security.

The notion of compensatory justice is, indeed, interesting factor to consider when discussing the potential outcomes of implementing a basic income policy since it stresses the fact that basic income grants could improve employees' working conditions.

2.3 CLAIMS ABOUT BASIC INCOME

Section 2.3 starts by explaining why economic inequality is undesirable. It examines whether a basic income could reduce levels of economic inequality by combating poverty and unemployment. Afterwards, political feasibility of implementing a basic income scheme is analysed by referring to Alaska's Permanent Fund Dividend policy. Lastly, Section 2.3 questions economic sustainability of implementing a basic income scheme with regard to funding possibilities. Moreover, the arguments related to environmental issues are also discussed.

2.3.1 Basic Income and Economic Equality

Another way of looking at the proposal of a basic income would be considering its capabilities to transform contemporary capitalist society into a more egalitarian one. A universal basic income consists of emancipatory visions to reduce levels of economic inequality. However, why is reducing the economic inequality beneficial for societies in the first place? Unequal distributions of the standards of living generally make humans suffer more than equal distributions. However, there is an exception when high income inequality produces high levels of economic growth of which some of the benefits are distributed among the poor. This refers to the neoliberal economists' claims that giving more money to the rich would ultimately benefit the poor as well (Wright 2000: 144). Such claims could serve as a justification to enrich the rich and to keep their income tax relatively low. However, maintaining an unequal society in the present would reduce the window of opportunity for future

generations that are at the bottom of this unequal distribution of the standards. Thereafter, lower inequality rates are more in favour than higher inequality rates since they spread the equality by increasing the minimum welfare among the member of the society.

Another reason, why wealth and income inequality is undesirable is that it restrains people from 'real freedom'. People who are forced to enter the labour market in order to cover their basic needs have much less autonomy and freedom compared to people in the upper upper class who can comfortably live thanks to the returns on their investments. Large inequalities can also sabotage the values of democracy since different distributions of wealth and income would give to people at the top greater power to influence the outcome of politics whether it is through influencing the elections, threatening to disinvest or to flee from the country with large amounts of capital (Ibid. 145). This is a clear example how economic inequality can affect political equality by making it more unequal. Moreover, unequal society can enforce the social categorization of people by grouping people into the categories based on their income encouraging discrimination and resentment while undermining values of solidarity, unity and respect.

Nonetheless, challenging the country's current welfare state which is seemingly sustainable by implementing radical scheme such as a universal basic income policy could be a better option for combating the issues that selective welfare programs would have the difficulty to offset. The first issue a basic income scheme could help to combat refers to the difficulty that the poor encounter when trying to escape from the poverty trap. Most people are trapped in the poverty due to low earning power and lack of opportunities to find a job with higher earnings than the social security benefits they otherwise receive. This creates a disincentive for the poor to work (Groot 1997: 205).

The second problem that a basic income scheme could help to combat relates to unemployment. Among unemployed people the majority has low earning capabilities and low education. One way for the government to lower unemployment rates would be by initiating a more active labour market policy or by imposing quotas on the employers (Ibid. 206). However, could a basic income scheme solve the problem of unemployment more effectively? Under a basic income policy it could seem more profitable for people to go to work for additional income. They would not have to compare anymore the level of minimum wage with the level of social security benefits they would obtain if they decided to remain unemployed. Actually, once a basic income scheme is implemented, there is no need to define a minimum wage anymore.

Of course, looking for the proposal which would effectively address all the issues associated with income and wealth inequality, unemployment and poverty simultaneously is very difficult and perhaps even impossible. Several institutions would be needed for accomplishing such goals. In the contemporary capitalist societies the best way to counterattack inegalitarian effects would be through diverse forms of government spending and welfare policies (Ibid. 146). However, these approaches do not tend to be fully universal and as a result their effect on inequality is rather modest. Thereafter, the utopian proposal which refers to a basic income can be considered to be a nice alternative to attempt to reduce economic inequality.

Be that as it may, there are also arguments against the implementation of an unconditional basic income policy. According to the economic theory an unconditional basic income can have a negative income effect on labour supply since the increase in non-labour income could encourage people to supply fewer hours of labour and to consume more hours of leisure. Moreover, negative substitution effects could also occur if basic income grants are financed through the increase on

income and wealth (IZA World of Labour 2015: 6). Henceforth, the implementation of a basic income has also its drawbacks which could nullify the potential benefits of implementing a basic income scheme. The economic drawbacks of introducing basic income grants are further described and investigated in Chapter 3.

2.3.2 Political Feasibility of Basic Income

Is utopian thinking about basic income politically feasible? There are several political parties which are in favour of this utopian ideology and they actively promote it. For instance, The Green Party of Wales and England is one of them. The Green Party of England and Wales is a democratic organization, which intends to create 'a just, equitable and sustainable society' (Green Party). This Green Party wrote General Election Manifesto 2015, in which it proposes to implement a 'Citizen's Income' of 72 pounds a week in order to cease current dependence on economic growth without causing individual hardship and to promote sustainability. More precisely, Green Party wishes for zero or negative economic growth since they believe that it would turn England into environmentally friendly country (Green Party 2015). Hence, they are big supporters of a basic income scheme which they apparently consider as politically feasible.

Next, the case of Alaska which uses Permanent Fund Dividend scheme proves to be feasible and also sustainable as it is strongly supported by the general public and political parties. The Alaska Permanent Fund Dividend is fairly similar to the definition of a basic income because it is 'universal, individual, non-conditional, uniform, regular, and provided in cash'. The difference would be that it is not stable in size due to the fluctuations of market price of oil and it is relatively small for combating the poverty. The Alaska state founded the Alaska Permanent Fund Dividend in 1976 in order to share with public the revenues generated from oil resource. Deposits in the fund come from a 25% share of royalties and they represent a saving of about 10% of total oil revenues (Goldsmith 2010: 4). The state government decided to create portfolio with such dividend not only in order to share the revenues gained from unsustainable petroleum production with Alaska citizens but also to ensure that those money would not be overspend and hence wasted on needless public matters.

Of course, given its similarity with a basic income scheme, Permanent Fund Dividend was not welcomed by all law-makers since they shared the same fears regarding the effects it can cause on society as critics of a universal basic income. More precisely, they were afraid that people would spend those money unwisely e.g. on alcohol, trips to Hawaii, etc.; and that it would encourage people to leave the labour market (Ibid. 6). Nonetheless, the distribution of dividends among Alaska's citizens was considered by supporters to be the best approach how to share the benefits from petroleum revenues with everyone. Nowadays, the Alaska Permanent Fund dividend is the most popular among state government programs not only because of its equal royalty income distribution but also because of its equality increasing tendencies (Commons 2007).

Nonetheless, the popularity of Alaska's Permanent Fund Dividend program could be mostly caused by the fact that it is funded by the return on a jointly owned asset and not by people's taxes (Van Parijs 2013: 179). It is questionable whether a basic income funded by placing a tax on people's wages instead of a tax on natural assets would lead to the same levels of political feasibility. Since political feasibility largely depends on public opinion, public perception, regarding the source of a funding for a basic income, is a very important determinant which should not be neglected.

2.3.3 Economic and Environmental Sustainability of Basic Income

In order for a basic income to be economically sustainable in the long run it must keep basic incomes at a reasonable level, reduce unemployment and ensure that sufficient number of people would have incentives to work (Groot 1997: 206). The concerns regarding practical feasibility are directly linked to the funding of a basic income program and to the effect on people's incentives to work. If a basic income policy is funded by people's income taxes, then a sufficient number of workers is necessary for generating the production and taxes which the government needs (Wright 2000: 151). If too many people decide to leave labour force, then basic income policy funded by income taxes would fail. Thereafter, a 'sustainable basic income grant' needs be implemented in order to secure a sufficient supply of labour. However, it is arguable whether such basic income could have the capacity to cover up all basic needs.

Nevertheless, there are factors like growth in gross domestic product after World War 2, the reduction of working hours, improvement of working conditions, the increase of female workers and the increase of the unemployed, disabled and early retired people that facilitate the implementation of a basic income (Groot 1997: 208). However, despite these conditions which support the introduction of a basic income scheme, most politicians are afraid that the cost of the implementation of this particular policy is too high.

As it was mention in the previous Section 2.3.2, the political parties which look upon the concept of a basic income most favourably are green parties. These parties are particularly fond of the idea to implement a universal basic income because in many proposals a basic income is portrayed as a tool that promotes sustainability and zero or negative economic growth. Truly, following the reasoning that what is best for output growth is not necessarily the best for welfare growth, the environmental component has a significant effect on people's welfare as well as on the welfare of future generations (Manza 1995: 26). Some environmentalists and ecological economists like Næss and Høyer critize the concept of limitless economic growth, because they believe that it leads to the degradation of the environment since it causes the depletion of non-renewable natural resources, the rise of emissions and wastes from economic activities, breakdown of ecosystems, etc. (Xue 2010: 8).

Henceforth, it has been concluded that the pursuit of economic growth might not be the best strategy to diminish people's suffering. If basic income benefits would indeed lower the incentives to work and to save money, there is a possibility that it could negatively affect economic growth to the delight of environmentalists who are of the opinion that even the increase in eco-efficient activities would not be able to compensate for a continual growth in production on the long term basis. However, using a basic income to slow down economic growth for ecological purposes could be considered by some scientists as rather a crude way of solving environmental issues. Instead it could be more appropriate to design policies that specifically target problematic areas through increased taxation and support activities which have a positive effect on the environment (Manza 1995: 27). Since not all proposals that encourage the implementation of a basic income are designed in a way that considers combating environmental threats as a priority, the design of specific policies that would precisely aim at the issue areas would be far more effective.

Next, critics of a basic income argue that the scheme is not economically sustainable because providing everyone with a minimum income is too costly and it could spur unproductivity among citizens. Furthermore, many neoliberal and neoclassical economists oppose basic income scheme because of their belief that living a life should not be too easy for people in order to induce people to

enter the labour market and to work hard (Congress, Widerquist, Lewis, Pressman, Stony Brook University. School of Social and Stony Brook University 2005: 2). The opponents are afraid that once people start receiving security benefits there would be many disincentives to go to work and the workers' job performance would decrease. They justify their arguments by stating that people who live difficult life have greater incentive to work and to work hard. Meanwhile, people's situation can be exploited by employers whose incentive to pay better wages would be low (Ibid.). The implementation of a basic income could prevent this type of exploitation because it increases individuals' income security and, hence, it makes it easier for them to refuse a job which is below decency level.

It has to be reiterated that the arguments which support the idea of an unconditional basic income are often based on normative economics and policy advocacy rather than hard scientific data (Ibid.). Nevertheless, it is important to recognize that people often do not behave as neoclassical economists assume they would. Altruistic behaviour accompanies selfish behaviour; people sometimes engage in acts of heroism and they do not always act as calculative rational human beings. On the contrary, people have learnt social rules and norms in order to benefit from mutual social interaction rather than relying merely on oneself.

Although a basic income scheme might prevent the exploitation of workers by their employers, it can cause another type of exploitation. Academics and politicians are concerned that the implementation of a basic income would be unfair towards people who choose to work as opposed to people living on their basic incomes (Manza 1995: 8). However, we cannot say with certainty how basic incomes would affect the behaviour of recipients. Also, whether people who choose to work under a basic income scheme would perceive their situation as exploitative, would depend a lot on the way the general public views a basic income policy with regard to its institutionalization and funding.

2.4 SUMMARY

In this chapter fundamental learning points about a basic income policy were introduced. It was stated that implementing an unconditional basic income is very costly and it might require higher taxes to finance. Several potential positive benefits of implementing basic income grants were mentioned such as the improvement of working conditions, the reduction of economic inequality and having a positive effect on education and occupation choices. However, it was stressed that there might be also some disadvantages like higher income taxes, reduction in labour supply and lowered work effort, which need to be taken into consideration when designing the proposal for a basic income scheme.

Overall, whether the implementation of a basic income would be more beneficial than the country's current welfare system would depend a lot on the way it is financed because the financing would affect the popularity of the scheme as well as its economic sustainability; whereas the level of a basic income would directly affect the behaviour of individuals.

CHAPTER 3: ECONOMIC AND PSYCHOLOGICAL IMPACTS OF BASIC INCOME

This chapter is focused on the examination of various economic as well as psychological factors related to the concept of implementing a basic income. It starts with Section 3.1 which describes the effects of a basic income on individuals by analysing at first the impact of welfare programs on work incentives in general. Afterwards, it examines the effect of a basic income on work hours by differentiating between leisure perceived as a normal good and leisure perceived as an inferior good. Moreover, the role that intrinsic motivation plays when it comes to the work effort is also investigated.

Section 3.2 looks at the effect of a basic income on the market by investigating how labour supply, wages and prices can be affected after the implementation of a basic income. Again it also considers how intrinsic motivation affects the supply of labour. The basic model of labour supply is used for better understanding of the change that would occur in the labour market under a basic income scheme. Next Section 3.3 refers to the effect of a basic income on the economy. It assesses whether the concept of a basic income is economically sustainable with regard to the affordability of the program. It considers potential funding possibilities for a basic income such as the increase in marginal taxes and savings obtained from the elimination of welfare programs.

Section 3.4 is an empirical section which provides some evidence that supports some of the arguments mentioned in the previous sections. Few experiments and case studies are presented which include a survey on a basic income, a pilot project in Namibia, Alaska Permanent Fund Dividend, an experiment with lottery winners, negative income tax experiments and lastly a psychological experiment on the importance of having an option not to do anything. This is followed by Section 3.5 which refers to the hypotheses formed based on the findings from theoretical models and experiments. Lastly, Section 3.6 summarizes the most important findings of Chapter 3.

3.1 THE EFFECT OF BASIC INCOME ON THE INDIVIDUAL

Analysing the impact of a basic income at the micro level first, Section 3.1 is focused on the potential changes in the individual's behaviour after the implementation of a basic income. Firstly, the impact of welfare programs on work incentives in general is discussed. Afterwards, the section looks more specifically at the impact of a basic income scheme on work hours by making a distinction between leisure perceived as a normal good and as an inferior good. Moreover, the influence of intrinsic motivation on work effort of an individual is also examined.

3.1.1 Welfare Programs and Work Incentives

Since a basic income scheme is a simpler version of welfare programs, it might be interesting to look first at the effects of welfare programs on work incentives in general. These effects have often been studied with the use of a basic model of labour supply. This analytical tool is useful for the analysis of different types of welfare programs and the analysis of the effects of changing the program parameters (Moffitt 2002: 2402). Despite its shortcomings the basic static model of labour supply is the most popular tool for the analysis as it proves its practicality for the analysis of work incentives.

Nevertheless, there are some unique features of using the model for welfare program analysis as opposed to studying with the model the work incentives of income and payroll taxes. One of those features refers to a non-convexity that can occur in the budget set somewhere above the range of earnings, at least at the point where income increases to the point of ineligibility, caused by the standard which determines the eligibility by setting a certain level of income below which individuals would be eligible for welfare assistance. Hence, the changes in the welfare reform parameters lead to a change of the eligibility point or to a change of work incentives by offsetting them (Ibid. 2402). These features make the analysis of the effects on labour supply much more complex. It could be stated, that there is no welfare program which would cause the same labour supply effects for different individuals.

