

Charles University in Prague

Faculty of Social Sciences
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MASTER THESIS

**Estimating the Elasticities of Labour Supply for
SMEs in Bosnia and Herzegovina**

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Academic Year: **2013/2014**

Declaration of Authorship

The author hereby declares that she compiled this thesis independently, using only the listed resources and literature.

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Prague, July 17, 2014

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Acknowledgements

First and foremost I want to thank my supervisor, PhDr. Wadim Strielkowski, Ph.D. I appreciate all his contributions in terms of time and ideas during the writing of this Master thesis. In particular, I appreciate all his efforts to make my Master degree experience productive and stimulating. The joy and enthusiasm he has for his research were both contagious and motivational for me.

My time at Charles University was made enjoyable in large part due to the many friends and groups that became a part of my life. I am indebted to all my friends who have supported me over the last period of time: Tihana Ibrahimpašić, Muhammad Ali Shuja, Lei Ba, Amela Šarić, and Tanja Ibrahimpašić – thank you all for helping me during tough times.

Lastly, I would like to thank my family for all their love and encouragement, and especially my mother who raised me with a love of science and supported me in all my endeavours.

I am grateful to my husband Aldin who was supportive, encouraging and patient during all the years we spent apart, and his faithful support during the final stages of this Master thesis is appreciated beyond words.

I thank my lovely son Jaan Muhamed for his sweet smile and understanding for my absence during the period of writing this Master thesis.

Thank you.

Abstract

This Master thesis aims at testing the intertemporal substitution hypothesis (ISH) for small and medium enterprises in Bosnia and Herzegovina. We predicted a positive relationship between the hours worked and the transitory changes in wages, and tested the hypothesis using the data collected via surveys of small entrepreneurs in North-Western Bosnia and Herzegovina; collecting data on daily income and the hours worked. The estimated wage elasticities are positive and different from zero, according to which it appears that the hypothesis of negative wage elasticities has no empirical evidence in the case of Bosnian and Herzegovinian entrepreneurs. This result implies that the intertemporal labour substitution hypothesis found supportive evidence and that we can reject the daily targeting hypothesis. We also argue that entrepreneurs tend to pursue profits across working days because their main motive for running a business is the accumulation of capital and wealth, so that they follow the pattern of intertemporal labour substitution. The findings can be explained by an unfavourable business climate in Bosnia and Herzegovina, which is a result of a long-lasting transition process the country is still undergoing.

Keywords: labour supply, elasticity, intertemporal substitution, daily targeting, SMEs, Bosnia and Herzegovina

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Abstrakt

Tato diplomová práce testuje intertemporální substituční hypotézu (ISH) pro malé a střední podniky v Bosně a Hercegovině. Hypotéza předpokládá pozitivní vztah mezi počtem odpracovaných hodin a přechodných změn mezd. Testovali jsme hypotézu, s využitím údajů shromážděných prostřednictvím průzkumů malých podnikatelů v severozápadní Bosně, sběr dat o denním příjmu a počtu odpracovaných hodin. Odhadované mzdové elasticity jsou pozitivní a odlišné od nuly, což ukazuje, že v případě bosenských podnikatelů. Hypotéza o negativních elasticitách mezd nemá žádný empirický důkaz. Z těchto zjištění vyplývá, že pro hypotézu o intertemporální substituci práce byl objeven podpůrný důkaz, a my tak můžeme odmítnout denní úkolovou hypotézu. Také tvrdí, že podnikatelé mají tendenci se honit za ziskem během pracovních dní, protože jejich hlavním motivem podnikání je hromadění kapitálu a bohatství, a proto dodržují vzorec intertemporální substituce práce. Učiněné závěry lze vysvětlit nepříznivým klimatem podnikatelského prostředí v Bosně a Hercegovině, které je výsledkem dlouhotrvajícího procesu tranzice, v němž se země dosud nachází.

Klíčová slova: nabídka práce, pružnost, intertemporální substituce, denní cílení, malé a střední podniky, Bosna a Hercegovina

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Master Thesis Proposal

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Proposed Topic:

Estimating the Elasticities of Labour Supply for SMEs in Bosnia and Herzegovina

Topic Characteristics:

Card et al. (1991) explain that intertemporal substitution is one of the central theories of labour supply, and its existence is important for the transmission of macroeconomic policies.

The general economic model of labour supply suggests that the hours worked are positively related to the wage. Lucas and Rapping et al. (1969) show that more work will be done when real wages are high and less when they are low, so that the worker chooses more leisure. Camerer et al. (1997) outline the property of labour supply with intertemporal substitution, which is assumed to show different results when tested on small entrepreneurs. More precisely, it might show negative wage elasticity, which means that self-employed workers will decide rather to shorten their working hours in the case of an increase in daily income and prolong them in situations of low-day income. Altonji et al. (1986), Berg (1961), and Orde-Brown et al. (1946) show that low elasticity of intertemporal substitution can be found in small privately-owned enterprises.

By examining the data on the hours worked and the average wage per hour, it is possible to explore whether SMEs follow the intertemporal substitution or daily-targeting and to explore the relationship between wages and the hours worked. Since this analysis is relevant for determining the success factors of SMEs in a country, it incorporates various underlying psychological processes, motives of entrepreneurs and the tradition of the country. Therefore, the study will entail an analysis of Bosnia and Herzegovina for which we assume will show a relationship different than the one stated in general economic theory. We will prove this relationship with the provided imputations towards the success factors of SMEs, which will in turn serve as important findings for policymakers in order to tell the direction of policies that should stimulate economic growth and strengthen the SME sector.

Hypotheses:

1. The relationship between the hours worked and the average daily wages for small entrepreneurs in Bosnia and Herzegovina is negative.
2. The elasticity of labour supply in the case of SMEs, especially for micro entrepreneurships, is negative.
3. The data based on the number of hours worked and the daily wage show evidence of daily targeting rather than intertemporal substitution in the case of small entrepreneurships in Bosnia and Herzegovina.

Methodology:

In order to verify the hypothesis, we have to collect the data, which will be obtained using surveys among Bosnia and Herzegovina's SME sector. The data collection process will start with collecting the data from Bosnia and Herzegovina from privately-owned small businesses engaged in specified activities, such as crafts, retail, tourism, wood, etc.

This exercise is important in order to prove the pattern that Bosnian and Herzegovinian entrepreneurs follow in terms of either the intertemporal substitution or the daily targeting hypothesis, which depends on many factors. One of the factors is the stage of the country's transition, the tradition and background of the country, as well as some other factors that might affect the behaviour of firm owners. The surveys will be constructed so as to obtain clear and reliable data on an entrepreneur's position, number of employees, income, position on the market, and hours of work on a daily basis, as well as income.

The dataset will contain around 2,000 observations, because each firm will be observed for a period of 14 days. The most important data we are after is the working hours and the daily wage earned, which will be collected for around 100 firms.

Outline:

1. Introduction
2. Literature Overview
3. Theoretical Considerations: Intertemporal Labour Supply
4. Small and Medium Enterprise Sector in Bosnia and Herzegovina
5. Empirical Analysis
6. Conclusions

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Date: 8th June 2011

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Chapter 1

Introduction

The response of labour supply in variation to the wage rate over time has an important role in understanding business cycle fluctuations. Moreover, in relevant research literature, the intertemporal labour supply elasticity yields different results that have policy implications. Labour supply is sensitive to intertemporal variation in wage, where the intertemporal substitution effect is measured by the elasticity of labour supply with respect to wage rate. It helps to predict that workers in some cases are willing to substitute labour and leisure intertemporally (Lucas and Rapping, 1969). Nevertheless, these results are difficult to interpret, especially since the intertemporal substitution hypothesis (ISH) assumes the wage to be transitory i.e. wages are relatively constant within the day, but uncorrelated across days, which in reality is hardly the case. In literature, there are different approaches to the ISH, where the macroeconomic model is based on aggregate data with labour supply responses having relatively high elasticities, while the microeconomic model is based on the panel data with small labour supply elasticity. Accordingly, there is no consensus among economists on the sign and value of the elasticity used in labour market studies, but the estimation of the type of behaviour that workers are used to following, as well as the psychological aspect, can help to understand the working patterns of small entrepreneurs.

This Master thesis aims to assess a specific target group of small entrepreneurs in Bosnia and Herzegovina (BiH), as well as their decisions regarding intertemporal substitution between work and leisure in the context of economic decisions. This target group of workers has been assessed because, in the short run, they can decide on how many hours they will work and can set their own income target. Another reason this target group has been chosen is because they face daily wage fluctuations that are sources of demand shocks, such as weather conditions, holidays, the economic situation, etc. Thus, this study tries to answer questions concerning the working hours, income target and the overall working patterns among the Bosnian and Herzegovinian SME sector. According to the classic economic theory, people try to maximize income and leisure time, working longer when the wage rate is higher and working less when the wage rate is lower. The evidence for this can be found among the occupations that allow workers to choose how many hours a day to work. Specifically,

Camerer et al. (1997) proved the daily targeting hypothesis of income for New York City taxi drivers, who intertemporally substitute leisure and work. Therefore, this study makes a contribution to estimating the elasticity of labour supply in the case of Bosnian and Herzegovinian small entrepreneurs. The data in the study was collected via surveys of and interviews with small entrepreneurs, mainly in North-Western Bosnia and Herzegovina (the Una-Sana Canton), who are employees or owners of small firms in the manufacturing, agricultural, crafts and retail sectors. The data collected helped us to estimate the relationship between wages and the hours worked and to test the intertemporal labour substitution hypothesis (ISH). Moreover, the estimated elasticities are positive, so that the daily targeting hypothesis does not show empirical evidence in the case of Bosnian and Herzegovinian micro-entrepreneurs and therefore we cannot reject the ISH. The provided results show that the intertemporal labour substitution pattern is followed and that entrepreneurs cannot possibly afford to work based on the daily targets set, but rather work long hours or work fixed hours only.