The basic static model of labour supply looks at an individual's preference function over leisure hours (L) and consumption (C), which is denoted as U=f(L,C) and budget constraint N+WH=PC=Y, where N refers to unearned income, W refers to hourly wage rate, H is hours of work and P is the price of consumption goods. When multiplying consumption C with the price of consumption goods P, we get income Y.

A generic welfare program benefit would be B=G-t(WH+N), where G is the guaranteed income given to people with zero income and t is the marginal tax rate (Ibid. 2403). If we add benefits into the budget constraint, we would have G-t(WH+N)+N+WH=Y what equals to (WH+N)(1-t)+G=Y.

Figure 1 presents the budget constraint created as segment CD, where the intercept with distance AC represents G. The slope of segment CD is W(1-t). The non-welfare constraint AE has slope –W and intercept N which is assumed to be zero. Then, the arrows labelled 1 and 2 indicate two types of labour supply response with regard to the creation of the welfare program. Both types of labour supply response result in reductions in labour supply (Ibid. 2404).

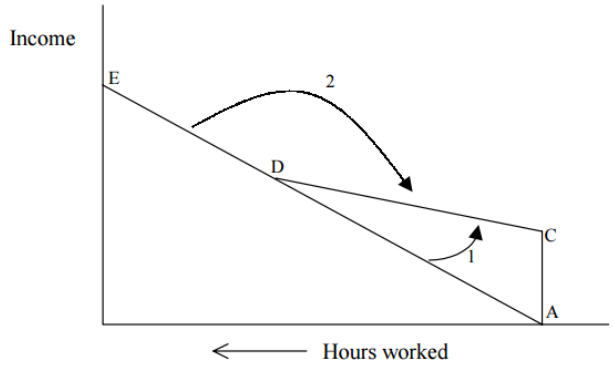


Figure 1: Budget constraints in a Generic Welfare Program

When a welfare program is created, some individuals interlace between not working at all and enjoying the benefits of being on a welfare program with working and not being on a welfare program. Once a welfare program is introduced, there would be the reduction of people who want to work more since they would prefer to enjoy welfare benefits. Second reduction refers to the reduction of people who would want to work less. Since for some individuals being on welfare has its own disutility in the form of time and costs required to comply with all the rules and requirements of welfare (Ibid. 2404), people might behave in a way that would result in avoiding welfare

participation, especially if welfare costs exceed the utility gains of being on welfare. This behaviour can explain the reductions in two types of responses of labour supply as there would be fewer people who want to be on welfare despite its income and leisure benefits and fewer people who do not want to be on welfare.

According to this model, welfare programs can have negative effects on work incentives due to individuals who would reduce their working hours in order to enjoy the benefits of being on wefare. However, when analysing the situation in greater detail it can be seen that the impact of welfare programs such as a basic income on work incentives depends on factors like people's perception of leisure and their intrinsic motivation for a job as explained in Sections 3.1.2 and 3.1.3.

3.1.2 Perception of Leisure as Normal or Inferior Good

One of the biggest concerns regarding the implementation of a basic income is its effect on the individuals' behaviour fearing that a basic income would encourage idleness. This section looks more closely at the impact of reforming minimum social benefits with a basic income on the propensity to work. Certainly, people who already work could feel the temptation to reduce their working time (Gamel, Balsan and Vero 2006: 480). Nonetheless, whether people decide to reduce the hours they spent working once their income is increased, depends a lot on their perception of leisure.

If no difference between the perceptions of leisure is made, then the introduction of a basic income scheme in which the marginal tax rate equals zero would simply increase the income while maintaining the same opportunity cost of leisure time as there is no substitution effect what is shown by Figure 2. Figure 2 illustrates that the income line would simply move upwards as the opportunity cost of leisure time remains the same. Their analysis concludes that the effect of a basic income is neutral due to its facilitation of neither positive nor negative work incentives (Gamel, Balsan and Vero 2006: 483).

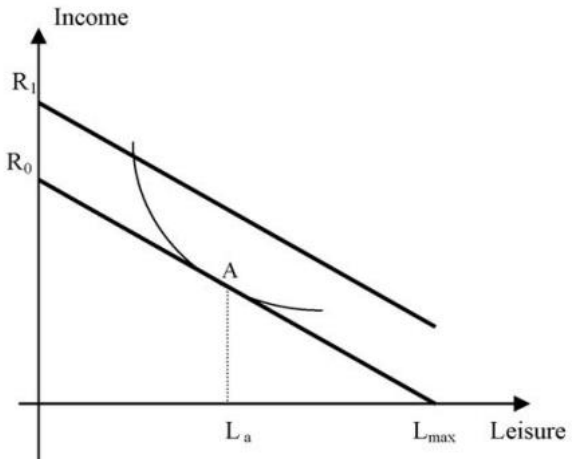


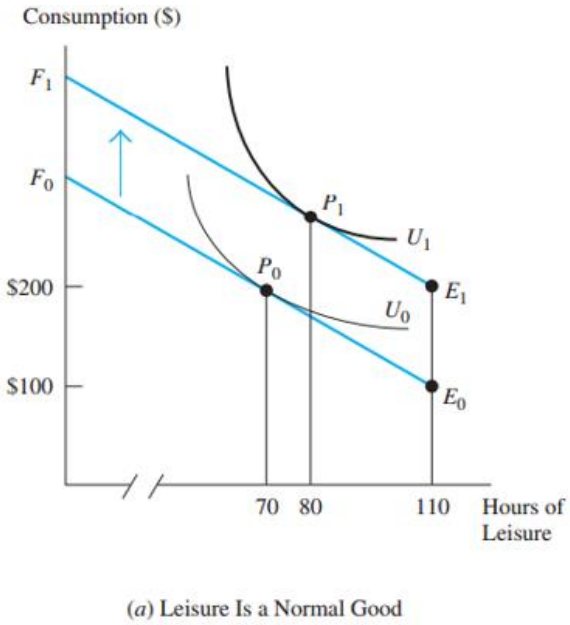
Figure 2: The effect of a basic income not affecting the opportunity cost of leisure

However, assuming that a basic income scheme would not change the net wage rate, the effect of a basic income on the propensity to work would differ depending on whether leisure time is considered by people as normal good or inferior good. If we consider the role of the income effect for this analysis, the importance of the perception of labour is clear. If leisure is perceived as normal good,

income and substitution effects would have opposite directions when it comes to the change in wage rate. People with the lowest wage rates would have relatively strong negative substitution effect for leisure and weak income effect. However, beyond a certain pay level that varies per individual the positive income effect would start growing stronger (Ibid. 484). At that time the individual prefers to increase his leisure time rather than the income. Hence, the amount of time a person works would decrease as the wage rate increases. One could conclude that since a basic income increases the income of an individual, the labour supply would decrease in cases when leisure is perceived as normal good. Nonetheless, since basic income grants represent higher relative increase in purchasing power for poor people what leads to negative income effect, those individuals are people who perceive leisure as inferior good.

In order to support the statement that a perception of leisure as a normal or an inferior good affect work incentives differently, researchers can look at the change in work hours when non-labour income increases due to basic income grants. Figure 3 illustrates the situation when non-labour income N increases, while keeping the wage constant. The worker's initial non-labour income equals $100 weekly, which is identified with endowment point E_0 which tells how much a person can earn without entering the labour market. Associated with the wage rate, the budget line is shown by F_0E_0. The point P_0 shows the place where the utility is maximized, at which the worker spends 70 hours on leisure and 40 hours on work.

Next, the increase in non-labour income to $200 changes the endowment point to E_1, what gives the new budget line F_1E_1. There is a parallel shift in the budget line because the increase in non-labour income holds the wage constant. Since receiving a basic income makes the worker better off, the utility curve shifts higher to point P_1 (Borjas 2013: 35) This model works under the assumption that the individual wants to choose the particular combination of goods and leisure that maximizes his utility. Therefore, the individual's work incentives reflect the utility-maximizing behaviour.



(*a*) Leisure Is a Normal Good

Figure 3: The effect of a basic income on work hours (leisure as a normal good A and as an inferior good B)

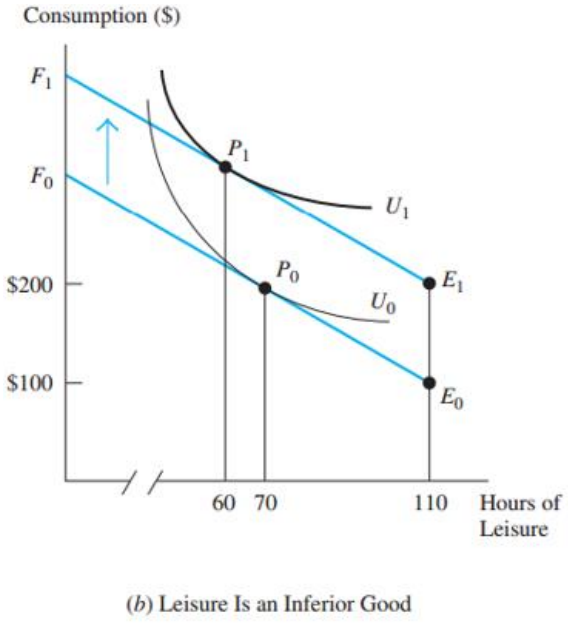


Figure 4: The effect of a basic income on work hours (leisure as a normal good A and as an inferior good B)

Figure 3 illustrates the situation when leisure is a normal good, meaning that the increase in income, while holding the prices of goods constant, increases the consumption. In this case receiving a basic income would increase consumption of goods as well as the hours of leisure what consequently reduces work hours. On the other hand, Figure 4 shows the situation when leisure is considered as an inferior good and therefore the increase in income would decrease its consumption. In this respect, the demand for leisure hours is reduced and therefore the work hours increase. The impact of the change in non-labour income on work incentives is called an income effect (Borjas 2013: 36). However, if people would have to decide whether leisure resembles more a normal commodity than an inferior commodity, most of them would probably regard leisure as a normal good since it seems reasonable to assume that better off people would want more leisure. Also most available empirical evidence points out that the existence of inferior goods is rare, and that leisure is rarely inferior (Benjamin 2007: 44). Therefore, it is reasonable to assume and to treat leisure as a normal good.

In any case, people who decide to work less are the ones who are willing to exchange the reduction in wage for the amount of a basic income since that person's total income would still be higher once a basic income is added, unless the reduction in the wage is higher than the amount of a basic income (Gamel, Balsan and Vero 2006: 481). Knowing the opinion of the poorest individuals regarding the appreciation of their working time would significantly help in determining the effect of a basic income on the labour supply. Nonetheless, it is safe to assume that individuals with lowest wages would have stronger negative substitution effects for leisure time (Ibid.). People with many hours of leisure could prioritize increasing their purchasing power by focusing on increasing their total income. It could be said that every individual has their own threshold level beyond which he would prefer to increase the amount of leisure time rather than the wage.

In this respect, concluding that labour supply would decrease when individuals perceive leisure time as a normal good does not have to be necessarily true. Societal values work not only in terms of income it provides but also in terms of social satisfaction it generates. Furthermore, there is a difference in relative increase of purchasing power since it is larger for the poorest individuals than for people in the higher income categories. Consequently, people with lower wages would enjoy positive

income effects while people with high wages would most likely experience negative income effects (Gamel, Balsan and Vero 2006: 484). All these presuppositions are behavioural hypotheses based on microeconomic analyses.

As demonstrated, work incentives largely depend on the value individuals assign to leisure time which is the consequence of the importance they assign to working life. The more an individual finds his work tiring and burdensome, the more likely he would be inclined to perceive leisure as a normal good. On the contrary, if an individual finds his job very likeable and gratifying, leisure time would be perceived as an inferior good. Moreover, other people's opinion about a person's job may influence his or her own perception of a job (Ibid.). Therefore, not only economic factors but also social factors such as lifestyles, beliefs and attitudes towards working have an influence on the individual's propensity to work. It makes the analysis of the impact of a basic income much more complex as it emphasizes the necessity to incorporate the opinion of social scientists alongside economists.

3.1.3 Impact of Intrinsic Motivation on Work Effort

Other than focusing on the monetary value of work, there is a relatively large intrinsic value when it comes to working, which can be considered as another determinant that influences people's work incentives. Every individual has some basic values which can be associated with work. For instance, people work in order to attain prestige, power, security, independence, money, etc. (Ros, Schwartz and Surkiss 1999: 50). They can also find working as a rewarding experience and means to integrate with society. A study had been done to determine the meaning that people attribute to work in further relation to the achievement of their goals. It was found that people do associate their work with a wide range of basic values involving the motivational significance of work.

Furthermore, according to the study, differences in the meaning of work for individuals can be independent of differences in the importance of work. Those differences are a reflection of the differences in the experiences that people had during their work (Ibid. 69). Henceforth, just how much people consider their work to be important largely depends on the basic values they formed throughout their lives. Since these values influence their attitude and behaviour towards work, it would be recommendable to perform further research on these values and their impact on work incentives.

Nonetheless, it is questionable to what degree the introduction of a basic income scheme would impact people's basic values. It is quite likely that its influence would be small because individuals' basic values are deeply embodied in person's personality and they are not easy to change. Therefore, basic income's effect on work incentives would be small since the values related to self-transcendence and self-enhancement would hardly change once a basic income is implemented.

However, what would be the impact of a basic income on work effort considering the intrinsic values of working? The impact on the work effort would be closely associated with the level of intrinsic motivation a person has for a job. An argument used by cognitive psychologists such as Deci and Ryan, that people can be divided into those with no intrinsic motivation and those with high intrinsic motivation (Deci 1975). A person with no intrinsic motivation performs an activity because of the enjoyment it brings and not because of the external compensation she would receive for performing the activity (Deci 1975). Of course, economists would argue that if a person has high intrinsic motivation and in addition she receives a compensation, a person would put even higher effort into the activity than how she would put without the compensation (Pech 2010: 8). Nonetheless, this

statement was also put into the question by Koestner and Ryan who argue that extrinsic monetary rewards can undermine a person's intrinsic motivation to perform a task (Deci, Koestner and Ryan 2001).

The argument referring to the motivation crowding-out effect is supported by a number of experiments. For example Gneezy and Rustichini conducted an experiment in which they introduced a fine in day care centers for parents who arrived late to pick up their children. As a result more parents came late because instead of thinking about their responsibilities as a parent they thought about the size of the fine. And since the fine was small, it was cheap for parents to arrive late. The situation can be describes as "Pay enough or don't pay at all" (Gneezy and Rustichini 2000). Hence, if the fine was large enough parents would come to pick up their children on time. But that would be because of the cost of coming late rather than because of the intrinsic motivation not to arrive late.

Could the concept of a basic income be related to the situation when the intrinsic motivation of the activity changes due to the external compensation for the activity? It has to be stressed that a basic income is not a compensation for a work. A basic income does not stand for the increase in wage but for the increase in non-labour income instead. Nonetheless, we cannot exclude the possibility that basic income grants could affect the intrinsic motivation of the recipients, if recipients' motivation to work is financially-oriented. Once the levels of intrinsic motivation are altered, the productivity of individuals would change accordingly.

Pech's research on the relationship between the change in wage and the change in working effort (Pech 2010), shows that individuals with high intrinsic motivation behave differently than individuals with no or with low intrinsic motivation. The increase in wage would increase the work effort for people with no intrinsic motivation whereas people with high intrinsic motivation would increase their work effort only when the increase in wage is very large. Although their intrinsic motivation may diminish because of this large increase in compensation (Pech 2010: 11). These changes in wages could be caused by the implementation of basic income guarantee, what is further explained in the following Section 3.2.2. Therefore, a basic income has the potential to indirectly impact the productivity at work with regard to the intrinsic motivation felt for a task through the changes in wages.

Section 3.1 described the effect of introducing a basic income on individuals' behaviour. The complexity of analysing individuals' behaviour was emphasized by highlighting the importance of several highly influential factors. It was shown that even tough welfare programs in general are expected to have a negative effect on work incentives, the impact could vary depending on people's perception of leisure, their intrinsic motivation for a job, the meaning of work, etc. If people perceive leisure as a normal good they would work less under a basic income, but if they perceive leisure as an inferior good they would work more. Regarding the intrinsic motivation, it was shown that monetary compensation impacts the work effort depending on the level of the intrinsic motivation felt for a job.

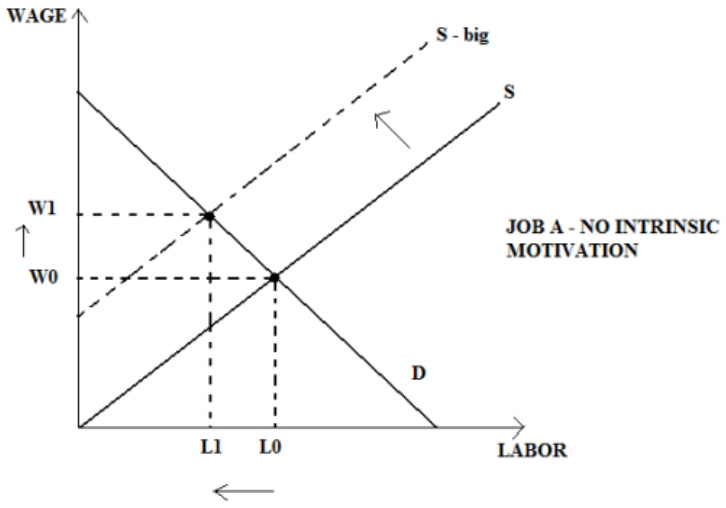
3.2 THE EFFECT OF BASIC INCOME ON THE MARKET

Section 3.2 starts with the examination of the impact of intrinsic motivation on labour supply. It also considers the potential effect of the environment with strong work ethics as well as the effect of social recognition which is associated with particular jobs. Afterwards, the effect of a basic income scheme on wages and prices is investigated given the fact that basic income grants increase people's purchasing power.

3.2.1 The Impact of Basic Income on Labour Supply

Pech analysed the effect of the introduction of a basic income on jobs, in which workers have no intrinsic motivation to perform ("bad job"), and in which workers have a high intrinsic motivation to perform ("good job"). He made the analyses of individuals' behaviour under a basic income scheme assuming that only adults are recipients of the basic income grant, a basic income is financed through income taxation and it is given without any conditions related to working (Pech 2010: 2,9).

It can be safely assumed that workers prefer job B with high intrinsic motivation than job A. Nevertheless, many people would work at job A because of the income insecurity. Since the introduction of basic income guarantee would provide certain level of income security, after its implementation the labour supply would be reduced for jobs, in which people do not feel any intrinsic motivation to perform a task. On the other hand, the labour supply would increase for jobs, for which people feel high intrinsic motivation to work (Pech 2010: 9). This indicates that because of the basic income guarantee people would work at jobs which they like more rather than which are better paid. Consequently, the shifts in the labour supply curve would impact the wages. The equilibrium wage for jobs with no intrinsic motivation will be increased due to the reduced supply (Figure 5a), while the equilibrium wage for jobs with high intrinsic motivation will be reduced due to the increase in the labour supply (Figure 5b) (Ibid. 11).



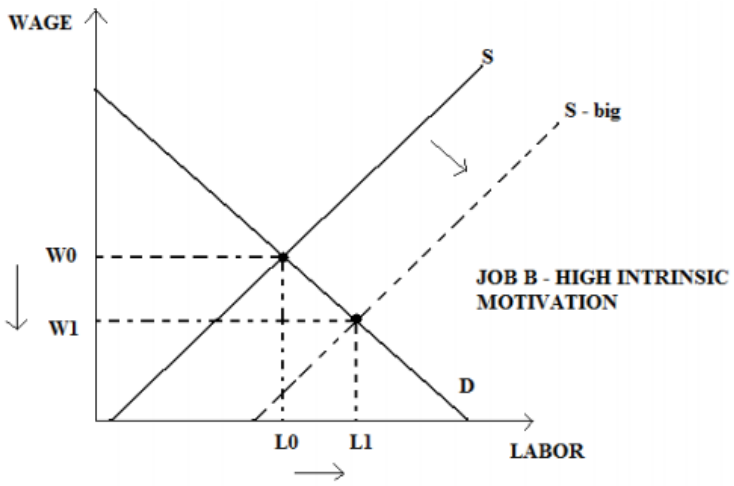


Figure 5: The decrease in the labour supply for job A (no intrinsic motivation) and the increase in the labour supply for job B (high intrinsic motivation)

On this basis, a basic income scheme would encourage people to work at the jobs that people have a preference for rather than working at the jobs that have higher salary. Consequently, a basic income would increase the wage for unpopular jobs and decrease the wage for popular jobs.

However, in an environment with strong work ethics the effect of a basic income on the supply of labour could be much smaller. This would consequently increase the level of a universal basic income at which the scheme can be sustained, because the income and substitution effects will be less relevant in such environment (Van Parijs 2013: 177). Nonetheless, one should question the reason behind the strong work ethics whether they are caused by strict social sanctions or other means that could annul the positive effects of the basic income scheme.

Besides intrinsic motivation, factors like the relative level of income and social recognition that is affiliated with it rather than the absolute level of income might also matter a lot to workers. Therefore, workers' behaviour within upper middle and upper income range might have smaller effects on labour supply compared to the effect on people in lower income ranges (Van Parijs 2013: 177). People with higher income wages who are used to a certain social status quite likely would not change their work incentives once a basic income scheme is implemented. In order to properly investigate the workers' behaviour under the basic income scheme, analysing the differences in absolute and relative income considerations and their social impact could be very helpful.

In this instance, the effects of a basic income on labour supply are determined by many factors what makes the analyses more difficult. Thus, simple models are used for portraying the various impacts of a basic income in order to add some clarity to the complexity of the situation.

3.2.2 The effect on Wages and Prices

Other than affecting labour supply, the introduction of a basic income has the potential to significantly affect wages as well as prices. The effect on wages due to the shift in labour supply could be already partially seen in Section 3.2.1.

The fact to consider is that a substantially high universal basic income generates 'free wage labour'. When people receive a basic income, their decision to work becomes much more voluntary. Workers enjoy 'real freedom' which spares them of the pressure to be employed if they do not wish

so. Nonetheless, what could be the consequences of increasing workers' safeness to reject employment? One possible scenario refers to the occurrence of the increase in wages for unpleasant work. As a result wages would be more structured in accordance to the disutility of various types of work rather than the available supply of labour power for different jobs (Wright 2000: 150).

The theory which is applicable to this scenario is the theory of compensating wage differentials, according to which disagreeable jobs would command higher wages, other things being equal, because the advantages and the disadvantages of the different jobs must be either perfectly equal or move toward equality. A wage rate for every job contains several implicit prices of job characteristics such as pace of work, probability of injury and level of unpleasantness. These implicit prices at which job characteristics are bought and sold are called compensating wage differentials (Smith 1979: 339). The implementation of a basic income could facilitate employers' incentives to better compensate unfavourable job characteristics due to the increase in workers' safeness to refuse employment. The advantage of the increase in wages for unpleasant work could be the speed-up of technological advancements. It would give a rise to a technology that could act as a substitute for humans when it comes to unpleasant and unpopular work.

In addition to the effect on wages, basic income grants increase people's purchasing power and give them the freedom to choose more leisure as shown in Section 3.1.2. Therefore, if businesses increase prices in order to compensate for the potential increase in labour costs, consumers could look for more affordable competitors or they can become competitors themselves (Santens 2015). Furthermore, there is a fear that a basic income would inherently cause inflation. Nonetheless, the idea behind a basic income is not to print more money for a basic income grant but to redistribute money that is spent on other welfare programs. Moreover, it is unlikely that prices of basic goods would increase, since the demand for basic goods is inelastic. Instead it is more probable that prices for luxurious goods and services would increase as more people would be able to afford them.

3.2.3 Discussion

There are some controversies in the debates about a basic income when it comes to the effects of basic income grants on labour supply and work incentives. The supporters of a basic income argue that a basic income would reduce the levels of unemployment. Once a basic income is implemented, some people would decide to reduce their working time what would spur more opportunities for unemployed people to find a job. There is a possibility that a basic income would abolish the poverty trap and increase the attractiveness of jobs of which the only flaw is that they are underpaid. In which case, logically, more people who are currently unemployed would find it easier to enter the labour market (Marx and Peeters 2008: 2).

On this basis, it could be further argued that a basic income has the potential to stimulate economic growth by facilitating entrepreneurial activity. On the contrary, the opponents of a basic income disagree with the idea that a basic income would make more jobs available. They predict that a basic income would result in huge shortages on the labour market and that it would contribute to the growth of unattractive jobs (Ibid).

When it comes to a basic income, it is not surprising that there are many disagreements and unanswered questions due to the lack of empirical data. In any case, the issue regarding the effect of a basic income on labour supply remains to be one of the most controversial topics that are discussed in on-going debates on a basic income scheme.

Section 3.2 demonstrated that the implementation of a basic income can lead to the increase in the labour supply for jobs with high intrinsic motivation and the decrease in the labour supply for jobs with no intrinsic motivation. The changes in labour supply would further affect the wages. It is likely that the wages for unpleasant work and work with no intrinsic motivation would increase in order to compensate for their drawbacks since employees' safeness to reject the employment would be enlarged under a basic income scheme. Therefore, there is a possibility that the businesses would increase the prices of goods and services as response to the increase in production costs.

3.3 THE EFFECT OF BASIC INCOME ON THE ECONOMY

Section 3.3 analyses the effect of implementing a basic income from more macro-oriented perspective since it looks at its impact on the economy. It considers whether the implementation of a basic income program is economically sustainable what largely depends on the way basic income grants are funded and on the level of a basic income.

3.3.1 Economic Sustainability

The problematic part about the basic income is that there isn't a country which implemented a basic income scheme as utopians envisioned it. Economists lack concrete and specific data about what would be the exact consequences of the implementation of a basic income on a large scale. However, experiments on the Negative Income Tax show striking similarities with a basic income scheme that can be helpful for the assessment of the effects of a basic income as described in Section 3.4.5 (Marx and Peeters 2008: 3). Nonetheless, researchers can only draw conclusions based on simple theoretical models, when it comes to macro-economic impacts of the different components of a basic income.

To be more precise, economic sustainability of the basic income scheme and its features can be investigated based on economic models that aim to capture income effects and substitution effects of the basic income scheme on the supply of labour. According to Van Parijs, the entire or partial substitution of the benefits of a basic income, would increase labour supply due to the reduction of the poverty trap (Van Parijs 2013: 176). People would be able to keep their basic income while working what could enable people who are worst off and who would be willing to work for low earnings to accept a job without concerning themselves with the potential loss of the benefits. However, receiving a basic income might not make much of a difference for people with very small earning power. Henceforth, educating people to improve and to gain new skills would be a crucial step for escaping the poverty trap. Nonetheless, the benefit of the potential reduction in poverty and the increase in labour supply of people with low incomes can be cancelled out by other elements.

First element is based on the assumption that the marginal tax rate on income above a certain threshold would increase what would have a negative substitution effect for people with higher earnings. In this case, a basic income scheme would have a negative effect not only on the supply of labour of people with higher earnings but also on their incentives to work hard and to keep educating and acquiring more skills (Ibid. 177). It can cause lack of workers with the ambition to be promoted and with a certain level of skills required for the position. A second element refers to the income effect. If people's priority is to achieve and to maintain a certain level of income, once they receive a basic income their incentive to increase their level of income would be reduced, if their income is within a range in which the increase in income tax falls short (Ibid.).

Thereafter, people's behaviour largely influences the economic sustainability of a basic income scheme. For example, there is the issue of immigration and emigration. Whether a basic income is implemented at the municipality level or at the country level, it does not avoid the issue of the opportunistic exit of net contributors to the basic income and the opportunistic entry of net beneficiaries from a basic income (Van Parijs 2013: 178). This problem also would not be caused simply by income differentials. There are other social factors that would affect people's decision to stay or to immigrate, or to emigrate. It is the economists' and sociologists' job to research the appropriate approaches to a basic income that would address people's concerns about economic unsustainability.

However, if many net contributors to the basic income would decide to leave the country, it would cause a major capital flight and disinvestment. Such a scenario could only happen if capital would be heavily taxed in order to fund a basic income and if there would be increases in cost of production due to higher wages (Wright 2000: 151). Therefore, it is advisable to carefully consider all the potential ways of funding a basic income. In order to minimize the negative impact on citizens' behaviour, other sources of government revenue than income tax would be more preferable.

3.3.2 Affordability

Next, the capacity to afford a basic income directly relates to the concept of economic sustainability. According to Pereira, a basic income that is high enough to cover basic needs is definitely affordable. Yet, most critics argue that a universal basic income is too expensive and the increased taxation required to support a basic income is not politically feasible (Pereira 2015: 5). Arguments based on the cost of a basic income are the most common arguments applied in the debates by opponents of a basic income guarantee.

The implementation of the program of a universal basic income could lead to cost savings by abolishing other forms of income security programs. The introduction of a universal basic income would replace many programs related to income security such as old age supplements, child benefits, welfare payments to individuals, tax credits, pension benefits, etc. Further savings can be obtained from the reduction of day care costs. Paying for day care is expensive but with the introduction of a basic income these costs can be reduced alongside the costs associated with social housing (Ibid. 9). A universal basic income appreciates care-giving labour within households as it recognizes the importance and social value of this work. Since most of the housework is performed by women, it could be stated that a basic income can act as a feminism supporting mechanism that empowers women. However, there is also a chance that a basic income system would give an incentive to households to have more children in order to increase their total income by receiving additional basic income guarantee for each child a family has. Such situation could prevent women from entering a workplace because they would have to take care of their children first.