Vis-à-vis previous research evidence, we know that wage is a key determinant of the number of hours of work and that an increase in the wage usually leads to an increase in the labour supply, which implies an upwards-sloping labour supply curve and the extent to which a wage increase leads to an increase in the labour supply. Studies show that there is a possibility for the labour supply curve to be backwards-bending due to the decision of the worker to work fewer hours when the wage is increased and to consume more leisure. As already mentioned, it can be due to the behavioural influence and the difference between each worker's target and life aspirations. Hence, the income effect where a worker can reach his income target faster and therefore work fewer hours might convince people to work less and have more leisure time, which might be the case in developed countries with favourable business climates and well established legal framework. The analysis of Bosnian and Herzegovinian economy and the working patterns in the SME sector show that a small number of entrepreneurs are willing to cut working hours when reaching an income target for the sake of more leisure time.

Therefore, the question of the daily targeting hypothesis for entrepreneurs is related to the country's overall economic growth and business climate, as well as the ambient with which the SME sector is faced. In order to contribute to the research literature on labour

supply elasticity, we analysed the development of the SME sector in Bosnia and Herzegovina and gauged the country's business climate.

The thesis is structured in 6 chapters as follows: Chapter 2 provides a literature review on the estimation of labour supply elasticities. Chapter 3 covers the theory of intertemporal substitution. Chapter 4 examines the SME sector in Bosnia and Herzegovina. Chapter 5 describes the empirical analysis by providing an overview of data, methodology, selected model, and results obtained. Finally, the Conclusions sums up the findings and provide relevant policy implications.

Chapter 2

Literature Review

The following chapter presents a literature review and the empirical findings on labour supply elasticities, as well as the evidence of the intertemporal substitution hypothesis, which will be the basis for further investigation in proving different patterns followed by small entrepreneurs in Bosnia and Herzegovina.

According to the research literature that follows the general economic theory, the hours worked are positively related to the wages. Hence, MaCurdy (1981), Altonji (1984), Alogoskoufis (1987), Card et. al (1992) estimated in their studies positive relation of the hours worked to the wage as it is predicted by the general economic theory, which is not always easy to verify. On the other hand, Camerer (1997), Chou (2000), and Farber (2005) estimated negative elasticity of labour supply.

This literature review as part of the Master thesis makes a contribution to presenting empirical findings and evidence that show different working patterns than the one perceived by the general economic heuristics. The intertemporal substitution hypothesis (ISH) explains how labour supply responds to wages and recent income changes. Based on the life cycle model of labour supply, the intertemporal substitution theory suggests the measurement of the rate of intertemporal substitution by using variation in annual wages and hours worked. Most studies that have already used this approach found small or even negative elasticities of labour supply (Blundell and MaCurdy, 1999). As the research literature suggests, the ideal test of the labour supply response to the wage increase is the one where the wage is transitory, which means that it is relatively constant within a day but uncorrelated across days. However, the problem is that most entrepreneurs in the SME sector have very limited ability to decide how much to work, which is the main reason why this research mainly focuses on workers with occupations that allow choosing how long and how hard they will work each day. The mechanism of intertemporal substitution of leisure in a real business cycle has been described as the main cause of fluctuations in the level of employment, which, together with shocks, has an effect on the employment rate. As Hansen and Wright (1992) stated, intertemporal substitution is the core of the labour-market specification of empirical real business cycle

models. Barro and King (1984) regard the ISH as an integral part of labour market fluctuations in employment, which is included in the basis of business cycles.

A further analysis of related literature is separated based on the macroeconomic and microeconomic perspective, which is where we start with one of the first studies on the intertemporal substitution model by using aggregate data.

2.1. Macroeconomics – Evidence from Aggregate Data

In line with the business cycle model, the existence of the intertemporal substitution hypothesis (ISH) is an important factor of macroeconomic policies (Barro and King, 1994).

In general economic theory, Lucas and Rapping (1969) were pioneers in testing the validity of the intertemporal substitution hypothesis in macroeconomics. Even though this approach at first relied on Keynesian labour market theories, later it was seen more as a pure classical model of employment fluctuations, as Rees (1970) stated.

The main idea behind the ISH in the labour market theory in which labour supply responds positively to transitory increases in the real wage, and real interest rate is that workers are rational in deciding how to adjust their labour supply in times with favourable and negative shocks the economy is full of. Moreover, according to Lucas et al. workers substitute labour and leisure intertemporally, which means that they work more when wages are higher and consume more leisure when the forfeit wage is lower.

The ISH as one of the central questions in macroeconomics has been widely investigated in order to show empirically the results of the hypothesis, which resulted in divided opinions according to different studies of the macroeconomic perspective.

For example, according to Thomas Coleman (1984), most of the variation in aggregate man-hours in US data resulted from employment variation, which, according to George Mankiw et al. (1985), resulted in the rejection of the ISH. On the contrary, Alogoskoufis (1987) used aggregate US and UK time-series data and employed alternative wage variables, such as annual, weekly and hourly wages in which he obtained positive elasticity of labour supply with values ranging between 0.5-1.5. Alogoskoufis reached conclusions which are favourable to the ISH and stated that the response of labour supply to real wages increase is more important for the number of employees than for the hours worked. Mankiw, Rotemberg, and Summers (1985) examined empirically the differential response of labour supply to transitory shocks to real wages on aggregate data. They stated that leisure does not downsize the

problem of consumption based on intertemporal substitution and so rejected the ISH. Mankiw et al. (1985) enumerated multiple reasons for poor empirical results, which can be due to measurement and estimation errors, seasonal fluctuations that account for variance in leisure, and others. They obtained implausible parameters of the intertemporal utility function, which are the structural parameters of the model. Low or even negative elasticities are estimated for intertemporal substitution. On the contrary, Dutkowsky and Foote (1992) performed some robustness tests with the estimated intertemporal substitution model in which they rejected the overidentifying restrictions of Mankiw et al. (1985). In this study, the money demand equation shows good results by using the seasonally adjusted US data estimated on the semi-reduced-form labour supply function, which indicate significant intertemporal substitution effects. Regarding the labour supply elasticity on aggregate data, Douglas (1934) used age-sex groups for 38 US cities and examined both the time series and the cross-section data on hours of work and hourly earnings, thereby obtaining a negative elasticity ranging between -0.1 and -0.2. Considering the real business cycle model and its relation to the elasticity of labour supply, Depew and Sorensen (2011) obtained results based on which they inferred that the labour supply elasticity is lower during recession and higher during expansion. Therefore, the elasticity sign of labour supply depends not only on models and data purely, but on many other factors as well, which significantly affect the results.

2.2. Microeconomic Data – Evidence from Panel Data

From a microeconomic perspective, studies on intertemporal substitution hypothesis and labour supply elasticity are based on the household data analysis in which each household represents its preference on leisure measured by the elasticity of labour supply. Mankiw et al. and Altonji (1984) examined the response of the labour supply concerning the variations in wage rates over time. Altonji used microdata on wages, hours worked, and other household characteristics, whereby examined the two methods available in literature for measurement of intertemporal substitution. In the first approach consumption is employed as a control variable for wealth and unobserved expectation about future wages in the labour supply equation, and the second approach estimates the first difference equation for hours where the previous period of labour supply is a control variable for wealth and wage expectations. The paper estimates intertemporal labour supply elasticity by using data for men who have been married for 14 years (panels), which contain data on both labour supply and consumption. The main

problem of the implementation of intertemporal models of labour supply lies in the dependence of current labour supply on past and expected future wage rate, which is usually missing data. The main obstacle in the study is the measurement error in discovering the reaction of labour supply to changes in the transitory wage. Hence, the model contains many limitations, among which the most important one is the assumption that workers can choose the hours worked and face exogenous wages. The average wage measure causes bias and there are restrictions to married men in a specific group age so that the evidence is based on the hourly rated workers. Provided results show that the intertemporal substitution elasticity for married men is between 0 and 0.35, which is small but positive. In addition to this, it means that there is no consensus on intertemporal supply response of the aggregate workforce apart from the expected wage fluctuations causing changes in the hours worked. However, the measurement error has to be taken into account, as well as the negative and statistically insignificant real wage elasticity result. MaCurdy (1981) estimated 3 relevant substitution elasticities that foresee the reaction of hours of work to changes in the wage. He assumes that an unexpected transitory change in the wage rate triggers a wealth effect, which is insignificant and has no long-run effect. Moreover, this explains that the effect of wage rate depends on the source of changes. The intertemporal elasticity determines the labour supply response to wage changes resulting from life-cycle wage growth and movements over a certain business cycle. The results of the intertemporal substitution elasticity indicate that a 10% increase in real wage leads to a 1-5% increase in the hours worked, which falls within the same range as Altonji's results (0 and 0.35). The results depend on the demographic characteristics included and since the intertemporal substitution elasticity is around 0, it suggests a reasonable degree of risk aversion. However, according to the literature, the ideal test of labour supply reaction to the wage increase should be consistent with the transitory wages (e.g. MaCurdy, 1981, p. 1074).

2.3. Estimation of Labour Supply in Specific Occupations

As already stated, the neoclassical model of the life-cycle approach to labour supply predicts a positive wage elasticity of hours worked. However, Camerer et al. (1997) analysed the labour supply elasticity of New York City (NYC) taxi drivers, who represent a specific work force since they are in a position to choose how many hours they will work. The

evidence shows a strong negative elasticity of hours worked to income earned, which is explained by a model in which the drivers have a daily income target and work until the target is reached. This is in compliance with the prospect theory that Kahneman and Tversky (1979) explained. Since people are generally loss averse, they are more sensitive to changes in income below the point of loss than above its gains. It means that the daily labour supply of NYC taxi drivers is in line with loss aversion around a daily income target. Therefore, when a worker chooses his reference point to be a daily income target, he will tend to reach exactly this target and whenever he decides to quit work because of the income outcome it means that, in accordance with the prospect theory, the wage elasticity of hours worked will be negative. Camerer et al have chosen taxi drivers because they are leasing the cars for a fixed rate for a predetermined period of time, and keep the entire fare income after paying the fixed costs. They face wages that fluctuate on a daily basis due to demand shocks caused by the weather, traffic conditions, holidays, etc. Moreover, according to Camerer these wages are transitory, which means that they tend to be correlated within days and uncorrelated across days. The main analysis is based on calculating a daily wage rate as the ratio of daily income to daily hours, which is regressed as the logarithm of daily hours on the logarithm of this wage rate. The author regressed hours on daily income divided by the total number of hours worked that day, and the instrument wages with the average daily wage of other workers on the same day, similarly to the study that Chou did on Singapore taxi drivers. The result is a significant and substantial negative elasticity of labour supply. There are several explanations for such a result. One of it is the psychological factor, such as the theory of narrow bracketing that is not incorporated in the classical dynamic models of labour supply. Both the idea that taxi drivers make labour supply decisions one day at a time, and that they seem to have a target wage are in line with psychological research, as well as the fact that the marginal utility of income declines substantially around the average daily income level, just as Camerer explained. Thus, the one-day targeting hypothesis predicts negative elasticities and therefore is opposed to the standard theory. They conclude that this is consistent with a target earnings model, in which drivers quit work after reaching their target daily income. Also, they argue that this is inconsistent with a standard neoclassical model of labour supply. Again, there are several potential reasons and explanations for the negative sign. Negative elasticities appear due to the fact that taxi drivers face liquidity constraints, since they must earn a certain amount of money each day. The results obtained are calculated on a simple correlation

between logarithmic hours and logarithmic wages. These statistics show negative elasticities that are significantly different from 0, with -0.503, -0.391, and -0.269, which prove the negative correlation. Furthermore, by including weather variables to the regression, which is one of the demand shocks causalities these variables then control for the shifts in labour supply, while the wage elasticities depend substantially on whether or not the driver fixed effects are included in the model. The estimated wage elasticity is -0.411 and is significantly different from zero (Camerer, 1997). Similarly to Camerer, Chou (2000) estimated the labour supply of taxi drivers in Singapore. He also found a significant negative relationship between the hours worked (logarithm) and the wage rate (logarithm), which is estimated as the ratio of daily income to daily hours. From that he deduced that drivers make decisions regarding the income target in a short-term horizon, meaning that on profitable days they quit earlier, while on days less profitable they work longer. This implies that, when a worker is in a position to substitute labour and leisure intertemporally across days, he should work longer on those profitable days. An econometric problem that arises in the studies conducted by Camerer and Chou respectively and has been noticed by these authors, who used the same methods, is the regression of hours on the wage that is being calculated using a reciprocal of hours, which divides the bias so that in the case of a measurement error there will be a negative bias for the coefficient of the wage (Camerer, 1997). An alternative approach proposed by Farber (2005) is a model of the decision to stop work or continue driving upon the end of the driving shift. Estimates in line with this approach are using new data on New York City cabdrivers and show that the aggregate hours worked on a specific day are the key determinant when deciding whether to quit the working day or not. There are no substantial income effects, and the labour supply behaviour of the taxi drivers is consistent with the standard neoclassical model. After applying Carmer's approach to the new data, Farber estimated the negative labour supply again. A conclusion that can be drawn is that different results are obtained by different econometric and conceptual frameworks. However, Farber (2005) went a step further and interviewed the New York City taxi drivers to find out about their decisions to quit work earlier. The interviews revealed that only a few of them behave as target earners and stop working only when they are tired, which is equivalent to quitting because the marginal utility of leisure increased to the point at which the optimum of quitting work has been achieved. Nevertheless, another assumption might be that they behave differently than they have reported, so that there still is an open question about the real behaviour of workers

that are in a position to choose their working hours and set targets on when to quit work and how much daily income to bring home. (Farber, 2005) Doran et al. (2010) also introduced a set of panel data of New York City taxi drivers. The drivers experienced permanent increases in their real wages, i.e. their total revenue per hour increased, which tells us that the demand for taxis is inelastic. After removing the data on the taxi drivers who lease their cars, the analysis followed with 19,134 observations (inspections) covering labour supply in the timeframe spanning from 1995 to 2005. The results of this study demonstrated that the labour supply elasticity is -0.23, implying that the income effects dominate over the substitution effects in the long-run labour supply. This is the chosen estimate of the drivers' uncompensated wage-elasticity of labour supply and it is precisely estimated. The results imply that the uncompensated labour supply elasticity for taxi drivers is negative and small. Additionally, Farber et al. (2005) revised Camerer's data and found that whenever the income target has an important influence on a driver's decision to quit working, even a driver who is regarded as rational when it comes to income, it may have a negative wage elasticity of hours (as Camerer et al. discovered). In Farber's model, the stopping decisions of some drivers, on some days, will be more influenced by their income targets, in which case their wage elasticities will tend to be negative, while the decisions of other drivers on other days will be more influenced by their hour targets, in which case their wage elasticities will be close to zero. Thus, in accordance with Camerer et al. (1997), Farber concluded that the probability to stop is related to the hours worked, but not to income with a negative aggregate wage elasticity of hours.

In the literature, there exist different opinions and findings for various occupations across different time periods in terms of the slope and sign of labour supply elasticities. Berg (1961) analysed the early years' behaviour of African village workers that earned their income individually and found that the labour supply is inversely related to the rate of wage, which he called backward sloping labour supply functions. Moreover, this means that an increase in wage encouraged only few men to provide labour supply and at the same time to shorten their hours of work. However, in contemporary Africa this does not hold anymore, because a wage increase stimulates many more to emigrate outside their villages and provide labour supply, which simultaneously discourages them to shorten their hours of work. Nevertheless, the assumptions that have been taken into account for the negative sign of labour supply elasticities are that the decision of an African village worker to provide labour supply depends

on his preferences to earn money instead of consume leisure in the village. Another assumption is the effort-price of income earned in the village compared to the amount when he emigrates outside his village. Thus, the worker has very rigid income goals, by which he needs a certain amount to cover basic expenses and purchase very simple things. This is mainly due to sociological reasons and because the level of wants and the need for money income was restricted, so that the subsistence sector responded slowly to the wage rises in the exchange sector. This relationship was evident in the early years, when migrants were unwilling to work above their needs, and whose elasticity of demand for income, once their target income was achieved, approached zero for everything except “leisure”. It is important to determine the sign of labour supply elasticity in order to plan future employment, as well as unemployment under changing policies, and to create adequate policies on working hours and retirement. The elasticity of labour supply with respect to the wage rate plays a critical role in many economic policy analyses. In addition, variable construction solely from raw data can play an important role, along with the method applied for estimation, which both have an impact on the estimates of the model parameters, and finally on the estimated labour supply elasticity. Oettinger (1999) measured the labour supply elasticities of stadium vendors using game attendances as an instrument for earnings, where positive wage elasticity was estimated between 0.55-0.65, which is in line with intertemporal substitution. Fehr and Goette (2007) performed a study on Swiss bicycle messengers and found that their behaviour is consistent with reference-dependent preferences, meaning that when wages are temporarily high, the messengers supply more labour putting less effort into the work. The authors also tested a subset of the sample of messengers for loss aversion, showing that only loss-averse individuals exhibit a negative response to wage increases, favouring the model with reference-dependent preferences. A very interesting study was performed by Giné et al., (2007) in which 279 Indian boat-owners were tested for daily labour supply responses to temporary earnings increases. The study is interesting because it focused on data from a developing country in a similar manner the author of this study will do in order to understand the behaviour of workers in a developing country for the purpose of contributing to future policy creation. The study implies that short-term income effects are relevant for determining labour supply, because the higher the recent earnings, the higher the probability that the target income will be more easily achieved and that the labour supply will decrease. The estimates provide evidence of reference-dependent preference (earning targeting) in which boat-owners

supply labour depending on expected earnings, as well as on recent earnings. Intertemporal elasticities are positive and range between 0.57 and 0.61. The results tell us that a 10% increase in expected earnings on the day in question lead to a 6% increase of the probability to work on that day, and a 2.5% increase in boat-owner's recent earnings for the week in question. What can be inferred from the study is that Indian boat-owners have reference-dependent preferences in estimating intertemporal elasticities and take recent earnings and expected earnings into account in their daily labour supply decisions.

Thus far, there is no consensus in the literature on the sign and value of elasticity that should only be used in the economic policy creation. The sign is unclear because the substitution effect can both be positive or negative depending on various factors, while the income effect can be negative due to the fact that a higher income leads to less work and more leisure, which in turn depends on the income target and needs of a worker or a household. Also, depending on the sign of elasticity, we can draw a conclusion about the pattern that entrepreneurs tend to follow in terms of working hours in their firms. Namely, in the case of positive elasticity, entrepreneurs chase profits and only have profit maximisation in mind, which is in favour of the intertemporal labour substitution hypothesis. On the other side, negative elasticity indicates the opposite, meaning that entrepreneurs have daily income targets which influence the working hours of their firms. However, there are different estimation strategies, which may lead to different results, but we will follow the approach that Camerer used in his study and look for the elasticity sign in order to examine the behaviour of Bosnian and Herzegovinian entrepreneurs in terms of income and working hours.

Chapter 3

Theoretical Considerations: Intertemporal Labour Supply

Along with the dynamic model of labour supply, we provide the theoretical considerations of intertemporal labour supply, which explains the substitution of the consumption of goods and leisure over time (intertemporally).

3.1. Dynamic Model

Individuals do not make decisions on whether to work or not only once in their lifetime, which is why the static model of labour supply is not useful for this study. The statistics for developed countries show that large numbers of men and women change their working status quite frequently during a month or a year, which confirms the dynamic nature of the labour market. The static model shows individuals choosing between (not) working at a given wage rate. If the labour market were perfectly competitive, then the wage would have been equal to the value of the contribution to the productive process of work. This means that the static model could represent the dynamic nature of the labour market when workers would have been paid a fixed wage rate during their entire working lifetime.

Gosling, Johnson, McCrae and Paull (1997) demonstrated on the example of the UK labour market how wages can vary within a job position, and between jobs, meaning that labour supply may depend not just on the immediate wage which an individual can earn upon entering work, but on their expectation of future wage changes.