Regarding taxation under a basic income, critics often refer to the need to raise tax on people's personal labour incomes in order to cover high costs of a universal basic income. Cost objectors such as Kesselman, Young and Mulvale exclusively rely on increased taxation as a tool to fund a basic income scheme (Pereira 2015: 13). However, taxing personal incomes at higher rates is not the only available way for addressing the costs of a universal basic income. Increased taxation is politically very unpopular, therefore it would be more appropriate to consider other ways of acquiring substantial government revenues for financing the program such as through savings from other programs,

revenues from country's natural resources or at least using the taxation that would exempt the lowest incomes.

One way to implement the idea of a basic income would be to combine the basic income scheme with a negative income tax scheme. The combination of a basic income with proportional income tax could have the same distribution of available income as the combination of negative and positive income tax (Gamel, Balsan and Vero 2006: 479). However, more experiments are needed to investigate the similarities and the differences between a basic income and negative income tax in order to gain deeper understanding of what would be the most effective and efficient way of combining these two schemes.

3.3.3 Savings from Welfare Programs

Assessing the capacity to fund a basic income grant largely depends on the level of the basic income. However, figuring out the appropriate amount of a basic income is not an easy task. Therefore, it might be more reasonable to determine how high a basic income can be granted from using the funds that are being spent on the current welfare programs which can be eliminated once a basic income scheme is implemented. Nevertheless, objections can be made that the current spending on antipoverty programs is not enough to relieve all low-income households from poverty by providing them with substantially high basic income. Therefore, in some cases implementing this approach to fund a universal basic income would not work.

However, there is a study which indicates that a basic income scheme can be funded via the savings that can be gained by the introduction of a universal basic income in the form of negative income tax (Pereira 2015: 14). Since the introduction of a basic income would substitute several welfare programs, it saves money which would otherwise be spent on those programs. For instance, in the case of Canada $342 billion in total savings are available from the implementation of a basic income. Then if Canada effectively addresses the issue of tax leakage, an additional $80 billion can be added to the government's budget. This amount sufficiently covers the payment for the program in Canada (Ibid. 15). Under these circumstances the cost objection to the implementation of a basic income could be dismissed. However, the abolishment of some welfare programs and the implementation of basic income grants would affect people's behaviour, in which case the behavioural changes could further impact government revenues. Therefore, it is ambiguous for how long this type of financing would be feasible.

Moreover, if the issue of bureaucracy which increases the administrative costs is also addressed effectively, it would generate further savings for the government. The cost could be simply reduced by the substitution of multiple welfare programs by a single universal basic income program (Ibid. 15). The implementation of a basic income could help many people to avoid unnecessary bureaucratic procedures which take a lot of time and can also be very stressful at times. Furthermore, bureaucracy can facilitate the raise of corruption and lower the levels of accountability and transparency. The reduction in the cost of bureaucracy tend to be often overlooked when assessing the financial feasibility of a basic income scheme. Therefore, the alternative to finance a universal basic income without raising income taxes through savings gained from program replacements and redundancy together with savings from bureaucracy could have some potential for successful implementation of a basic income.

Another thing to consider when it comes to funding is that the implementation of a universal basic income would not only replace the means-tested welfare programs for poor people but also policies that enhance the standards of living of middle and upper class people such as mortgage interest deduction, charitable deductions and tax benefits for retirement (Dolan 2014). Means-tested welfare programs provide benefits are which are available only to individuals whose income and capital are below a certain level (Dictionary). The elimination of most means-tested welfare programs, middle class tax expenditures and personal exemption would increase the budget for the implementation of a basic income scheme.

3.3.4 Discussion Part

As it was already mentioned, critics of a basic income often argue that the scheme is too costly and inefficient to be a replacement for all welfare programs. They believe that a basic income can be feasible only if it is implemented on a small scale and complemented by other antipoverty measures. In order to better understand the specifics of the argumentation between critics and supporters of a basic income, it might be interesting to look at the reactions of supporters of a basic income on an editorial article published in the Economist.

According to the article, using James Tobin's formula from 1970 for calculating the costs of welfare schemes shows how extraordinary expensive would be the provision of a basic income to all citizens (Economist 2015). For example, if the government needs 25% of national income in order to fund public services, then funding a basic income that is worth 20% of average income would require average taxes to be raised by 20%. Moreover, to eliminate relative poverty which refers to the income below 60% of the median would require increasing people's tax rates by 60% to a new 85% standard. Thus, some critics believe that the introduction of a basic income would be self-destructive since it would enforce the distortions that it hopes to eliminate (Economist 2015).

In this respect, it is argued that a basic income would enable many people to live comfortable at the expense of hard-working tax payers. However, supporters could argue that the article does not consider unequal income distribution which has been on the rise for several decades. Hence, using the term 'average income' is not very accurate anymore (Santens 2015). The article also did not consider the savings gained from the eradication of most welfare programs, which would have the potential to reduce the raise in income tax.

Henceforth, a proposed way as how to make a basic income affordable is to primarily look at all the savings that the government can gather from the elimination of welfare programs that a basic income would be able to effectively substitute. Although the number of programs that can be eliminated would largely depend on the level of basic income grants. In the case, when a basic income is not high enough to meet the needs of older and ill people, welfare programs targeting these groups of people would have to remain. Therefore, the topic surrounding the affordability of a basic income is much too complex for it to be easily dismissed as too expensive.

Moreover, since the introduction of a basic income scheme would supposedly give a wider range of opportunities to people to pursue their hobbies and activities that were unpaid or underpaid, to reduce their working time or to take a career break (Van Parijs 2013: 178), its impact on the country's economy might not be necessarily negative even if there is a reduction in work incentives. There is a possibility that the introduction of basic income grants could favourably affect the country's productivity by reducing the workers' accident rates and improving their focus during paid work.

To conclude section 3.3, the impact of a universal basic income on the economy was analysed. It was shown that the effect of a basic income grant on work incentives in practice would very much depend on the way it is financed. Raising marginal tax rates on people's incomes would hardly have a positive impact on an individual's behaviour. The level of a basic income grant would also largely determine the effect on work incentives. It is recommended to use a level of a basic income which is large enough to cover for the basic needs but too small for providing comfortable life equivalent to middle-class households. This type of a basic income would give opportunity to people from lower classes to improve their lives through their own effort. However, whether such basic income can be sustainably financed largely depends on individuals' behaviour.

Although several findings collected from using theoretical models among others were presented throughout section 3.1 to 3.3, they are not sufficiently substantial when it comes to the formulation of any conclusive remarks about a basic income. They need to be further supported by empirical evidence which is presented in following section 3.4.

3.4 EXPERIMENTS AND EXAMPLES

Several experiments were conducted in order to investigate the effects of the implementation of a basic income scheme. Thanks to the results obtained from these experiments it is easier to determine the impact of basic income grants on individuals' behaviour and the economy.

3.4.1 Basic Income Survey

A survey was conducted which tested the influence of variables like gender, family situation, present job, income, perception of own financial situation, level of education, etc. on behaviour. The aim of the survey was to see 'how would employed individuals react if they were to obtain a monthly basic income of approximately 300 Euros (Gamel, Balsan and Vero 2006: 487). The survey was targeted at subset of population of about 450 people whose age was under 25 and educational level was equal or lower than the bachelor (Ibid. 486).

Looking at the responses, 55% of the respondents opted for 'no change' which implies that a basic income scheme would not necessarily lead to work disincentives. Next, about 30% of respondents would decide to consume the additional leisure time provided by a basic income in order to increase their human capital what could have a positive effect on the economy in the long term. However, the remaining two thirds of the sample do not consider leisure time as strictly a normal good to be consumed (Ibid. 488). The reasons behind these preferences can be various. So, further investigation would be recommended. For example, it was found that the more stable the job is, the greater is the likelihood of 'no change' occurring.

Also education level seems to have a large influence on selecting the 'no change' option. According to the results, part-time employees would have higher incentives to withdraw from the labour market compared to full-time employees. It seems that individuals working full time and with no entitlement to social benefits would perceive leisure time as an inferior good (Ibid. 489). Next, it was found that investment behaviour is more associated with people who are in unstable situations. Conversely, people whose life is stable (employed full time, living with a partner and children) have a higher probability to increase their leisure time by reducing their working time (Ibid. 490).

These findings are not surprising since it is quite expected that the individuals whose future seem more secure would opt for the consumption of leisure time. Even though the majority of people would not change their behaviour towards employment, the findings indicate that social integration, especially for young people, is more important than receiving a wage. Of course, this fact largely depends on the level of a basic income. The higher is the amount of a basic income, the more significant behavioural change would occur (Ibid. 491).

It has to be reiterated, that all these assumptions made about the behavioural responses of individuals under a basic income scheme are based on the responses of people as what would they do in such and such situation given their understanding of that particular situation. Despite the options that respondents willingly chose, there is still a possibility that in real situation they would behave differently (Ibid. 487). Therefore, the results of the survey cannot be used for clear depiction of the behavioural changes caused by the implementation of a basic income scheme, which would be observed in the real life and real world. Although all the conclusions formulated on the basis of this research are very limited due to its virtual context, they still provide the researchers with valid information on individuals' behaviour.

3.4.2 Pilot Project in Namibia

The Namibian village of Otjivero-Omitara became a subject of a pilot program created and supported by church groups, non-governmental organizations and labour unions. The aim of the program was to alleviate the poverty level in the village by providing every member of the village with a monthly basic income grant regardless of their income and work status (Chung 2010). Henceforth, the results of this particular experiment with a basic income provide basis for the conclusions about the effects of a basic income when it comes to poverty alleviation. The program helps to determine a basic income's potential to improve the standards of living in practice and not only in theory. Nonetheless, the shortcomings of the program conducted in Namibia are that the program was financed by money from external sources and it did not have any control group. Therefore, it cannot adequately refer to the sustainability of a basic income program.

The chosen Namibian village can be considered to be a typical representant of Namibian villages in general with its levels of poverty, AIDS, alcoholism and crime. After one year of implementing the pilot program significant results from the program were obtained. The percentage of malnourished children in the village dropped from 42% to 10%. As a consequence of improved children's health the attendance as well as the attention paid during classes have increased. Furthermore, basic income grants also decreased the crime rates by 36.5% since the introduction of the program. Poverty rates also declined from 86% to 68% alongside with unemployment that dropped from 60% to 45%. Lastly, the researchers observed that the average earned income excluding the basic income grant increased by 29% (Ibid.)

The program executed in Namibia showed that the implementation of a basic income can lead to positive results regarding poverty and crime alleviation. Moreover, the work incentives were also positively affected as shown by the reduction in unemployment. Indeed, the Namibian case supports the theoretical argument that states the positive impacts of a freedom-enhancing characteristic of a basic income.

3.4.3 Alaska Permanent Fund Dividend

The Alaska Permanent Fund Dividend is an interesting case to consider because the dividends which are paid annually are very similar to the scenario of receiving basic income grants. Even though the dividend is relatively small as it can vary for example between 300$ to 3300$ over the years, it significantly increases purchasing power and it diversifies income sources for the economy (Goldsmith 2010: 7). Direct and indirect macroeconomic effects of the increase in purchasing power led to 10 thousand additional jobs, 15 to 20 thousand additional residents who came to Alaska because of increase in jobs, and $1.5 billion in additional personal income (Goldsmith 2010: 11). Henceforth, one of the greatest advantages of this dividend for poor households is that it guarantees that their cash income would not fall below the level of a dividend, although it is not big enough to act as a basic income.

However, at first the Permanent Fund Dividend was not fully supported in the legislature. Some lawmakers believed that the money allocated as dividends could be spent more effectively on public programs and capital projects to improve the infrastructure of roads, harbours, etc. At that time the investments were considered to be very important precondition for economic development (Goldsmith 2010: 6). The lawmakers carefully weighed the opportunity cost of implementing the proposal with Permanent Fund Dividend. Yet, at the end they decided that is it better if it is Alaskans' decision rather than government's decision as to how the part of the revenues gained from the oil would be spent most beneficially. The implementation of a basic income would have similar opportunity cost as the Permanent Fund Dividend in Alaska, which some lawmakers could consider as very high. Nonetheless, if the main objective of the government is to provide benefits for all citizens, would it not be better if they decide for themselves what they need the most?

In the year 1984 a study was conducted to investigate the effect of the dividend on labour supply. According to the results, only 1% of respondents admitted that they worked less because of the permanent fund dividend (Ibid. 13). However, it has to be kept in mind that the study studied the effect of the dividend 8 years after its implementation. Moreover, one of the factors that influenced the result would be the fact that many Alaskans living in rural areas would like to work more but they do not have the opportunity to do so because they are constrained by their surroundings.

Regarding the creation of incentives to migrate to Alaska, it increases labour supply and unemployment rate what might eventually negatively affect the wage rate. If such scenario occurs, then the benefit of obtaining dividends would go to the employers who hire people at lower wages (Ibid. 15). This particular effect was unforeseen during the creation of the permanent fund dividend. It raises the difficult-to-answer question as to what would happen with immigration after the implementation of a basic income scheme.

In contrast with the general opinion that the introduction of Alaska's model is possible only in a resource-rich state, social scientists Widerquist, Howard and Wayne believe that Alaska's Permanent Fund Dividend can be applied anywhere in the world. They argue that the state of Alaska uses only a small fraction of oil resources to fund permanent fund dividend. According to them, every state is in possession of some valuable common resources (Widerquist, Widerquist and Howard 2012: 8). It is further argued that Sovereign Wealth Funds which are typically found in oil-wealthy countries like Abu Dhabi, Saudi Arabia and Norway, can be also based on other resources such as copper, diamonds, phosphates, minerals, public lands, tobacco, etc. The reason why countries do not create a portfolio

which would be similar to Alaska's model could be that their natural resources already belong to private businesses and not to the government (Ibid. 86).

Therefore, it is quite likely that countries have greater ability to finance a basic income with the country's assets than how it seems at first sight. If those resources are not under private ownership, the public could benefit from the equal distribution of the revenues that can be generated by those resources. However, it is uncertain whether all countries would be able to gather sufficient amount of resources to cover funding for a basic income.

3.4.4 The Experiment with Lottery Winners

Another way to learn more about the effects of a basic income on labour supply would be by looking at the lottery game called the Belgian Win for Life (W4L). In this game winners receive a regular unconditional lifelong basic income (Marx and Peeters 2008: 4). Therefore, W4L is very suitable for generating some insights about the hypothesis related to the effects on the labour market after the implementation of a basic income. However, the differences between winning a lottery ticket and receiving a basic income should not be neglected. The example of winners receiving a regular lifelong income is valid for the case of a basic income only to a certain extent. For instance, the levels of a basic income and a winning income may vary (Ibid.). Though in order to make the comparison easier to interpret, a basic income sufficiently large to cover basic needs is used instead of a partial basic income.

The first clear difference between UBI and W4L emphasized by the researchers who worked on this experiment is that under a basic income scheme the basic income is taxed away while the grant received under W4L is simply added to the income the winner has previously earned. Furthermore, under a basic income the tax rate would be higher than the current tax rate. Another difference refers to the fact that W4L is not adjusted for inflation whereas a basic income in most of the proposals is adjusted for inflation (Ibid. 8). Taking into consideration these differences is critical for the proper interpretation as to how much the effects of W4L on the labour supply are similar to the effects of UBI.