Based on the standard theory of Lucas and Rapping (1969), individuals change their preferences over present and future consumption of goods and leisure. As Robert E. Hall already stated, they have endowments of time available in the present and future, which is valued by the wage rate. Also, consumers hold some wealth which they use for consumption of goods at given price levels; or, if they do not possess enough wealth for consumption, then they borrow at given real interest rates.

The basic representation of the structural model shows individual preference over hours of work (w_t) under the assumption of utility maximisation (U_t) at a point in time (t).

Yet, individuals maximize the utility function over consumption and leisure at time t . The traditional approach to labour supply arises out of the idea that each of us has only two possible uses of time: labour and leisure, where each individual selects the combination of hours of work and leisure that maximizes his or her level of satisfaction (utility). This function shows the utility of an individual i over his remaining lifetime t .

$$U_{it} = \sum_{t=1}^T (C_{it}, L_{it}, t) \quad (3.1)$$

The given utility function shows the interchange of leisure and consumption for the individual; (C_i, L_i) .

We suppose that each individual during his lifetime wants to consume the greatest possible quantity of goods and leisure, for which the individual needs an amount of income that may be derived from the wage he earned in the labour market or outside the labour market. The dynamic model also assumes that individuals have an opportunity to save with the real rate of interest r_t . For each period, the endowment of time is normalized to 1. According to the Neoclassical Model of Labor Supply each individual tries to reach the highest possible level of utility, but the choice between Y and L is limited by time constraint and goods constraint. Thus, the budget and time constraints of the individual take the form in which the time constraint is given by: $h + l = t$, where: h = hours of work, l = hours of leisure, t = total time available.

The budget constraint is given by: $wh = py$, where: w = wage rate, h = hours of work, p = price index for real income, y = real income. Therefore, these two equations must be satisfied:

$$h+l = t \quad (3.2)$$

$$py=wh \quad (3.3)$$

Rewriting the equation (3.2) as: $h = t-l$, and substituting this into the equation (3.3) results in the following:

$$py=wt-wl \Rightarrow py=w(t-l) \quad (3.4)$$

These constraints can be also formulated as: $C \leq wh + A$

This indicates that consumption has to be equal or less than the income generated from the wage earned multiplied by the hours worked plus other assets containing all other income. A denotes all the assets an individual earns inside and outside the labour market. The dynamic model captures also the opportunity of an individual to save with a real interest rate r_t , which denotes the real rate of interest between $t-1$ and t . For each time period, the endowment of time is normalized to 1 for simplification reasons. Thus, the hours worked during a time period t are equal to $(1 - L_t)$, where A_t denotes an individual's assets at time t , and B_t represents the income outside the labour market earned from saving interest rates.

Thus, a consumer's assets (wealth) can be mathematically expressed as:

$$A_t = (1 + r_t)A_{t-1} + B_t + w_t(1 - L_t) - C_t \quad \forall t \geq 1 \quad (3.5)$$

This equation shows that at time t , any income change in $A_t - A_{t-1}$ is due to the changes in labour income $w_t(1 - L_t)$, savings income $r_t A_{t-1}$, as well as other income earned B_t . The consumer tends to maximize his intertemporal utility in line with the budget constraint that is mentioned above.

3.2. Optimal Solution

With regard to the budget constraints, a consumer intends to maximize the utility function in each time period. We take a Lagrangian multiplier and express the equation (3.5) as:

$$L = \sum_{t=1}^T U(C_t, L_t, t) - \sum_{t=1}^T v_t [A_t - (1 + r_t)A_{t-1} - B_t - w_t(1 - L_t) + C_t]$$

In order to first get an order condition (FOC), we take derivatives of the Lagrangian with respect to C_t , L_t , and A_t in order to obtain the following:

$$v_t = (1 + r_{t+1}) v_{t+1} \quad (3.6)$$

$$U_t(C_t, L_t, t) \text{ and } U_L(C_t, L_t, t)v_t w_t \quad (3.7)$$

We get $\frac{U_L}{U_C}=w_t$, which is the ratio of marginal rate of substitution and the current wage rate in the time period t .

The optimal allocation of consumption and leisure:

$$C_t = C(w_t, v_t, t) \text{ and } L_t = L(w_t, v_t, t) \quad (3.8)$$

The equation (3.8) of marginal utility of wealth defines the Frisch demand for period t , from which we can derive the elasticity of labour supply, which is also known as intertemporal substitution elasticity, or regular elasticity of wage function that has the form:

$$h(w_t, v_t, t)=1-L(w_t, v_t, t) \quad (3.9)$$

If we show the equation (3.6) in logarithmic form, we get as follows:

$$\ln v_t = -\sum_{t=1}^T \ln(1 + r_t) + \ln v_0 \quad (3.10)$$

The equation (3.10) is a very important equation in estimating the intertemporal labour supply equation, which shows the logarithm v_t divided into individual fixed effects expressed as a $\ln v_0$ and age effect denoted as $-\sum_{t=1}^T \ln(1 + r_t)$.

3.3. Estimates of the Labour Supply Elasticity

The relationship between the hours worked (h) and the hourly wage (w) in time t , can be expressed by the labour supply equation:

$$\ln h = \alpha_w \ln w + \alpha_R \ln R + x\theta + \varepsilon \quad (3.11)$$

In this equation, h is the number of hours worked, w is the hourly wage for a given period, R is the non-working income, apart from the current wage, x is the vector of characterizing the individual, and ε as the error term describes an individual's unobserved heterogeneity. The coefficients α_w , α_R , and θ are parameters that have to be estimated.

Going back to the equation in 3.10, which we assume to be constant, can be described as an age effect $\sum_{t=1}^T \ln(1 + r_t)$. Assuming that r_t is constant, we can replace it by p_t . However, in order to get the intertemporal elasticity of substitution, we need to take the Marginal utility of wealth, v_t , which is considered as exogenous and independent on the current wage. Hence, $\ln v_0 + p_t$ can be replaced by $\ln R$ in (3.10). This is a way to obtain the Frisch elasticity of labour supply and, by taking the first differences from the equation (3.10), we can eliminate the fixed effects $\ln v_0$ and determine the coefficient of intertemporal substitution of labour supply α_w , as well as obtain an estimation of the intertemporal elasticity of substitution with the following form:

$$\Delta \ln h_t = p + \Delta x_t \theta + \alpha_w \Delta \ln w_t + \Delta \varepsilon_t$$

Therefore, with the framework for the intertemporal labour supply model which explains intratemporal substitution of the consumption of goods and leisure, we can now proceed to verifying our hypotheses based on the data collected by the means of own field survey.

Chapter 4

Small and Medium Enterprise Sector in Bosnia and Herzegovina

In this section, we will describe the actual situation of the Small and Medium Enterprise (SME) sector in Bosnia and Herzegovina (BiH), and its impact on the overall Bosnian and Herzegovinian economy. First, we will describe the political framework that affects the economic situation in many aspects. Next, we will examine the development of the SME sector during the economic and political transition process Bosnia and Herzegovina is still undergoing, which entails a lot of negative elements that strongly affect the trends of the entire SME sector and the entire ambient for doing business. We will observe the numbers of SMEs in BiH and North-Western BiH, where we have collected the data for our further estimation in order to examine how those numbers affect the overall economic development and how Bosnian and Herzegovinian current business sector is affected by the inherited habits from its Yugoslav socialist past. This Chapter relies on the data provided by the Institute for Statistics of the Federation of Bosnia and Herzegovina¹, Doing Business data for BiH², BiH Directorate for Economic Planning³, Database of Economic Indicators of the BiH entity of Republika Srpska (RS), the 2014-2020 Strategic Development Plan of the Una-Sana Canton⁴, as well as the data extracted from the survey conducted between 2011 and 2013 in Bosnia and Herzegovina.

4.1. Overview of the Political and Macroeconomic Situation in BiH

Bosnia and Herzegovina has a tradition of an industrial-based economy, which was developed before the war conflict in 1992, when the country split from the former

¹<http://www.fzs.ba>

²<http://www.doingbusiness.org>

³<http://www.dep.gov.ba>

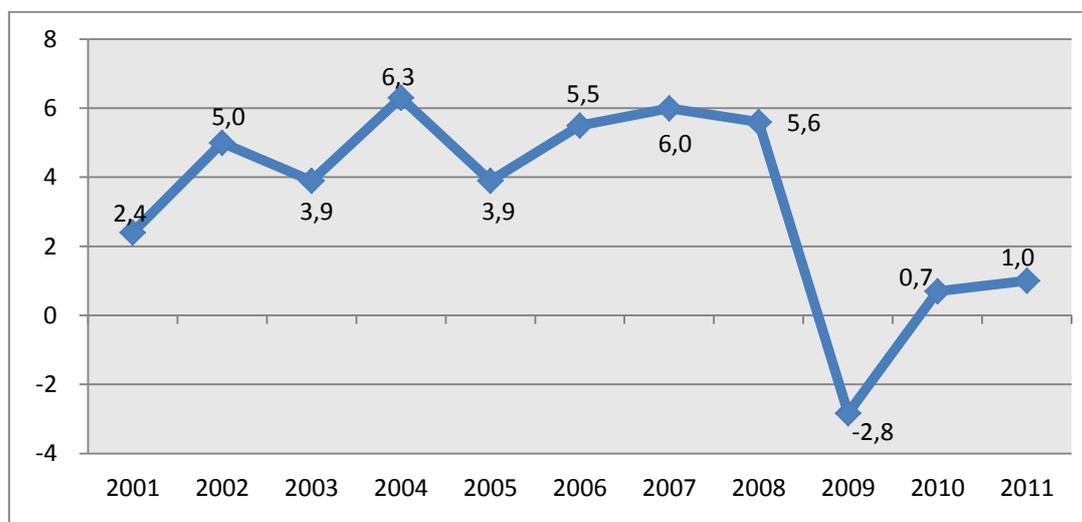
⁴<http://www.rausk.ba>

Yugoslavia. The war conflict caused a huge devastation of infrastructure, followed by the beginning of the transition process from a planned to a market-oriented economy. All this has considerably affected the entire system of the country, which is undergoing a democratic, economic and social transition even today, more than 20 years after separating from former Yugoslavia.

Even though most of the former Yugoslav nations felt the effects of the last global economic crisis, in Bosnia and Herzegovina those effects were much stronger, due to the underlying economic and political conditions. Hence, the negative macroeconomic conditions, accompanied by the economic and political problems, are widely caused by the signing of the Dayton Peace Agreement, which ensured the end of the war in the Western Balkans in 1995, but which divided Bosnia and Herzegovina into two entities: the Federation of Bosnia and Herzegovina and Republika Srpska, along with the third region of Brcko District. The complexity of the state structure lies also in the fact that the Federation of Bosnia and Herzegovina comprises of 10 cantons with separate cantonal governments and constitutions, with municipalities having their own local governments. Therefore, such a complicated and extensive legal and political framework with a decentralized government results often in overlapping competences, which considerably slow down policy reforms, which in turn negatively affects foreign investments and delay growth in each sector of economy. From 1996 to 1999, in the period immediately following the restoration of peace, the country was in an advanced stage of a post-socialist transition process, left with a legacy of war damage and ethnic conflicts, but still starting to recover.⁵ After the slight recovery in the early stages after the war, in the period between 2000-2001, the economy slowed down, after which the GDP grew on average around 5% until 2009.

⁵ <http://www.giz.de>

Figure 4.1 GDP BiH Real Growth in %, (y/y)

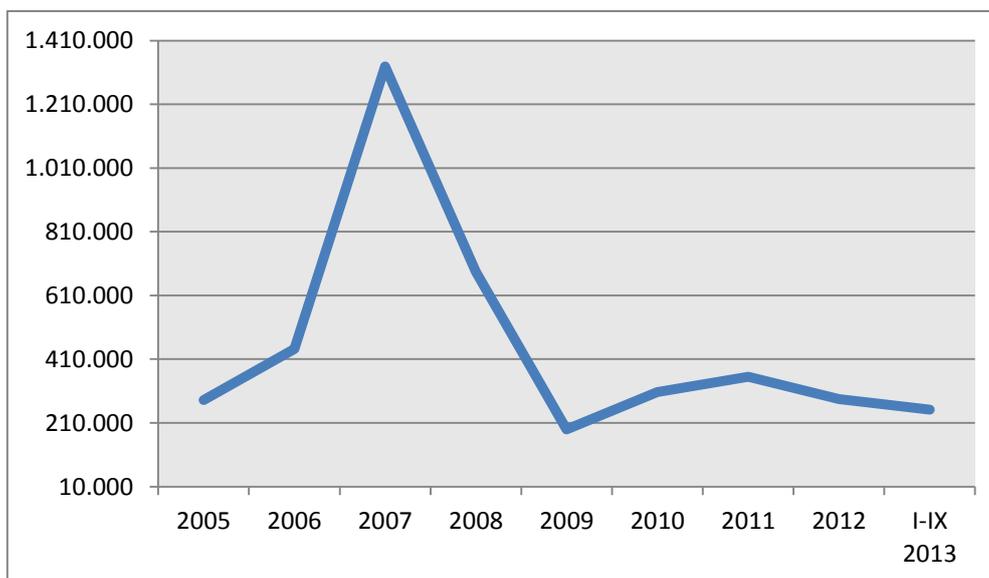


Source: Database of Economic Indicators of Republika Srpska

However, the World Bank classified Bosnia and Herzegovina as an upper-middle income country and as a country at the average level of industrialization.⁶ As the global economic crisis started to influence Bosnian and Herzegovinian economy, the country experienced a decline in GDP of 2.8% in 2009, which grew by 1% from 2010. Up until 2011, Bosnian and Herzegovinian economy showed a slight recovery, after which the growth stopped due to the Eurozone crisis which had a negative effect on Bosnian and Herzegovinian export. Those negative effects mainly influenced the semi-processed goods from the metal industry, as well as capital inflows to BiH. Moreover, the BiH Directorate for Economic Planning recorded a decline in foreign direct investments (FDIs) of 42.5% in 2011, followed by small declines in the remittances that Bosnia and Herzegovina highly depends on. The banking sector in BiH is quite liquid and capitalized, even though there is an increase in non-performing bank loans. Foreign banks, primarily from Austria and Italy, account for over 90 % of total assets in the BiH financial system. The national currency – convertible mark (BAM) – was introduced in 1998, and was fixed to the Euro in order to increase the confidence in the currency and the entire banking sector, hence, becoming the key anchor for monetary policy. Inflation remains low: it was around 0.8% in 2013, reflecting the dependence on domestic demand (European Bank for Reconstructions and Development, 2014).

⁶ <http://www.ebrd.com>

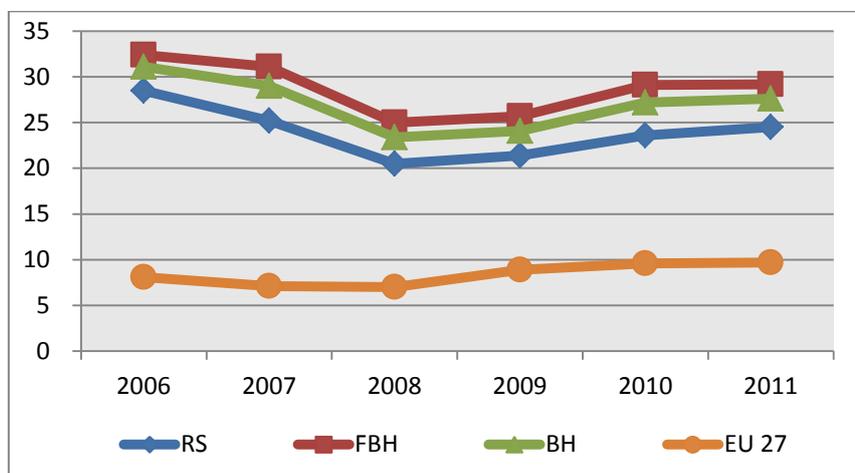
Figure 4.2: FDI Inflows in Bosnia and Herzegovina, Annual; in 000 €



Source: Central Bank of BiH, First nine months of 2013; preliminary data with estimated reinvested earnings

Even though the private sector experiences growth, the overall business climate and the political instability strongly affect the decline in foreign investments. Government spending, at roughly 50% of GDP, remains high because of extensive bureaucracy. The privatization of state-owned enterprises has been slow and unsuccessful for many companies, leading to high unemployment which has become a serious macroeconomic issue. The unemployment rate declined from over 30% to 20% in 2009, but has again been on the rise ever since.

Figure 4.3: Unemployment Rate, International Labour Organisation (ILO) (%)



Source: Database of Economic Indicators of Republika Srpska

In 2006, the value-added tax was introduced quite successfully, thus becoming an anticipated source of government revenue that assisted in combating the grey market. Additionally, the question of statistical data at the national level remains an issue, with a lot of economic data missing. All things considered, the business climate in Bosnia and Herzegovina is quite problematic, lagging behind other economies in South-East Europe (SEE). According to the World Bank's 2014 Doing Business Report, Bosnia and Herzegovina ranked 131st out of 189 economies, reflecting its political and economic problems. The performance shows fragile indicators for starting a business, dealing with construction permits and obtaining electricity. Also, according to Transparency International, there is a lack of transparency and accountability due to a complex legal framework, and the Business Environment and Enterprise Performance Survey (BEEPS IV) showed that, out of 15 possible obstacles, more than 25% of the enterprises surveyed identified political instability as a serious problem affecting their business, along with the competition from the informal sector and access to finance. The table below (Table 1.) is a comparative analysis of the conditions for business establishment in the Western Balkan Countries, provided by the World Bank and the International Finance Corporation (IFC) (2010). Based on the given numbers, the World Bank issued recommendations and guidelines to policy-makers in BiH for reducing the numbers in order to eliminate external obstacles and create a better environment for doing business, which we incorporated as the final section of this chapter as policy recommendations for improvement of the overall business environment in BiH. For general economic indicators see Appendix A, Table 1A – Main Economic Indicators, Comparative Review of the Entity Level and the National Level; and Table 2A – Employment by Groups of Sections of Economic Activities.

Table 4.1: Conditions for Doing Business; Comparison

Indicator	OECD	Europe & Central Asia	BiH	Serbia	Kosovo
Procedures (numbers)	5	5	11	6	6
Time (days)	11.1	12.8	37	11.5	30
Cost (% of income per capita)	3.6	6.7	14.9	7.2	22.1

Source: Doing Business, Measuring Business Regulations, World Bank, 2014

4.2. Small and Medium Enterprise Sector

Bosnia and Herzegovina has a tradition of an industrial-based economy, which has been developed during the period of planning-based economy as part of the former Yugoslavia, in which state-owned manufacturing enterprises were dominant. Hence, after a certain period of transition from a planned economy to a market-based economy, SMEs started to play a more important role in the process of wealth creation, economic growth, employment and the overall economic development. Therefore, Bosnia and Herzegovina is a typical example of a post-socialist transition country that is still developing the SME sector. For a long time, there has been no consensus or clear strategy regarding the vision and support of the country's legislation towards the strengthening of the SME sector. Nevertheless, the importance of the SME sector has been recognized by the politicians and economists. Through different sources of access to finance, grants and the support of foreign institutions, the SME sector has started to play a more important role. (Hasić, 2006).

The term SME covers a heterogeneous group of businesses in a developing economy, entailing everything from small craft shops with a single employee to big companies that export their goods internationally (Reuber and Fischer, 2003). According to the EU, an SME is defined as a company employing fewer than 250 employees and is independent from large companies, having an annual turnover below €50 million and an annual balance sheet of less than €43 million.