In the case, when a single person wins a tax-free W4L income, he or she can decide to become self-employed or unemployed, or to keep his or her current employment and to reduce working time. Whatever a person chooses to do, the expectation is that under a basic income scheme the choice would be similar, if not the same (Ibid. 13). Hence, the case of W4L is valid for the investigation of the change in work incentives after the implementation of a basic income. Nonetheless, the assumptions used in the article with regards to the research on W4L were that if a couple starts a business or becomes unemployed under W4L, it is expected they would do the same under a basic income because W4L leads to lower financial incentives than a basic income. However, if a couple does not decide to do so, it is difficult to draw any conclusion related to a basic income scheme. For singles, the opposite is true. Regarding the expectations about reducing working time, it is challenging to formulate them because they largely depend on assumptions related to tax rates, inflation and labour income (Ibid. 15). Nonetheless, even when no clear expectations can be drawn, researching the case W4L winners is useful for the indication of people's preferences.

The issue concerning the research on W4L winners refers to the limitation that researchers faced when trying to obtain the data on winners since winners have the right to be anonymous and to keep the information about them confidential. Thereafter, the Belgian National Lottery acted as an intermediary for data gathering by conducting a mail survey. The questions asked were directed mainly on the behaviour of lottery winners with regards to their position within the labour market before and

after winning the lottery and the motives behind the decision (Ibid. 16). The researchers used the questionnaire as the most appropriate way of collecting the relevant information about the research-project. In 2004, the number of questionnaires of W4L winners amounted to 189. Out of the winners who received the email 53% percent participated in the survey (Ibid).

The results of the survey showed that out of 14 singles who worked at the time of winning 13 decided to continue working. It can be expected that these people would behave the same under a basic income scheme. Then, out of 41 couples who worked at the time of winning, 37 continued to work. In the remaining 4 cases one of the partners stopped working. Only one person quit a job due to the lottery winning. Then, out of 11 couples where only one partner worked at the time of winning, no one decided to stop working (Ibid. 18). Furthermore, none of the respondents became self-employed after they won the lottery. When it comes to the reduction of working time, no single person reduced the hours spent working after winning W4L. As for the couples, three couples decided to reduce their working time due to W4L. Since most people did not diminish their working time, the effect on labour supply was very small largely depending on people's financial incentives. Lastly, many respondents felt the need to emphasize that the biggest positive effect of winning W4L was the reduction of the anxiety that people feel about the future (Ibid. 20). The reduced stress caused by uncertainties regarding the future is actually one of the claims of a basic income scheme as it improves people's psychological welfare.

This research project that targets only a small subset of the population is very limited in drawing any general conclusions about a basic income. However, since the literature on a basic income lacks any substantial empirical data, this study on lottery winners provides some meaningful insights regarding the effects on the labour supply which can be related to the introduction of a basic income program. To conclude, the results of this particular research do not indicate any major consequences of receiving W4L alias UBI on labour supply since there were only minor or no changes concerning quitting work, reducing working time and becoming self-employed.

3.4.5 Negative Income Tax Experiments

Theory

Between years 1968 and 1980, the U.S. government conducted four negative income tax experiments whereas the Canadian government conducted one experiment. The results of these experiments are deemed to be very significant in their contribution to the on-going debate on a basic income (Widerquist 2005: 49). Even though the concept of a negative income tax and a basic income are not the same, they are sufficiently similar for the findings to be valid when addressing to a basic income scheme.

The five experiments that this section refers to, known as 'the income maintenance experiments', used randomized method for assigning their subjects into treatment and control groups. The U.S. and Canadian government decided to conduct these experiments during the times when the abolishment of poverty was a goal of the presidential administration. At that time some social scientists believed that the welfare reform would occur in the direction of a guaranteed income (Ibid. 51). Since social policies were gradually heading towards the concept of a basic income, it is understandable that social scientists were looking forward to see the results of these negative income tax experiments.

The experiments included households of urban and rural areas with both single and two-parent families. The households were divided into two groups where the experimental group was part of income support policy and the control group was receiving the benefits from existing welfare programs. The experiments took place in New Jersey, Iowa, North Carolina, Indiana, Colorado and Washington (Dolan 2014).

Regarding the guaranteed minimum income level, the researchers were very careful in setting up the appropriate level since too high a level would lead to strong work disincentives whereas too low level would not be significant enough to reduce poverty (Widerquist 2005: 54). Furthermore, the researchers had to take into consideration the budget constraints since one of the things they were researching was the feasibility of the welfare program. Hence, the researchers used guarantee levels between 50% and 150% of the poverty line (Ibid.). Next, it was crucial to determine the meaning of findings on working hours. They needed to agree whether those findings should be linked to the shift in labour supply curve or a tax cost of a negative income tax (Ibid. 55). The correct assessment of the values for each variable is crucial for proper interpretation of the results from the experiments.

Moreover, negative income tax policies used benefit reduction rates varying from 30 to as high as 80% while under a universal basic income benefit reduction rate equals 0% (Dolan 2014). Hence negative income tax variants that were tested in the income maintenance experiments was reducing the benefit by a fraction with each additional earned dollar. Nevertheless, since some similarities between these two programs do exist, the results of the experiments are often cited in relation to basic income proposals.

Results

There are some problems associated with the experiments, the first one refers to the lack of agreement on acceptable level of work disincentives. However, the issue of lacking criteria that would determine the level of acceptability is not that much of a problem as it was portrayed by some social scientists since the main objectives of the research concerning the work-effort response were met. Firstly, researchers found out that a very small number of people or no one at all would withdraw from the labour market as a response to a negative income tax. Secondly, the research indicates no evidence of work-effort response threatening the financial viability of a negative income tax. Lastly, regarding the existence of work-effort at all, the researchers found that the work-effort was non-negligible (Widerquist 2005: 56). Henceforth, even without agreeing on the acceptable level of work-disincentives, the experiments nevertheless provided the researchers with conclusive answers regarding the objectives of the experiments.

The second problem refers to the fallacy of composition and the representativeness of the experiments. The experiments targeted a very specific subset of the population. Experimenters did not select a random sample of data since they tested solely low-income families whose incomes were below 150% of the poverty line (Ibid. 57). As a result these people did not tend to have a secure job to which they would feel any commitment. Therefore, the incentives of these families to leave the labour force were stronger compared to the families with higher incomes and more secure jobs. Hence, all the results are diverted from the poorest segment of the labour force. Moreover, the experiments only measured the short-term response of the sampled people to a change in policy what could consequently overestimate or underestimate the effect of the policy on work incentives (Ibid.). Hence,

the fact that the recipients were well aware that the policy change is only temporary could affect their behaviour during the experiment by lowering the probability of dropping out of the labour force.

The third problem concerns the inability of the experiments to measure the demand response on the market. In order for researchers to form conclusive remarks about the market effect, the elasticities of labour demand and labour supply would have to be known (Ibid.58). Therefore, researchers decided to estimate the range of possible outcomes rather than the elasticities (Ibid. 59). All these three problems limit the research in one way or another. However, these limitations helped to give a scope of validity to the research.

In this respect, what can be learnt from these experiments are the effects on work incentives of variants of a negative income tax program. The data from the experiments showed the reduction in average work efforts in almost all experimental groups (Dolan 2014). These outcomes are not very surprising when taking into account that the increase of the minimum income guarantee was made alongside with the benefit reduction rate what increases the likelihood of cutting back on the work due to the income effect. Moreover, some experimental groups received a minimum income guarantee as high as 135% of the poverty level while other experimental groups received only about 50% of the poverty level. Regarding the benefit reduction rate, in some cases it was higher than the benefit reduction rate faced by the control groups. Nonetheless, according to the results both types of single and family households that faced during the experimental period 75% benefit reduction rate displayed higher average labour reduction as compared to households that faced 50% benefit reduction rate (Ibid.).

To be more specific, according to the results of the experiments the reduction of wives' work-effort was by 0-27% while single mothers diminished the work-effort by 15-30% (Widerquist 2005: 61). This reduction in the work effort noted during the experiments is not necessarily caused by the reduction of working hours but by keeping the status of being unemployed. Also the accuracy of the results is diminished by the scenario in which employers replace recipients of negative income tax with workers who are not part of the negative income tax policy. Nonetheless, according to Bishop, who took part in analysing the data collected from the experiments, negative income tax would generate a demand response which would increase wages and, therefore, decrease the efficiency loss and the tax cost of the program (Ibid. 63). These findings are based on a general equilibrium model that is not comparable with the models of other scientists. The findings provided by the experiments were interpreted by relatively many scientists quite differently what demonstrates the complexity and subtlety of the experiments.

Next, it was confirmed that the higher was guaranteed minimum income, the greater was reduction in work hours. As for the difference in behaviour between family and single-parent households, family households exhibited greater work disincentives than single-parent households. This is to be expected since single-parent families in control groups tend to be part of welfare programs with high benefit reduction rates (Dolan 2014). However, all these findings are not unquestionably conclusive about the behaviour of the households under negative income tax experiments. As Alicia Munnell points out in her overview of the experiments, numerous methodological flaws can be found in income maintenance experiments concerning design, theoretical models, administration and analyses (Munnell and Federal Reserve Bank of 1987).

At last, the experiment did contradict the two biggest arguments used by people who oppose a basic income. No evidence was found regarding the withdrawal of the population from the labour

force and regarding the increase of the cost of the program by the supply response that would make the program unaffordable. Next, the experiments conclude that the full labour response in terms of working hours would be within the range of 0-5% or 0-7% depending on the elasticity of demand for labour. Then the size of the reduced work hours was very small as it possibly benefited from the increase in wages, lowering the level of poverty and inequality (Widerquist 2005: 68). These results imply that providing the poorest segment of the population with a guaranteed income level is not only financially feasible but it also heads into the direction of the gradual abolishment of poverty and inequality. To summarize, a statistically significant work disincentive effect was found. However, this does not necessarily mean that the effect is substantively significant. Next, primary earners within the family reduced their work effort by 5-7% while other earners reduced the work effort by 27% (Ibid. 69). The reduced effort by secondary earners can be considered to be relatively large. The discovery of this evidence was interpreted in many different ways where some authors tend to overrate its implications.

The work disincentive that was found during the experiments made the cost of the program higher than how it would have been if no work disincentive took place (Ibid.). Due to this result some politicians stopped supporting the concept of a basic income guarantee. However, finding evidence of work disincentive does not automatically mean that a negative income tax program or a basic income program are unacceptable. The explanation of the evidence depends very much on what a person believes has higher importance or bigger consequences. Therefore, the results hold different meaning to different people. Nonetheless, the results indicate that a basic income scheme could be financially feasible but it would cause some side effects which according to different people might be either undesirable or acceptable.

Discussion

The experiments were used by critics of a universal basic income as evidence for the shortcomings of a basic income program. Since critics of a universal basic income find it difficult to believe that the government could provide every individual with an income without causing a reduction in work effort, they often refer to these randomized experiments. They use these experiments because, indeed, it was found that the programs reduced the number of working hours compared to the existing welfare system (Manzi 2014). Therefore, opponents of a basic income rely on the results of these experiments which support their opposition to an unconditional basic income. Nonetheless, it needs to be kept in mind that different types of experiments would give different results and their interpretation by social scientists can also differ based on the interpreter.

For instance, according to the critic Jim Manzi, who formulated his objection based on the negative income tax experiments, ‘the prospect of a lifetime income for doing nothing might discourage people from slapping the top of the alarm clock every weekday morning at 6 a.m. and going to work’ (Manzi 2011). Furthermore, he argues that the only way to avoid the reduction in labour supply is through work requirements. It needs to be emphasized that his arguments stand on the results from the negative income tax experiments and as such they do not have to necessarily represent the true outcome that a basic income program would have.

However, even among the supporters of a basic income there are the ones who agree that a basic income would lead to work disincentives but they do not see it as necessarily a bad thing. For instance, C.A. L’Hirondelle and J.S. Larochelle wrote ten arguments in favour of their version of a basic

income while anticipating the reduction in work effort. They believe that a basic income would prevent environmentally harmful and wasteful practices and say no to over-consumption (L'Hirondelle and Larochelle 2004). Nevertheless, whether the arguments are formed by conservative or progressive writers many of them are wary when it comes to the threatening potential of the reduction in work effort.

Furthermore, the validity of the results is at least slightly doubtful. More precisely, Munnell questions the reporting by households about their employment and earnings since recipients of minimum guaranteed incomes had clear incentives to misreport these facts in order to receive larger payments during the experiments (Munnell and Federal Reserve Bank of 1987). Due to the misreporting incentive of households to underrate their earnings, some part of the detected reduction in work hours can be assigned to this flaw in design of the experiments. Consequently, critics who use these experiments as a case against a universal basic income overestimate the significance of the results. Moreover, the reduction in work hours does not automatically mean a bad thing for the economy. There is a difference between reduction in work hours and the exit from the labour force. When people reduce their work hours, it might simply refer to taking more time to search for the right university, the right job, to pay more attention to one's health, etc. In the long-run the reduction in work hours associated with these activities might have favourable impact on the country's economy.

The experiments sparked a big scholarly debate about the results of the experiments and their potential to be applied in policy-making. However, the experiments tested different varieties of a negative income tax scheme which although are similar to a basic income, they are not the same.

3.4.6 Psychological Experiment

There is a psychological experiment examining the effect of giving people the option to choose not to work on their level of productivity what casts a new light on the cause-and-effect relationship between basic income grants and work performance. People are often of the opinion that if more choices are given to individuals, they would be more motivated to do the activity they themselves selected to do. However, in many cases e.g. when students choose their own courses, the opposite occurs since the option they have in front of them is to study the course they selected to do or to give up on it and to take different course (Markman 2014). People usually do not have the choice to explicitly choose to do some activity rather than to do nothing.

The experiment was divided into several studies. In one study, the researchers gave participants the option to decide between two topics (actors or capital cities) they had to find in a word-search puzzle. They were paid according to the number of words they found in the puzzle. The second group of participants received the same two options in addition to the option to choose not to participate in the activity. The third group received the third option of search topic (ballet dancers) in order to control for the possibility that three options matter to participants more than two options. The experiment demonstrated that the first and the second group that had the choice between two and three puzzle topics spent approximately five minutes working on the puzzle. On the other hand, the second group which had the choice not to participate spent on average about seven minutes working on the puzzle they selected (Schrift and Parker 2014).

Therefore, according to this experimental study having an option to explicitly choose to do some activity rather than to do nothing increases the time people spent performing the activity. The choice of doing nothing seems to act as a powerful motivator. This might be valuable information when

trying to get people committed to a specific task. Of course, the experiment does not tell anything about the influence of the option to do nothing on the commitment in long-term basis and there probably are also other factors affecting people's motivation.