Table 4.2: Main Factors for the Classification of SMEs

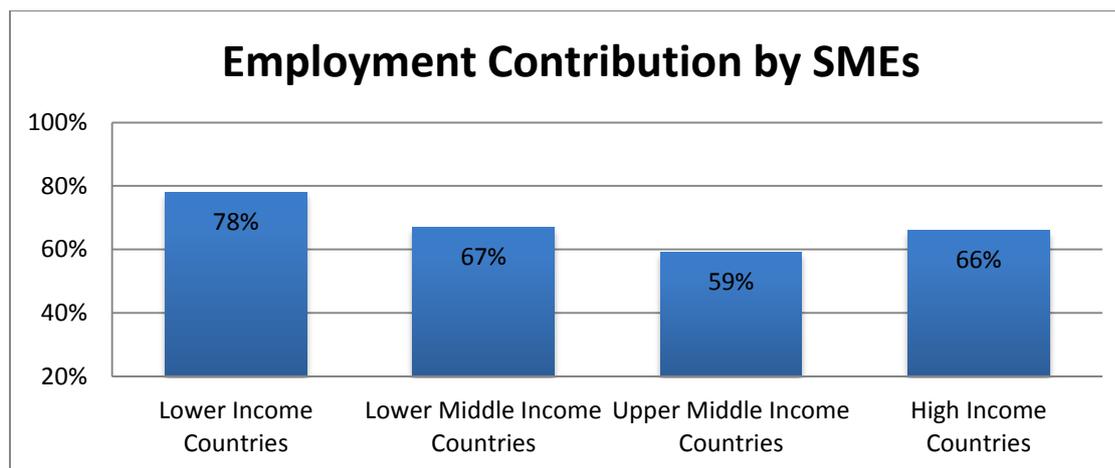
Company category	Employees	Turnover	or	Balance sheet
Medium-sized	< 250	≤ € 50 m		≤ € 43 m
Small	< 50	≤ € 10 m		≤ € 10 m
Micro	< 10	≤ € 2 m		≤ € 2 m

Source: European Commission

The SME sector is the backbone of developed countries, but even though the sector is less developed in low-income countries, it is the main accelerator of economic growth and development (Dalberg, 2011). The Organisation for Economic Co-operation and

Development (OECD) reports that more than 95% of enterprises in the OECD area are SMEs. These enterprises account for almost 60% of private sector employment, make a large contribution to innovation, and support regional development and social cohesion. Also, in low-income countries, the SME sector makes a critical contribution to GDP and employment, as shown below.

Figure 4.4: Employment Contribution by SMEs



Source: BiH Directorate for Economic Planning

Researchers and practitioners agree that SMEs are crucial contributors to job creation and economic growth in both high- and low-income countries. In Bosnia and Herzegovina, the term SME is not strictly defined, which is why we will use the European Commission's definition, as presented in Table 2. Accordingly, the SME sector in BiH covers 99% of enterprises with over 90% being micro enterprises, thus playing a central role in global economy. Therefore, this sector has potential to become the most important accelerator of Bosnian and Herzegovinian economy, which represents the basis for entrepreneurial skills and employment. In the 28 countries of the recently enlarged European Union, around 23 million SMEs provide around 75 million jobs.⁷ Moreover, SMEs are the primary source of added value and the creation of wealth and growth in Europe. This is the main reason why the European Commission, the United States United States Agency for International Development, and other international funds and institutions provide support programmes that enhance access to finance for: SMEs, projects that foster employment, business innovations, start-up programs and private sector growth in general in order to popularize entrepreneurship

⁷ <http://ec.europa.eu>

among Bosnian and Herzegovinian citizens. However, the source of problems are the development policies, legal frameworks and a lack of coordinated institutional support at all country levels, that if solved would result in SMEs being a source of development with job creation, extension to foreign markets, added value and finally to poverty reduction in the country (2009-2011 SME Development Strategy BiH). Therefore, the current situation and existing policies in the SME sector in BiH, compared with the five strategic areas with which the European Commission operates, suggest the following goals in the mid-term future in this sector:

- strengthening entrepreneurial thinking;
- encouraging people to become entrepreneurs;
- supporting entrepreneurs to become more competitive;
- improving financial flows to enterprises that operate successfully financially;
- creating a better regulatory and administrative environment for SMEs.

4.2.1. Statistical Data on SMEs in Bosnia and Herzegovina

Even though data on SMEs are quite scarce and the government has provided no official definition of SMEs, we will mainly use the data from the 2009-2011 Small and Medium-Sized Enterprise Development Strategy in Bosnia and Herzegovina and from the OECD, et al. (2012). According to the data, among the number of legal entities in BiH the majority is micro enterprise, with up to 10 employees accounting for 93.6% of all SMEs, the majority of them being in the trade sector, whereas exports are usually of low added value. Additionally, after the Croatian accession to the EU, some industries have more difficulties following the loss of a major trading partner within the Central European Free Trade Association (CEFTA) region. Most of the enterprises are family-run businesses with low labour division, and enterprise performance is constrained by a lack of adequate management processes, as well as efficient production and comprehensive distributions and marketing channels.⁸ In BiH, grey economy should not be neglected since it amounts to 20-50%, and, based on the World Bank estimates, it covers around 36% of the country's total economy.

⁸ European Bank for Reconstruction and Development, "Strategy for BiH", 2014

Taking a look at the general SME profile in BiH, we see that the wholesale and retail sector comprise 40% of all SMEs, followed by the catering sector which comes in second with around 13%. These sectors face competition and a low profit margin, and therefore many of them do not report all the hours, wages and income as they really are. The problem can be tackled by eliminating the above stated barriers and shortcomings and therefore creating incentives for an efficient usage of resources. Resources such as energy, agriculture, forests, and tourism are not efficiently used, and if this were to change, the SME sector profile would become more diverse by an enhancement of the manufacturing sector (2009-2011 SME Development Strategy for BiH). In the following table, there is a national profile of SMEs in BiH:

Table 4.3: National Profile of SMEs in Bosnia and Herzegovina

Indicator	Specification
SME size	161,295
SME weight	99.56% in Republika Srpska 99.40% in the Federation of Bosnia and Herzegovina
SME involvement per sector	<ol style="list-style-type: none"> 1. Wholesale and retail sector 47,213 SMEs (40.04%) 2. Catering industry (hotels and restaurants) 15,928 SMEs (13.51%) 3. Manufacturing 15,368 SMEs (13.03%) 4. Transport, storage and communication 10,916 SMEs (9.26%) 5. Retail estate, rental and similar services 8,813 SMEs (7.47%) 6. Construction 5,922 SMEs (5.02%)
SME involvement per sector	<ol style="list-style-type: none"> 1. Wholesale and Retail sector 97.67% 2. Catering industry (hotels and restaurants) 99.54% 3. Manufacturing 96.13% 4. Transport, storage and communication 98.31% 5. Retail estate, rental and similar services 92.23% 6. Construction 96.88%
SME location	In the Federation of BiH, the highest

	concentration is in the Sarajevo area In Republika Srpska, the highest concentration of SMEs is in Banja Luka (43.27%)
SME innovation process	SMEs introducing innovation as percentage of all SMEs a) Product 28.60% b) Process 37.38% c) Marketing 30.18% d) Organizational 28.38%
SME distribution by size	1-9 employees 151,107 SMEs or 93.6% 10-49 employees 8,712 SMEs or 5.5% 50-249 employees = 1,476 or 0.9%
SME – Total employment	BiH (National level) 48.83% of total employment FBiH (Entity level/Regional) 33.41% of total employment RS (Entity level/Regional) 73.43% of total employment
SMEs R&D expenditure	The figures on R&D expenditure in total are not available. Innovative small enterprises are financing R&D activities in the amount of 4.01% of their annual income. Innovative medium enterprises are financing R&D activities in the amount of 4.35% of their annual income.

Source: National and Entity strategic documents

However, the private sector has a very low share of the overall economy in BiH, comprising only 45% of GDP, and the Index of SME Development is very low (Dzafic et al., 2011). Changing the environment for doing business – such as tax laws – could lead to changes in people’s behaviour, meaning that they would not work more, but would simply engage in a more taxable market labour and would produce more per worked hours (Prescot, 2004).

Table 4.1: SMEs by Sector

	Sector	Number of SMEs	% of SME per sector
Production	Agriculture, hunting and forestry	3,581	3.04
	Fishing	85	0.07
	Mining	286	0.24
	Manufacturing	15,368	13.03
	Electricity, gas & water supply	454	0.39
Services	Construction	5,922	5.02
	Trade, certain repair motors	47,213	40.04
	Catering	15,928	13.51
	Transport, storage, communication	10,916	9.26
	Financial intermediation	729	0.62
Non-productive	Real estate, renting, services	8,813	7.47
	Public administration; defence	4,538	3.85
	Education	91	0.08
	Health and social welfare	393	0.33
	Other social & personal service	2,424	2.06
	Extra-territorial organizations and bodies	3	0.00
	Other	1,162	0.99
	TOTAL	117,906	100.00

Source: Development Strategy of SMEs for BiH, 2009-2011

Table 4.2: Number of SMEs in BiH

Number of Employees	Total number of legal entities	% of the total number of SMEs
1-9	151,107	93.6%
10-49	8 712	5.5%
49-249	1 476	0.9%
TOTAL	161,295	100%

Source: Development Strategy of SMEs for BiH, 2009-2011

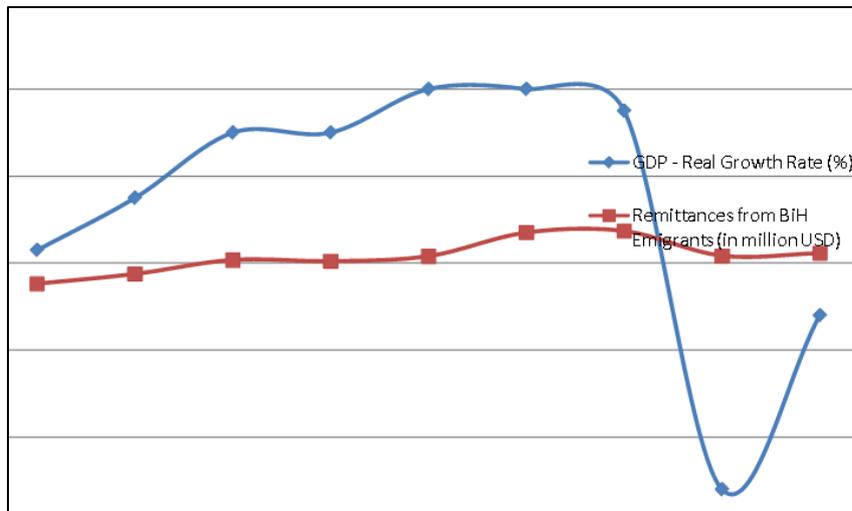
Hence, out of 161,295 legal entities, the OECD estimates that there are around 26,000 companies registered in BiH, with 97% of them being micro enterprises. Based on the approximation of the SME study of EDA (Development Agency Banja Luka), there are on average 8.3 SMEs per 1000 capita in Bosnia and Herzegovina, proving to be far behind the EU average of 40 SMEs per capita. Additionally, the analysis estimates that in the period between 2000 and 2005, the number of start-ups has decreased by 4-7% a year with a 15% decline in 2009, which is mostly because of the spillover effects of the recent economic crisis. Nevertheless, the main problems that are behind the slow growth are the following: fragmented ethnic groups in politics, institutional problems and uncoordinated actions between the two entities within the country. Also, the reasons for the indicators not being very bright are to some extent due to the unfavourable business environment, along with the already highlighted political instability, tax rates, limitations in accessing finance as the main obstacles to doing business. Other reasons why the indicators do not fully replicate the real economic situation in BiH and the SME sector are also to be found in insufficient adequate incentive measures, as well as the large portion of the informal sector. On top of that, SMEs have not been recognized from the outset in the BiH Development Strategy as playing a main role in acquiring economic growth. The reason why is mainly the traditional responsibility of the state for creating employment, and wealth creation through large state-owned enterprises. Since the privatization process negatively influenced the development of the SME sector, and the economic and legislative policies were established inconsistently on different levels of institutional bodies, it was difficult and very time consuming to put the SME sector in the forefront as the main development tool.

4.2.2. Impact of Remittances on the BiH Economy and Entrepreneurship

Another very important aspect that was also a consequence of the 1990s war, was the migration outflow from Bosnia and Herzegovina. The dispersed Bosnian and Herzegovinian population constitutes a large portion of the already existing Bosnian and Herzegovinian Diaspora, which, according to the World Bank estimates, amounts to 1,461 million people.⁹ This huge number of Bosnian and Herzegovinian emigrants positioned the country as one of the top remittance-receiving countries in the world, being the fifteenth country in terms of receiving remittances as a percentage of GDP with 13% according to The World Bank estimation in 2009. The estimation of the inflows of international remittances according the World Network of BiH Diaspora is 6 billion BAM, which are sent through the banking system (2.4 billion BAM), mainly as cash transfers through informal channels (around 3.6 billion BAM). Comparing these numbers to the fact that Bosnia and Herzegovina covers less than 50% of exports with imports (Exports averaged 852,80 million BAM from 2011 until 2014, while imports averaged 46,59 million BAM), while the FDI is six times lower than the level of remittances and the official development assistance (ODA) is three times lower than remittances, this proves that international remittances play a significant role in the overall economy of BiH. There are no further analyses of the use of remittances in Bosnia and Herzegovina, but some evidence suggests that they are mainly used on current consumption (Oruc, 2011). Remittances represent an important source of income for a large number of households and have a strong impact on the overall economic situation in Bosnia and Herzegovina. However, remittances are not channelled towards entrepreneurship in the amount at which they could generate a positive impact on the SME sector in the long term.

⁹ Migration and Remittances Factbook, 2011

Figure 4.5: GDP and Remittances for Bosnia and Herzegovina (2009)



Source: World Bank

In addition to this, remittances do help to stabilize the BiH economy, but in the long run they can have two opposing effects on the labour market in the country. Due to the fact that remittances are regarded as “reservation wage” by the receiving households, the increase of received remittances expects to reduce the labour supply (Killingworth, 1983). Also, they add to a decrease of liquidity constraint for investments by households and therefore encourage entrepreneurial activities, which lead to an increase in employment. Hence, remittances help Bosnia and Herzegovina maintain its economic stability, but, considering the fact that they are mainly used for consumptive purposes, we can say that their multiplier and macroeconomic effects are not as significant as they would have been if remittances were saved or invested. From a social aspect, remittances can cause psychological dependence, thus causing people to feel less obliged to work (Trokic, 2011). All of this brings us to the conclusion that remittances play an important role in estimating the labour supply and behaviour of Bosnian and Herzegovinian entrepreneurs, and therefore should not be neglected in policy creation.

4.2.3. North-Western Bosnia and Herzegovina (The Una- Sana Canton; Regional Analysis)

The Una-Sana Canton (USC) is one of the ten cantons in the Federation of Bosnia and Herzegovina, consisting of 8 municipalities and 299,343 inhabitants. The Canton lies in the Northwest part of Bosnia and Herzegovina, with a very favourable geographic position, being right on the path of the main corridor to the European Union, the Mediterranean and the Middle East, and right at the border with Croatia. It is only a few kilometres away from one of the most famous National Parks in Europe – the Plitvice Lakes National Park in Croatia – which is visited by more than 1.2 million tourists each year. The holders of the economy in this area are mainly micro enterprises, consisting of up to nine employees. In recent years, a lot of business activities have been reduced and small firms could not survive the economic crisis, which caused long-term consequences in this region. The region has significant reserves of natural minerals, which are the basis for the development of industry and the economy as a whole. In the pre-war period, the metal industry played an important role in the overall structure of the economy of this region. In the last pre-war year, companies from the Una-Sana Canton in this sector made 70 million BAM worth of products, comprising 6.7% of the entire BiH production in metal processing industry while employing 2,200 workers, or 5.6% of total employment in that industry in BiH. Most of the semi-finished products were manufactured for building, machinery and other related industries. Today this sector still plays an important role, even though not as significant as it previously has. Most of the metal processing companies have foreign owners with outputs mainly being exported. A lack of a support system in this sector is one of the reasons for its slower growth than its potential; however, it still shows a positive trend of growth. A similar case is the wood processing industry, which has great potential due to the fact that the region is rich in forests and has a long tradition in the wood processing industry, which could be a strong accelerator of the entire BiH industry if it focuses on achieving a higher level of product finalization. Also, the Canton has contours of business zones in almost all 8 municipalities, but they are not fully competitive and do not provide adequate technical and utility equipment for enterprises. Moreover, agriculture and tourism are the sectors with which this region could make a significant contribution to its overall economy and ensure an increase of the living standard for almost 300,000 of its inhabitants. As was mentioned previously, the Bosnian and

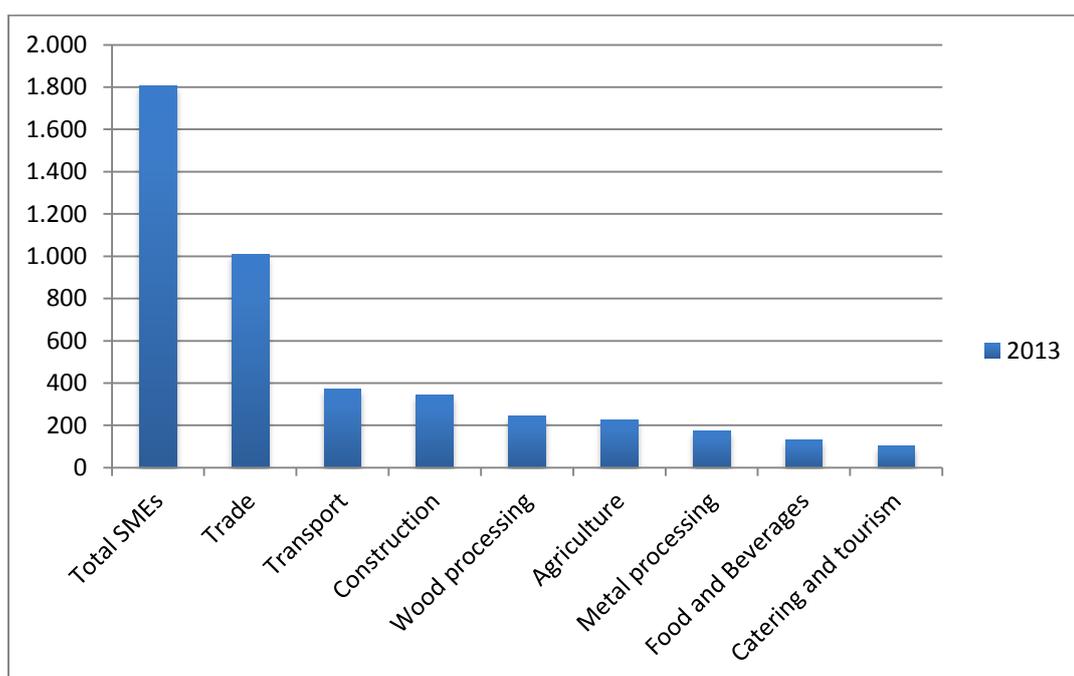
Herzegovinian Diaspora adds to the changing of the overall economic picture of the country, but it is important to mention that, due to its favourable geographic position, this region has had a long tradition of guest workers (the so called “Gastarbeiter”), who usually went to Slovenia, Germany, Switzerland and Austria for seasonal work which enabled them to provide for their families. Due to the war conflicts, the amount of emigrants from this part of Bosnia and Herzegovina has significantly increased, which is why it is now considered a region with the most numerous diaspora that financially supports their families still living in Bosnia and Herzegovina.

Table 4.3: SMEs by Revenue in North-Western BiH

Revenue	Number of registered businesses in the USC
10 million BAM	1,788
10 – 50 million BAM	17
50 – 100 million BAM	1

Source: Development Strategy of the Una-Sana Canton, 2014-2020

Figure 4.6: Number of SMEs per Sectors in the Una-Sana Canton (2013)



Source: SME study by the Development Agency Banja Luka, 2013

The amount of the international remittances and foreign aid the people became used to cannot be neglected, since it widely affects the way people are running their firms and supplying labour.