Nonetheless, even if a basic income would negatively impact work incentives, it might not necessarily be a bad thing. Surely, in many industries it is normal to work many hours per week e.g. in Canada and the US, but their business practices ignore the studies that show how extending work hours rarely generates better results. Nowadays, people work more hours compared to the past what cost them health, happiness and also productivity, yet they earn on average smaller wages. In order to boost the companies' productivity, implementing the policy of working 40 hours per week could be one of the solutions to achieve better results (Rheaume 2014). Since many people got to work even when they should not e.g. they refuse to stay at home when they are sick because they are afraid they would lose their job, worrying about people working less once a basic income is implemented is quite needless. Instead, if people choose to work less, it can increase the availability of jobs for unemployed people. Hence, unemployment could be reduced by sharing the current jobs instead of creating new job positions.

In fact, if there are some people who after the implementation of a basic income choose not to work, then naturally their income would be smaller compared to people who decided to work for additional income. Also a basic income scheme could be a solution to the problem that many countries face where it is possible for some citizens to earn more living off benefits than to working for minimum wage (Santens 2015).

Due to these psychological aspects in addition to the economic ones, it is very difficult to determine how the labour market would be impacted after the implementation of a basic income. As it depends on many variables of which scale of significance varies greatly per individual, the best approach to take might be to implement basic income projects on a small scale first. This would allow researchers to adjust the project details based on the results they obtained.

To conclude section 3.4, it presented the results of various experiments and case studies which relate to the concept of a basic income. Although some experiments were able to provide more conclusive remarks than the others, they all are of a valuable contribution to the debates on a basic income scheme.

3.5 HYPOTHESES

What hypotheses can be formed which would be supported by the findings introduced on the previous section? According to the economic theory of the *homo enomomicus* a basic income would reduce the work incentives because work is regarded as rather unpleasant but necessary for providing a certain level of livelihood while leisure is perceived as something desirable (Gilroy Bernard, Heimann and Schopf 2013: 2). Henceforth, the reduction in labour supply is expected since humans behaving rationally would refrain from working or seeking a job. For example, the unconditional basic income could cause negative labour supply reactions of women in couple households due to the estimated high leisure preference of women and the high basic income for children (Horstschräer, Clauss and Schnabel 2010: 18).

It has to be reiterated that this statement refers to the reduction in labour supply that leads to the exit from the labour market. It does not refer to the reduction in work incentives for people who work under a basic income scheme.

Hypothesis 1: Receiving a basic income will not have a major consequence on the participation in the labour market. However, if any effect is to be detected, a slight reduction in the labour force participation is expected.

According to the psychological experiment described in section 3.4.6, creating the option not to work might result in stronger commitment since it emphasizes that working is a matter of choice rather than a matter of force. Of course, the change in strength of the commitment to a task would also depend on the level of intrinsic motivation an individual associates with a task. However, receiving substantially high basic income should have a positive impact on tasks with no intrinsic motivation as well as on tasks with high intrinsic motivation.

Hypothesis 2: Since receiving a basic income gives people the choice not to work, people who do not drop out from the labour force and continue to work under a basic income scheme will spend more effort when working than people to whom a basic income was not given.

3.6 SUMMARY

Chapter 3 started with Section 3.1 which described the impact of a basic income scheme on individuals' behaviour. It was emphasized that performing the analyses of individuals' behaviour is a very complex process because the impact of a basic income on their behaviour would depend on people's perception of leisure and the intrinsic motivation they feel for a job. It was shown that if people perceive leisure as a normal good, it is likely that they would work less under a basic income scheme but if they perceive leisure as an inferior good they would probably work more.

The second part of Chapter 3 analysed the impact of a basic income on labour supply. It demonstrated that the introduction of a basic income could increase the labour supply for jobs with high intrinsic motivation and reduce the labour supply for jobs with low intrinsic motivation. Next, it was shown that the changes in labour supply would further affect the wages. The wages for jobs which experienced the reduction of labour supply would increase whereas the wages for popular jobs would decrease. Furthermore, the changes in wages could impact the work performance since the increase in wages for jobs with low intrinsic motivation would increase employee's work effort.

Section 3.3 examined the effect of a basic income on the economy. It looked at how the financing of a basic income scheme would affect people's behaviour. The increase in marginal tax rates on people's income would be most likely viewed as an unwelcoming way of financing. The best scenario would be financing the basic income scheme through the country's natural assets just like Permanent Fund Dividend is financed in Alaska's case. It was also shown that the level of a basic income could have a large influence on work incentives. It is advised to use a basic income which is large enough to cover people's basic needs but too small to provide a comfortable life at the middle-class level. However, whether it would be possible to sustainably finance this level of a basic income would again depend on individuals' behaviour.

The following Section 3.4 provided some empirical evidence. It presented the results of the experiments and case studies which have some relevancy to the concept of a basic income. It included a survey on a basic income, a pilot project in Namibia, Alaska Permanent Fund Dividend, an experiment with lottery winners, negative income tax experiments and lastly a psychological experiment on the significance of having an option not to do anything. Lastly, Section 3.5 introduced the hypotheses formed based on the findings in Chapter 3.

CHAPTER 4: METHODOLOGY

This chapter describes the methodology that was used in the empirical part of this research. It refers to the behavioural experiment conducted in order to determine the validity of hypothesis 1 and hypothesis 2. Hypothesis 1 states that receiving a basic income will not have a major consequence on the participation in the labour market. However, if any effect was to be detected, a slight reduction in the labour force participation is expected. This hypothesis was formed based on the theories described in Chapter 3, according to which a basic income would lead to the reductions in labour supply since leisure is generally perceived as a normal good.

Regarding hypothesis 2, it states that since receiving a basic income gives people the choice not to work, people who do not drop out from the labour force and continue to work under a basic income are expected to spent more effort when working than people to whom a basic income was not given. This hypothesis was formed based on the findings presented in Chapter 3. More specifically, according to the experiment performed by Schrift and Parker (Schrift and Parker 2014) described in Section 3.4.6, it was found that giving people an option to explicitly choose to do a certain activity over doing nothing increases the effort people put in performing the activity compared to the effort they put if the option to do nothing was not given to them in the first place.

This scenario could be adopted to the situation when a person receives a basic income since a substantially high basic income would give an option to people not to work. Henceforth, people who despite this option still choose to work are expected to put more effort into their work performance. In this respect, the level of intrinsic motivation which people feel for a task also influences their work performance. Therefore, questions concerning the role intrinsic motivation played during the experiment, if any, were asked in the questionnaire at the end of the experimental session.

The Methodology Chapter is divided into four main sections. Section 4.1 introduces the experiment with regard to the purpose of the experiment, the sample used for the experiment, the construction of the experiment and the task used for measuring participants' work performance. Next Section 4.2 outlines the questions used in the questionnaire for determining the role intrinsic motivation played during the experiment. Sections 4.3 and 4.4 are dedicated to the description of the methods used for data collection and data analyses. Section 4.5 gives a summary of the chapter.

4.1 THE EXPERIMENT

This section describes the characteristics of the experiment. It starts by emphasizing the purpose of the experiment followed by the description of the sample and the design of the experiment. Next, the details of the activity which was used for determining participants' work performance are specified.

4.1.1 The Aim of the Experiment

The main aim of the experiment was to demonstrate the effect of a basic income on work incentives in relation to verifying the accuracy of Hypothesis 2. More specifically, the change in work performance with regard to work effort put in performing the activity was examined. Hence, the

experiment was designed in a way which allowed us to observe whether basic income grants would increase or decrease work incentives.

In contrast with the experiment described in Section 3.4.6, our experiment was planned in a manner that gave subjects in the treatment group not only the choice not to do anything but also monetary compensation regardless of whether they would choose to perform or not. The combination of both of these aspects enabled us to investigate the impact of having secured monetary compensation on the work performance when working is considered as a preferred option over not working.

Furthermore, the experiment also aimed to investigate the impact of basic income grants on labour supply by observing the changes in the number of students who decided to participate in the experiment.

4.1.2 Description of the Sample

Our sample consisted of students from Wageningen University. Students who showed their interest to participate in the experiment were selected. The sample size of 50 students per control and treatment group was used amounting to 100 students in total. This particular sample size was chosen due to its practicability and enforceability.

4.1.3 Design of the Experiment

The experiment was divided into three stages. At first, participants were randomly assigned to the treatment and to the control group. Afterwards, written instructions were handed out to students. These instructions were different for students in the control group and students in the treatment group. During the first stage of the experiment the control group was asked to complete a word-search puzzle by finding as many words as they possibly could within 10 minutes. They were paid 10 cents for each correctly identified word within the allotted time limit. Once the time limit ended students were required to fill in a short questionnaire. Next, the control group was asked to make a choice whether they would like to stay and to further participate in the second stage of the experiment under the same condition of receiving 10 cents for each correctly identified word or they would rather leave. After the second stage, students in the control group were asked again to make a choice between these two alternatives.

Participants in the treatment group were under the treatment condition of receiving 1€ regardless of their performance in addition to 10 cents per word they would earn during the first stage of the experiment. Their allotted time to solve the puzzle was the same as for the control group. Once they filled in the questionnaire they were asked to make a decision whether they would like to continue working on the puzzle for another 10 minutes and to earn 10 cents per word they find or they would prefer to leave. Furthermore, it was promised to them that regardless of their decision to stay or to leave they would receive 1€. After the second stage students in the treatment group had to make another decision to stay or to leave under the same conditions as the previous one.

The payment of 1€ represented the basic income grant. It is approximately half of what a person with an average performance would earn by working on the puzzle for 10 minutes. Therefore, the first stage of the experiment in the treatment group corresponds to the time period when a basic

income scheme is introduced while the second and the third stage represent the time period after the introduction of a basic income scheme.

The questionnaire, which students in both control and treatment groups were requested to fill in at the end of every stage of the experiment, provided us with more background information as to how participants felt about the experiment. Students were paid according to their performance and the promise they received, if any, at the end of the stage at which they decided to leave.

The main purpose of the first stage of the experiment was to give to students the chance to learn and to get familiar with the task they were performing. In addition, the first stage was also designed in order to control for the possibility that once students show up for the experiment, they would feel obliged to stay and to do something despite having the examiners to tell them that they can leave without doing anything while still keeping some reward money, if they were part of a treatment group.

4.1.3.1 Further Clarifications

- Students were notified in advance that the experiment could take about 15 to 30 minutes to complete even though the experiment could end earlier, if they decided to leave after the first stage. This notification was made in order to control for the situation when students would leave from the experiment due to their busy schedule.
- The true purpose of the experiment was not disclosed to the subjects. Instead students were told that the purpose of the experiment was to investigate the concept related to the use of visual thinking capacity for pattern recognition.
- It was necessary not to allow any communication between and within the treatment and the control group since we did not want their behaviour to be affected by knowing that some students would receive reward money and their performance to be affected by collaborating with other students on the puzzle.

4.1.4 The Activity

For easier interpretation of the results of the experiment it was decided that only one type of activity would be assigned to students what enabled us to measure and compare students' work performance more accurately. A word-search puzzle was selected as the most appropriate activity because solving a puzzle is a mental activity which emphasizes pattern recognition through focus and vocabulary. Also the word-search puzzle enabled us to use the piece rate pay system for the experiment.

A word-search puzzle consisting of a 19 × 19 matrix of letters was given to participants who were asked to identify as many words as possible related to the search topic. For instance, if 'feelings' was the search topic, participants were asked to find as many words describing positive and negative emotions a person may feel as possible within the time limit. Words in the word-search puzzle could appear in horizontal, vertical or diagonal, forwards or backwards direction. Similar topics for word-searches with the same level of difficulty were chosen. Furthermore, participants did not receive a list of target words that are to be found in the puzzle what made the task more challenging.

Due to this type of activity, it was difficult to estimate the cost of the whole experiment since we did not know how many successfully identified words would be found by students within the time limit. However, it was not necessary to purchase any tools for the experiment.

4.2 QUESTIONNAIRE

A questionnaire was designed in order to determine whether basic income grants impact the level of intrinsic motivation participants felt for a task. The questionnaire was created using the Intrinsic Motivation Inventory. The Intrinsic Motivation Inventory is a measurement device which assesses participants' subjective experience to an activity (Self-Determination Theory- IMI).

The same questionnaire was given to participants in both control and treatment groups. It took about 2 minutes to complete the questionnaire as it consisted of 4 questions. Participants were asked to indicate their answers using a scale from 1 to 7 (from not at all true to very true). Based on the responses received through the questionnaire we were able to analyse the impact of the basic income on students' intrinsic motivation and the impact of the motivation on students' performance.

4.3 DATA COLLECTION

The data collected from the experiment were the number of students who decided not to participate in the second stage and in the third stage of the experiment for both control and treatment groups; the number of correctly identified words in the word-search puzzle within the allocated time limit per individual in the control group as well as the number of correctly identified words in word-search puzzle achieved within the allocated time by students in the treatment group during their participation in the experiment per stage. Then, the data informing us about the level of intrinsic motivation of participants were also used.

The collection of these data was performed by asking participants to fill in the questionnaire and simply by collecting participants' word-search puzzles on which they worked at the end of the session allocated for solving the puzzle.

4.4 DATA ANALYSES

The statistical analyses were performed with the use of SPSS software. T-test for two independent random samples was used for calculating t-value and its corresponding P-value when comparing students' performance from the treatment group with the performance of students in the control group.

Fisher's exact test was used for analysing the impact of the basic income grants on students' participation in the experiment. Lastly, the general linear model was used to investigate the dependence between the levels of intrinsic motivation indicated in the questionnaires and the work performance in order to see whether the relationship between these two variables was significantly different between the control and the treatment group.

4.5 SUMMARY

Chapter 4 described the methodology used in the empirical part of the research. It started by restating the hypotheses formed in Chapter 3, because the aim of the experiment was to

demonstrate the effect of a basic income on labour supply participation and work performance with regard to the verification of our hypotheses. Moreover, the experiment also aimed to investigate the relation between work performance and intrinsic motivation.

The experiment consisted of three stages. One hundred students from Wageningen University participated in the experiment. They were divided into treatment and control group. Participants were asked to work on a world-search puzzle at each stage. They could leave whenever they wished to do so. They were paid 10 cents for each correctly identified word. The difference between the treatment and the control group was that the treatment group was under the treatment condition of receiving 1€ regardless of their performance and regardless of their decision to stay or to leave after first and after second stage of the experiment. Moreover, a questionnaire was given to students in order to determine the impact of basic income grants on the level of intrinsic motivation participants felt when working on their task.

The data collected and analysed from the experiment were the number of students participating in the experiment per stage; the number of correctly identified words in the puzzle and the data about the level of intrinsic motivation. These data were analysed with the use of statistical software SPSS.

CHAPTER 5: RESULTS

In this chapter the results of the data analyses are presented. The data were collected and then processed in response to the main hypotheses stated in Chapter 3. Two fundamental research questions drove the collection of the data from the experiment and the subsequent data analyses. The goal of the experiment was to measure the impact of a basic income on the labour supply and on the productivity. These objectives were accomplished. The findings presented in this chapter demonstrate the effect of a basic income scheme on individuals' behaviour in our experiment.

The Results Chapter is divided into four main sections. Section 5.1 explains the analysis related to the verification of the first hypothesis, which examines the impact of a basic income on labour supply. Next Section 5.2 describes the analysis that correspond to the verification of the second hypothesis, which focuses on investigating the effect of a basic income on the productivity. Section 5.3 discloses the analysis relevant for the examination of the role that the motivation played during the experiment. Section 5.4 reveals the necessity to perform selection effect analysis in order to make sure that the proper randomization of the sample took place during the experiment. Lastly, Section 5.5 summarizes the main findings of this chapter.

5.1 ANALYSIS FOR HYPOTHESIS 1

According to hypothesis 1, which was developed from the theoretical chapter 3, once a basic income is implemented, it is expected that the slight reduction in the labour force participation would occur in the form of the exit from the labour market. In order to analyse the validity of this statement the data regarding the experimental subjects' decision to stay or to leave during the experimental session were analysed.

Since the experiment consisted of three stages, participants were asked to make a decision regarding their further participation in the experiment after the first stage of the experiment and then after the second stage, if they previously decided to stay. The data indicating the number of participants who decided to stay and who decided to leave after the first and the second stage of the experiment in both treatment and control groups were analysed in statistical software SPSS using Fisher's exact test. The null hypothesis for the test assumed no association between the type of the group and the decision to stay or to leave.

Firstly, the Fisher's exact test was run to test this association with the data collected from the first stage of the experiment and then with the data collected from the second stage of the experiment. Afterwards, the number of people who left after the first stage was added to the number of people who left after the second stage. These data representing the behaviour throughout the whole experimental session were then used to perform the Fisher's exact test.

Table 1 displays the number of people who decided to further participate in the experiment and who decided to leave from the experiment for both control and treatment groups. In total, there were three people from the treatment group who decided to leave with one person after the first stage and two people after the second stage of the experiment. Regarding the control group, in total eight people decided to leave among whom seven people decided to leave after the first stage and one person decided to leave after the second stage of the experiment.

Table 1: Count for the Decision to Participate

		Group		
		Stay	**Leave**	**Total**
Group	**Treatment**	47	3	50
	Control	42	8	50
Total		89	11	100

The value for the Pearson's Chi-square, which tests how likely it is that the observed distribution occurs due to chance, is 2,000 with the significance value of 0,157. Therefore, the null hypothesis could not be rejected since the association between the type of the group and the decision to stay or to leave is not significant. However, if one-tailed P-value is considered (P-value=0,157/2), then P-value is significant at 10% level (P-value=0,079). This P-value means that we are 90% confident that the true value of the parameter is in our confidence interval.

Since no high significant dependency between the decisions to stay or to leave and the type of the group was found, hypothesis 1 was not severely challenged. It was shown that students under the treatment of receiving basic income grants did not behave significantly differently from students who did not receive basic income grants. However, there was low significant difference detected when it comes to one-tailed P-value at 10% level. Although, it was expected that more students would decide to leave if they are part of the treatment group, there were more people who left during the experiment from the control group instead.

One of the reasons explaining why the reduction of labour supply was not significant could be the fact that most students felt certain degree of intrinsic motivation for the task what can be seen in Table 4. According to the theory, jobs for which workers feel intrinsic motivation would experience the increase in labour supply because the implementation of a basic income would make people more income secure what would encourage people to change their occupation to a more preferred one (Pech 2010).

Even though the reduction in the labour supply, if any, was expected to occur in the treatment group because basic income grants could act as a substitute to the salary, the findings related to the verification of Hypothesis 1 support our theoretical assumption that a basic income scheme would not significantly negatively impact the labour supply.

5.2 ANALYSIS FOR HYPOTHESIS 2

Hypothesis 2 states that since basic income grants give to people the option not to work, people who despite this option still choose to work are expected to have better performance at work than people to whom the basic income grants were not given. Hypothesis 2 was developed based on the findings from the psychological experiment performed by Schrift and Parker who emphasized in

the experiment the attribute of working as a matter of choice rather than a matter of force or of an obligation (Schrift and Parker 2014).

To determine the veracity of this hypothesis the data regarding participants' performance were analysed. The performance of the control group during the first stage, second stage and third stage of the experiment was analysed in relation to the performance of the treatment group by using the independent samples t-test. The null hypothesis for t-test assumed that there would be no significant difference between the performance of the control group and the performance of the treatment group at each stage.

Table 2 presents the average performance during each stage for both control and treatment groups. The average performance at the first stage for the control group was 12,04 and 12,34 for the treatment group. The average performance at the second stage was 13,26 for the control group and 13,06 for the treatment group. Lastly, the average performance at the third stage was 8,45 for the control group and 8,55 for the treatment group. Simply by looking at the average performances of students per group and per stage, it is noticeable that the performances for the control and the treatment groups were very similar.

Table 2: Group Statistics

Group Statistics

	Group	N	Mean	Std. Deviation	Std. Error Mean
Performance at the 1st stage	Control	50	12,04	5,657	,800
	Treatment	50	12,34	6,066	,858
Performance at the 2nd stage	Control	43	13,26	6,283	,958
	Treatment	49	13,06	5,864	,838
Performance at the 3rd stage	Control	42	8,45	5,649	,872
	Treatment	47	8,55	4,515	,659

Therefore, it is not bewildering that according to the results of the independent samples t-test, there is no significant difference between the performances during the first, the second and the third stage of the experiment of the control and of the treatment group. P-values indicated by t-test were as high as 0,799 for the first stage, 0,878 for the second stage and 0,926 for the third stage of the experiment. Henceforth, the treatment condition with regard to the work performance had no significant effect during the conducted experiment.

Due to these findings the validity of hypothesis 2 was not confirmed since it was expected that the treatment group would perform better than the control group. It was shown that during the experiment the treatment group did perform neither significantly better nor significantly worse than the control group. There can be few reasons why significant difference between the groups did not occur. It could be because the difference between the averages was too small or it could be due to the relatively small sample size.

Furthermore, our experiment was different from the psychological experiment on which Hypothesis 2 is based. Even though a basic income gave to participants the option not to work, this option was given to them along with the monetary reward, which is not present in the original

psychological experiment (Markman 2014). Therefore, more in-depth research of this hypothesis is required before making any conclusive remarks about its veracity.

5.3 ANALYSIS OF MOTIVATION

One of the goals of the experiment was to investigate the role the intrinsic motivation played during the experiment. Since the level of intrinsic motivation might have an influence on people's work performance, it was taken into consideration to analyse the relationship between intrinsic motivation and the performance. The data collected for this analysis were the motivational scores indicated by participants using the motivational scale from 1 to 7 (from 'not at all true' to 'very true').

Experimental subjects were asked to use this scale when filling in the questionnaire after each stage of the experiment. Because the questionnaires consisted of four questions, there were four motivational scores for each stage. The test for scale reliability was conducted to check whether there was internal consistency among the questions asked in the questionnaire. It was important to test the scale reliability because all the questions in the questionnaire were supposed to measure the same thing and that is the level of intrinsic motivation felt during the experiment.

More precisely, the measure called Cronbach's alpha was used to analyse how closely related a set of items were as a group. The Cronbach's alpha for the motivational scores at the first stage was 0,88, at the second stage it was 0,94 and at the third stage the Cronbach's alpha was 0,95. Since Cronbach's alpha of 0,7 or higher is commonly accepted as it indicates the increase in the correlation between the items, the motivational scores derived from the experiment can be considered as internally consistent and were averaged across the four items.

Table 3 displays the average levels of the intrinsic motivation felt during the first stage of the experiment. It was demonstrated that students felt quite motivated to look for the words in the word-search puzzle that was given to them. Motivation felt by students during the second stage and the third stage of the experiment had similar levels as the motivation felt during the first stage.

Table 3: Motivational Scores

Between-Subjects Factors

		Value Label	N
Group	0	Control	50
	1	Treatment	50
Motivation at the 1st stage	1	not at all true	1
	2	untrue	1
	3	mostly untrue	4
	4	somewhat true	12
	5	mostly true	36
	6	true	36
	7	very true	10

Once it was confirmed that there was no problem with the interrelatedness among the motivational scores, the average motivation per stage for the treatment and for the control group could be calculated and used for the General Linear Model analysis together with the data indicating

subjects' performance during each stage. The null hypothesis for this analysis assumed no significant relationship between the performance at each stage and the motivation felt during the corresponding stage with regard to the type of the group the student belonged to.

According to the results generated by the General Linear Model, the performance is not significantly affected by the motivation a participant felt during the experiment in relation to the type of the group he or she belonged to. Considering the performance at the first stage as the dependant variable, the P-value of the interaction between the type of the group and the average motivation for the first stage was 0,433. The second stage had P-value of 0,812 and the third stage had P-value equivalent to 0,971. Therefore, the level of the motivation felt by participants had no significant effect on student's performance. The analyses of the data gathered from the experiment did not prove any significant relationship between these two variables.

5.4 SELECTION BIAS ANALYSES

To ensure that proper randomization of the sample was achieved during the experiment, it was necessary to analyse the presence of selection bias. It was important to preclude the selection bias because if the sample is not non-randomly selected, then the sample could not be representative of the population. In order to check for the selection bias Heckman two step selection model was used to correct for non-randomly selected samples. The results can be seen below in Table 4.

Table 4: Heckman Two-Step Selection Model

```
. heckman P3 Group M3, twostep select(M1) rhosigma
note: two-step estimate of rho = -1.7702096 is being truncated to -1

Heckman selection model -- two-step estimates   Number of obs      =       100
(regression model with sample selection)        Censored obs       =        11
                                                Uncensored obs     =        89

                                                Wald chi2(2)       =      0.38
                                                Prob > chi2        =    0.8289
```

P3	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
P3						
Group	-.0307501	4.080391	-0.01	0.994	-8.02817	7.96667
M3	-1.450766	2.370655	-0.61	0.541	-6.097164	3.195632
_cons	19.7368	16.55733	1.19	0.233	-12.71496	52.18857
select						
M1	.3608697	.1582576	2.28	0.023	.0506905	.6710489
_cons	-.5782601	.7922744	-0.73	0.465	-2.131089	.9745692
mills						
lambda	-22.51182	30.58379	-0.74	0.462	-82.45494	37.4313
rho	-1.00000					
sigma	22.511823					

The output presented in Table 5 has negative Spearman's rho coefficient indicating negative correlation between the error terms. Lambda of 0.462 indicates that there is no selection bias. Hence, there is no need to perform selection analysis for this experiment.

5.5 SUMMARY

In this chapter the findings from the student experiment were presented. It was found that no significant reduction in participation of students in the treatment group occurred during the experiment. However, low significant difference was detected between students' participation in the control group and in the treatment group. Hence, it supports Hypothesis 1 which states that a basic income would not significantly negatively impact the labour supply.

Next, it was found that students' performance in the treatment group was not significantly different from the performance in the control group. Therefore, the validity of Hypothesis 2 was not confirmed since it was assumed that the control group would perform worse than the treatment group. Also no relationship between intrinsic motivation and the performance was found in any of the groups. The level of intrinsic motivation had no significant effect on students' work performance.

Even though our results do not have a statistical significance, nevertheless they are the results from which we can learn something. Perhaps, the implementation of a basic income policy would not lead to as radical changes in human behaviour as it is often feared.

CHAPTER 6: SUMMARY AND CONCLUSION

The first section of Chapter 6 summarizes the findings of the thesis throughout all the chapters. It mentions the most important points about a basic income. Section 6.2 evaluates the thesis research and gives some conclusive remarks. It refers to the limitations of the research and the room for improvement as well as recommendations for further research.

6.1 SUMMARY

First part of this thesis referred to the social and political aspects of a basic income. It stated several benefits and risks associated with the implementation of a basic income scheme. The potential benefits were improved working conditions, increased income equality and better occupation choices. On the other hand, the risks of implementing a basic income were high cost of the implementation which might lead to the increase in income taxes, the reduction in labour supply and the reduction in the work effort. The economic sustainability of a basic income would depend on the way it is financed and the level of basic income grants.

Next, the economic aspects of a basic income were analysed. It was shown that the changes in individuals' behaviour under a basic income scheme would very much depend on people's perception of leisure and the level of the intrinsic motivation they feel for their work. For instance, the changes in labour supply after the introduction of a basic income would correspond to the intrinsic motivation people feel for their job. Consequently, the wages would be directly influenced by the changes in labour supply what could further affect people's work performance.

The thesis also considered different ways of financing a basic income scheme and how these methods would impact the behaviour of individuals. It looked at the possibility to finance a basic income scheme through the increase in income taxes, the use of savings from eliminated welfare programs and the possibility of financing it through the return on natural resources. Moreover, empirical evidence was introduced in the form of few experiments and case studies which were relevant to the topic of a basic income. A survey on a basic income program, a pilot project in Namibia, the case of Alaska Permanent Fund Dividend, an experiment with lottery winners, negative income tax experiments and a psychological experiment were introduced in this thesis.

Next, the methodology chapter described in detail the experiment used to verify the hypotheses which were formulated based on the theoretical and empirical findings in Chapter 3. The experiment aimed to investigate the effect of a basic income scheme on labour supply and work performance. According to Hypothesis 1, receiving a basic income would not result in any major change in the participation in the labour market. If any change would occur, it will be a slight reduction in the labour force participation. Hypothesis 2 stated that since a basic income gives to people the choice not to work, people who do not drop out from the labour force and who decide to continue working under a basic income scheme would perform better than people to whom basic income grants were not given.

Nonetheless, the results of the experiment showed no significant difference between the treatment and the control group. Their work performance was very similar and the motivational level did not have a significant effect on student's performance. Although, low significant difference was found between students' participation in the control group and in the treatment group. Henceforth, the findings supported Hypothesis 1, but they did not support Hypothesis 2.

6.2 EVALUATION AND CONCLUSION

In this paper, I have offered an examination of the effects a basic income policy could have on individuals' behaviour with regard to its further impact on market and the economy in order to investigate whether this policy could favourably affect people's welfare. The relevant literature, case studies with policies of similar attributes like a basic income, pertinent experiments and the data from the student experiment conducted solely for the purpose of this thesis were analysed. According to the evidence the effect of basic income grants on work incentives in practice would depend on the way it is financed and the level of a basic income.

It was demonstrated that the implementation of a basic income could increase the labour supply for jobs with high intrinsic motivation and reduce the labour supply for jobs with low intrinsic motivation. Consequently, the changes in the labour supply would affect wages. It is probable that the wages for unpleasant work and work with low intrinsic motivation would increase in order to make them more attractive whereas the wages for jobs with high intrinsic motivation would be reduced. Next, the changes in wages would further affect the level of motivation workers feel when performing their tasks what is directly linked to their work performance. Hence, the implementation of a basic income scheme would cause a chain of effects which ultimately depend on people's motivation to work and their perception of leisure.

The supporters of a basic income tend to use the argument that a basic income would have positive effects on poverty and inequality by providing income security and minimum social protection to its recipients to advocate the idea of a basic income. On the contrary, the opponents of a basic income do not like the idea of a basic income because of the risks associated with the introduction of such program. It is argued that the cost of the implementation is very high; and that under a basic income scheme people would stop working and instead they would engage in socially destructive idleness lowering productivity, employment and economic growth.

Nonetheless, it is generally agreed that the concept of a basic income has something valuable to offer to the on-going debates on welfare reforms. The arguments and other disputes among social scientists are a natural outcome of their various and vigorous ideological stances. It is important that all the aspects mentioned above with regard to their influence on a basic income scheme or how they would be influenced by the implementation of a basic income scheme would be recognized**,** further investigated and taken into consideration by policy analysts and researchers when drafting the design for a basic income program.

Regarding the limitations of the research, the type of the sample used for the experiment limited our ability to make broader generalisations from our results. Since the implementation of an unconditional basic income would apply to all individuals, more diversified sample would be more appropriate for the research. However, the sample consisting of students did not reduce the quality of our findings because students stand for a good example of young adults whose work related choices could differ depending on their income. Moreover, the experiment was also limited by the size of the sample what could be one of the factors as to why the difference between the control and the treatment group was insignificant. Lastly, the theoretical part of the research was limited by the lack of real data on the changes in labour supply and work performance caused by a basic income scheme since there is not a country that uses a basic income welfare system.

Some of these limitations could be overcome through future research, which could use a larger and more diverse sample. Also the activity employed to determine the changes in work performance could change. There could be a separate experiment with boring tasks on one hand and creative tasks on the other hand. Such experiment would enable researchers to see the changes in individuals' behaviour with regard to different types of jobs. Moreover, future researchers could use different method of payment. For example, they could set a minimum requirement for the performance, in which case participants would be paid only if their performance exceeds the defined standard. Such approach could facilitate participants' motivation to do their best during the experiment.

Additionally, researchers could do the experiments with varying levels of basic income grants what would allow them to observe the changes in the labour force participation and in the work performance in relation to different levels of a basic income that individuals would receive on regular basis. Also an experiment with longer and more stages than three could be conducted in order to observe the behaviour of participants over longer period of time. Henceforth, further research on an unconditional basic income is required as it could greatly contribute to the improvement of welfare policies since the possible benefits of a basic income have the potential to drastically enhance people's lives.

APPENDIX

Appendix A: Printable Word-Search Puzzles Topics

A Dog's Life	Celebrities	Golfers	Money, Money, Money	Shapes	Underwater World
All in the Mind	Circus	Gone Fishing	Movies	Silver Screen 1	Universe
Americana	Climbing	Good and Bad	Move It	Silver Screen 2	US Capitals
Ancient Egypt	Composers	Good for you	Murder Mystery	Some Ex's	Valentine
Ancient Greece	Country Style	Guitar Greats	Musical Instruments	Space Exploration	Volcanoes
Anyone for Tennis?	Cowboys	Happy Anniversary	Mythical Creatures	Sounds	Waders
Australia	Crime Scene	Harry Potter	Occupations	Spectrum	Watch It
Around and About	Day and Night	Hiawatha	Olympic Games	Sports	Water
Auto Parts	Dinosaurs	Hide & Seek	On the Farm	Stepping Out	Weather
A work of Art	Eating Out	High and Low	On the Move	Strut Your Stuff	What's Cooking?
Big Deal	Elements	Home Sweet Home	On the Water	Sweet Things	What's your game?
Birds	Emperors	Horsing Around	Out There	Take a Break	Wide Open Spaces
Birds of Prey	Europe	Inventors	Painters	Take it or Leave it	Wild Things
Bits & Bytes	Explorers	In Your Dreams	Play A Round	That's Showbiz	Words & Music
Bond	Face the Music	Just in Time	Q-Words	The Lord of the Rings	World Cup 2014
Bones	Family Circle	Keep Fit	Quiz Show	Thirsty Work	Writings
Bring It On	Feelings	Keep in Touch	Racer	Time Off	X-Words
Broadway Shows	Flower Power	Laugh or Cry	Reptiles	Touch Wood	Yakety-Yak
Build It	Food & Drink	Let's Dance	Rivers	Travel Light	Zodiac
Cartoon Characters	Freezing	Little and Large	Rough and Smooth	Trees	Zoom
Cats	Game Hunter	Long and Short	Sailing	Try It On	Z- Words

(PuzzleChoice)

Appendix B: Word-Search Puzzle Example
(including the list of words hidden in the puzzle)

FEELINGS

Can you find the hidden words? They may be horizontal, vertical, diagonal, forwards or backwards.

J	D	E	T	A	T	I	R	R	I	V	H	S	G	P	E	V	O	L
H	A	A	I	D	E	Y	O	N	N	A	C	U	C	D	O	D	D	Y
D	D	N	S	O	R	R	O	W	M	H	I	O	H	U	D	E	E	E
E	E	G	G	A	R	E	I	O	E	V	N	I	T	Y	I	L	S	L
S	S	S	O	R	D	I	X	E	S	T	E	R	A	R	S	I	I	A
P	P	T	V	A	Y	N	R	A	E	U	A	U	R	U	Q	G	R	T
A	E	B	L	G	V	F	E	N	S	G	O	F	W	F	U	H	E	E
I	R	G	O	I	U	G	T	S	E	P	H	I	Z	V	I	T	Y	D
R	A	V	L	L	A	E	L	D	S	A	E	Q	X	V	E	E	S	S
I	T	X	P	R	D	A	J	A	T	X	A	R	V	N	T	D	A	E
R	E	L	U	F	Y	O	J	E	A	G	G	R	A	V	A	T	E	D
A	B	D	E	N	R	E	C	N	O	C	R	P	V	T	I	A	N	V
T	D	I	S	A	P	P	O	I	N	T	E	D	A	S	E	E	U	W
E	X	H	I	L	I	R	A	T	E	D	G	T	F	N	X	D	O	H
T	I	L	U	F	R	A	E	F	U	H	R	I	P	C	I	R	T	C
A	D	E	N	E	T	H	G	I	R	F	E	T	I	C	R	C	V	L
F	U	L	F	I	L	L	E	D	D	D	T	T	H	Y	P	P	A	H
E	T	A	N	O	I	S	S	A	P	R	E	R	U	S	A	E	L	P
B	I	N	F	U	R	I	A	T	E	D	V	D	U	O	R	P	P	T

AGGRAVATED, ANGRY, ANGST, ANNOYED, ANXIOUS, CHEERFUL, CONCERNED, CONTENTED, DELIGHTED, DESIRE, DESPAIR, DESPERATE, DISAPPOINTED, DISQUIET, ELATED, EXASPERATED, EXCITED, EXHILIRATED, FEARFUL, FRIGHTENED, FULFILLED, FURIOUS, FURY, GLAD, HAPPY, HATE, INFURIATED, IRATE, IRRITATED, JOYFUL, LOVE, OUTRAGED, PANIC, PASSIONATE, PLEASURE, PROUD, RAGE, REGRET, SADNESS, SATISFIED, SORROW, UNEASY, WORRY, WRATH.

(PuzzleChoice)

Appendix C: Questionnaire

QUESTIONNAIRE

Please use the following scale to indicate how much you agree with the following statements. Please, encircle your response.

1	2	3	4	5	6	7
not at all true			somewhat true			very true

1. The task was fun to do.

   1 2 3 4 5 6 7

2. I enjoyed the task very much.

   1 2 3 4 5 6 7

3. I found the task very interesting.

   1 2 3 4 5 6 7

4. I would describe the task as very enjoyable.

   1 2 3 4 5 6 7

Appendix D: Control Group Booklet

INSTRUCTIONS

Thank you for agreeing to participate in today's experiment. This is an experiment which investigates the role visual thinking capacity plays in pattern recognition. Your task is to work on a word-search puzzle, in which we ask you to find as many words related to the search-topic as possible within **10 minutes**. You will be paid 10 cents for each correctly identified word at the end of the experimental session.

The examiner will signal the start and the end of the period of time allocated for solving the puzzle. Once the time limit for solving the puzzle ends, you may turn the page and follow further instructions. Please do not talk or in any way communicate with other participants during this experiment. If you have a question or problem at any point during the experiment, please raise your hand and the examiner will come to you. Your performance and your answers to the few survey questions will be evaluated anonymously. By continuing, you agree to participate in this experiment.

Can you find the hidden words associated with the topic '*feelings*'? The hidden words are adjectives describing positive and negative emotions a person may feel. They may be horizontal, vertical, diagonal, forwards or backwards. Please, encircle the identified words as shown in the example. There are 44 correct answers in this puzzle.

FEELINGS

QUESTIONNAIRE

Please use the following scale to indicate how much you agree with the following statements. Please, encircle your response.

1	2	3	4	5	6	7
not at all true			somewhat true			very true

5. The task was fun to do.

   1 2 3 4 5 6 7

6. I enjoyed the task very much.

   1 2 3 4 5 6 7

7. I found the task very interesting.

   1 2 3 4 5 6 7

8. I would describe the task as very enjoyable.

   1 2 3 4 5 6 7

Thank you for your participation. If you wish, you may stay and continue you participation in the experiment by working on another word-search puzzle for 10 minutes. Again you would be paid 10 cents for each correctly identified word.

Please, mark below whether you decided to stay or to leave. Once you made your decision, put your pen down and wait for further instructions.

STAYING ☐

LEAVING ☐

Can you find the hidden words associated with the topic *'writings'*? The hidden words are nouns that correspond to various forms of a written text. They may be horizontal, vertical, diagonal, forwards or backwards. Please, encircle the identified words as shown in the example. There are 44 correct answers in this puzzle.

WRITINGS

QUESTIONNAIRE

Please use the following scale to indicate how much you agree with the following statements. Please, encircle your response.

1	2	3	4	5	6	7
not at all true			somewhat true			very true

1. The task was fun to do.

   1 2 3 4 5 6 7

2. I enjoyed the task very much.

   1 2 3 4 5 6 7

3. I found the task very interesting.

   1 2 3 4 5 6 7

4. I would describe the task as very enjoyable.

   1 2 3 4 5 6 7

If you wish, you may stay and continue you participation in this experiment by trying to solve one more word-search puzzle in 10 minutes. Again you would be paid 10 cents for each correctly identified word.

Please, mark below whether you decided to stay or to leave. Once you made your decision, put your pen down and wait for further instructions.

STAYING ☐

LEAVING ☐

Can you find the hidden words associated with the topic *'take it or leave it'*? The hidden words are verbs that are synonyms to the words 'take' and 'leave'. They may be horizontal, vertical, diagonal, forwards or backwards. Please, encircle the identified words as shown in the example. There are 47 correct answers in this puzzle.

TAKE IT OR LEAVE IT

QUESTIONNAIRE

Please use the following scale to indicate how much you agree with the following statements. Please, encircle your response.

1	2	3	4	5	6	7
not at all true			somewhat true			very true

1. The task was fun to do.

   1 2 3 4 5 6 7

2. I enjoyed the task very much.

   1 2 3 4 5 6 7

3. I found the task very interesting.

   1 2 3 4 5 6 7

4. I would describe the task as very enjoyable.

   1 2 3 4 5 6 7

Appendix E: Treatment Group Booklet

INSTRUCTIONS

Thank you for agreeing to participate in today's experiment. This is an experiment which investigates the role visual thinking capacity plays in pattern recognition. Your task is to work on a word-search puzzle, in which we ask you to find as many words related to the search-topic as possible within **10 minutes**. You will be paid 10 cents for each correctly identified word at the end of the experimental session. In addition, you will receive 1€ regardless of your performance.

The examiner will signal the start and the end of the period of time allocated for solving the puzzle. Once the time limit for solving the puzzle ends, you may turn the page and follow further instructions. Please do not talk or in any way communicate with other participants during this experiment. If you have a question or problem at any point during the experiment, please raise your hand and the examiner will come to you. Your performance and your answers to the few survey questions will be evaluated anonymously. By continuing, you agree to participate in this experiment.

Can you find the hidden words associated with the topic *'feelings'*? The hidden words are adjectives describing positive and negative emotions a person may feel. They may be horizontal, vertical, diagonal, forwards or backwards. Please, encircle the identified words as shown in the example. There are 44 correct answers in this puzzle.

FEELINGS

QUESTIONNAIRE

Please use the following scale to indicate how much you agree with the following statements. Please, encircle your response.

1	2	3	4	5	6	7
not at all true			somewhat true			very true

9. The task was fun to do.

   1 2 3 4 5 6 7

10. I enjoyed the task very much.

    1 2 3 4 5 6 7

11. I found the task very interesting.

    1 2 3 4 5 6 7

12. I would describe the task as very enjoyable.

    1 2 3 4 5 6 7

Thank you for your participation. If you wish, you may stay and continue your participation in the experiment by working on another word-search puzzle for 10 minutes. Again you would be paid 10 cents for each correctly identified word. Whether you decide to stay or to leave, you will receive in any case another 1€.

Please, mark below whether you decided to stay or to leave. Once you made your decision, put your pen down and wait for further instructions.

STAYING ☐

LEAVING ☐

Can you find the hidden words associated with the topic *'writings'*? The hidden words are nouns that correspond to various forms of a written text. They may be horizontal, vertical, diagonal, forwards or backwards. Please, encircle the identified words as shown in the example. There are 44 correct answers in this puzzle.

WRITINGS

QUESTIONNAIRE

Please use the following scale to indicate how much you agree with the following statements. Please, encircle your response.

1	2	3	4	5	6	7
not at all true			somewhat true			very true

1. The task was fun to do.

   1 2 3 4 5 6 7

2. I enjoyed the task very much.

   1 2 3 4 5 6 7

3. I found the task very interesting.

   1 2 3 4 5 6 7

4. I would describe the task as very enjoyable.

   1 2 3 4 5 6 7

If you wish, you may stay and continue your participation in this experiment by trying to solve one more word-search puzzle in 10 minutes. Again you would be paid 10 cents for each correctly identified word. Regardless of whether you decide to continue with the experiment or to leave, you will receive in any case another 1€.

Please, mark below whether you decided to stay or to leave. Once you made your decision, put your pen down and wait for further instructions.

STAYING ☐

LEAVING ☐

Can you find the hidden words associated with the topic *'take it or leave it'*? The hidden words are verbs that are synonyms to the words 'take' and 'leave'. They may be horizontal, vertical, diagonal, forwards or backwards. Please, encircle the identified words as shown in the example. There are 47 correct answers in this puzzle.

TAKE IT OR LEAVE IT

QUESTIONNAIRE

Please use the following scale to indicate how much you agree with the following statements. Please, encircle your response.

1	2	3	4	5	6	7
not at all true			somewhat true			very true

1. The task was fun to do.

   1 2 3 4 5 6 7

2. I enjoyed the task very much.

   1 2 3 4 5 6 7

3. I found the task very interesting.

   1 2 3 4 5 6 7

4. I would describe the task as very enjoyable.

   1 2 3 4 5 6 7

Appendix F: Flyer for Inviting Research Participants

VOLUNTEERS NEEDED FOR RESEARCH ON PATTERN RECOGNITION

We are looking for volunteers to participate in the experiment on visual thinking capacity. You will be asked to work on a word-search puzzle. The study might take 15 to 30 minutes to complete. In appreciation of your time, you will be paid based on your performance.

If you are interested, please register in the classroom C4042 in the Orion building.

Thank you!

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