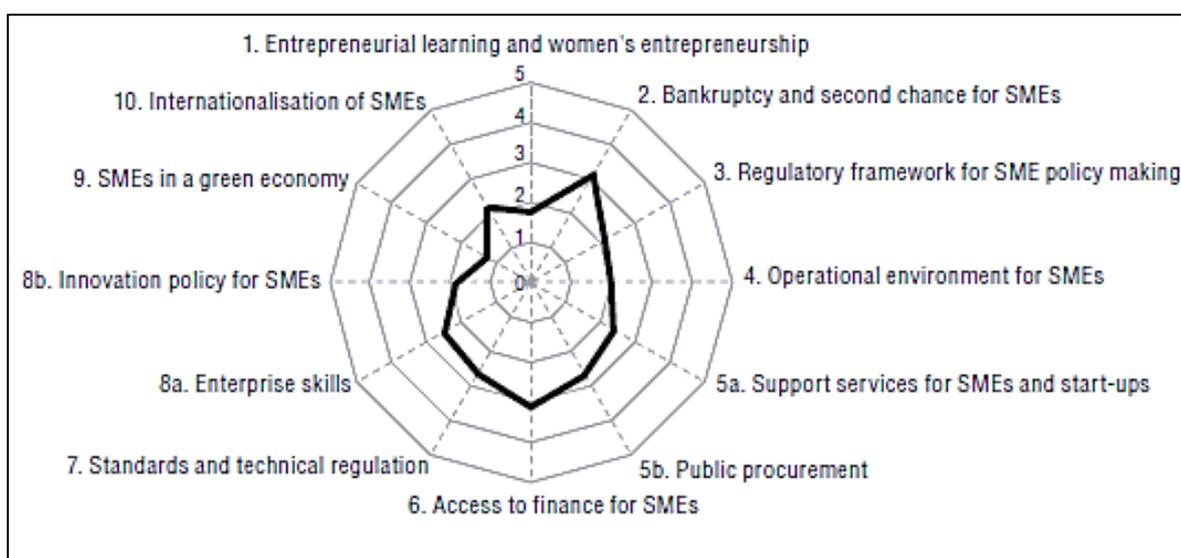
The former state of Yugoslavia permitted the development of entrepreneurial skills to a certain level, but it was still very expensive and not very common in general to run a private firm. Bosnia and Herzegovina is today considered one of the poorest countries in Europe, a country that is still undergoing a painful transition process in which the state support for the SME sector should be much stronger. Also, many firm owners did not manage to survive the new economic system compared to the former one where there were fixed working hours, no competition, and many other factors on which the previous education system did not teach them, thus leaving them with inadequate entrepreneurial skills. Furthermore, the SME sector mainly employs the less educated labour force, while the higher educated workers still prefer to work in the public sector. This might be the reason for a low level of entrepreneurial skills among firm owners, which could be easily changed if the state helped in promoting an entrepreneurial culture and introduced more start-up programs in order to popularize the SME sector. And last but not least, the impact of remittances might be an additional reason why some firm owners do not invest more effort into their businesses: many of them run their business in order to earn extra money and not the money needed to provide for their families. Therefore, there are many factors that affect the current picture of the SME sector in Bosnia and Herzegovina, which has a potential to grow and should play a more important role in the development process and the long-term Bosnian and Herzegovinian economy.

4.3. Business Climate in BiH – Recommendations

The business climate in BiH, based on the data estimates, is lagging behind the other countries in the region. The reason for that is the non-existence of institutional or legislative reforms in place aimed at creating a stimulating environment needed for the development and growth of SMEs, especially in the manufacturing sector that creates more added value. Over the last period of time, some reforms have been implemented to reduce the administrative barriers to starting a business, reducing the regulatory tax burden and making registering property easier. However, BiH still continues to rank very poorly on most indicators of the

quality of business environment. In the latest 2014 World Bank Doing Business Report, BiH ranked 131st out of 185 countries worldwide on the overall ease of doing business, below all countries in the region that are in the process of transition. BiH ranks very poorly in: obtaining construction permits, the ease of starting a business, and obtaining electricity while being on the 88th place out of 144 countries in terms of overall competitiveness on the World Economic Forum's Global Competitiveness. The indicators of quality of the macroeconomic environment for BiH are somewhat below the average of the West Balkan countries, whereas, regarding the indicators of the quality of infrastructure, BiH ranks 143 out of 144 countries. Besides the above stated, other external obstacles for doing business are bureaucracy, the time it takes to implement legal judgments, corruption, lack of financial stimulation/government support for the development of manufacturing enterprises, the time lapse between a trial date being set and judgment being passed, lack of government measures to stimulate employment, quality of the workforce, quality of road networks, social and health insurance payments, registration of real estate, and quality and costs of telecommunications.¹⁰ The picture below illustrates the SME assessment provided by the OECD.

Figure 4.7: SME Assessment for Bosnia and Herzegovina



Source: OECD, et al. (2012), SME Policy Index: Western Balkans and Turkey 2012: Progress in the Implementation of the Small Business Act for Europe

¹⁰ European Bank for Reconstruction and Development, "Strategy for BiH", 2014

Based on the above stated and depicted data, most of the obstacles that represent barriers to SMEs are shortcomings of the current legal framework, which are as follows:

- General business climate (institutional infrastructure and unbalanced institutional support for development of SMEs);
- Legal obstacles (business establishment, issuing permits, ownership protection, taxes, court protection, international exchange rates, labour market, financial obstacles);
- Lack of SMEs involvement in drafting legislation;
- Lack of entrepreneurial culture and business ethics.

Therefore, the main issues in improving the business environment, according to the SME Development Strategy for BiH, are:

- improve the business support environment (legal and financial environment, institutional business support infrastructure);
- stimulate increase of the value added contribution of the SME
- facilitate access to finance for SMEs
- provide incentives and support programs to start-up businesses
- actively promote and facilitate promotion of an entrepreneurial culture and ethics in BH;
- reduce the grey economy.¹¹

For that reason, in order to improve the ambient for doing business, the main target should be to reduce the number of procedures, days and minimum capital for starting a business, which would stimulate new entrants in the SME sector. The number of tax payments should be decreased, as well as export/import days and export/import costs. Furthermore, the number of procedures, days and costs when closing a business should also be reduced. If all the above stated problems were resolved, the results would be replicated by the overall economic indicators, such as:

- Increase of the SME share in the GDP;
- Increase in the number of active SMEs;
- Increased number of jobs created by SMEs;
- Increased SME competitiveness;

¹¹ SME Development Strategy for BiH 2009-2011

- Retraining and vocational training for unskilled unemployed labour force

Therefore, we suggest that business decision-makers should try to eliminate this obstacles in order to create a stimulating business environment in BiH, as has already been done in neighbouring countries. This is important also in relation to the BiH approach to Euro-Atlantic integration. In Bosnia and Herzegovina, entrepreneurship should be promoted in order to raise popularity and entrepreneurial awareness among citizens and especially young people. Also, the strong Bosnian and Herzegovinian diaspora should be integrated into the development process concerning the policies on how to transform remittances into investments.

Another important fact to be considered is that the current educational system does not provide enough competences and practical business skills at all levels, which is an important factor in decreasing the amount of failing SMEs, increasing the number of newly registered SMEs, as well as improving the competitiveness of SMEs dealing with manufacturing. Representative organizations, such as chambers of commerce or business associations, and other international organizations should work together with public institutions that are the main source of external obstacles in order to encourage the institutions to reduce the barriers and obstacles in favour of enhancing the SME sector, especially the manufacturing SMEs, which will automatically attract foreign direct investment into BiH and accelerate economic growth.¹²

¹² SME Development Strategy BiH, 2009-2011

Chapter 5

Empirical Analysis

In the case of Bosnian and Herzegovinian entrepreneurs, we assumed that, due to the background of living in a post-socialist country in which the transition process began more than 20 years ago, the pattern of doing business will show evidence of the daily targeting hypothesis. Moreover, we presumed that Bosnian and Herzegovinian entrepreneurs, based on their background and especially the tradition of the region where the data was collected, will display evidence of working long hours on the days when the wages and revenue are high, and quit early on the days when the opposite is the case. Hence, intertemporal substitution implies that entrepreneurs substitute labour for leisure when wages are temporarily higher and the daily targeting model suggests that entrepreneurs target the income level, which means they will finish their working day after the targeted income level is reached. Thus, this Chapter provides the empirical analysis of the two theories outlined above with the first results providing evidence of the intertemporal substitution rather than the daily targeting hypothesis, effectively rejecting our null hypothesis.

5.1. Data

In this study, the estimation of labour supply has been conducted based on the data collected between 2011 and 2013 in North-Western Bosnia and Herzegovina through a survey. The survey was created for entrepreneurs, designed in order to collect answers about their firms and the working patterns they used to follow in terms of the working hours and the strategy for running their business. With 23 questions, the survey encompassed 124 independent and privately owned firms randomly distributed in the Northwest region of the country called the Una-Sana Canton. A list of questions from the research survey is presented in Appendix B. The process of data collection was carried out solely by the Author. Out of the 124 firms surveyed, 12 firms were discarded since their answers contained a lot of missing data, so that the data sample for further estimation contained 112 firms. Each of the firm was observed for a time period of 14 days and was cleaned for missing data before proceeding with further

estimation, so that the data sample contains a total of 1,341 observations. The survey questions focused on obtaining the data on the entrepreneur's position, the sector in which the firm belongs, the number of employees, the firm's strategy, motivation for doing business, the number of hours worked, the income earned, and other questions summarized and described below. Table 5.1 presents positions of the entrepreneurs within the company divided by entrepreneur's education and gender. Therefore, 60 entrepreneurs are actual firm owners, 22 of them are managers, 26 are employees and 4 are owners and managers. Furthermore, 28% of the respondents are female while the majority of the entrepreneurs surveyed are male (72%). The majority of the respondents hold a secondary school degree or only a primary school degree, with 40 out of 60 firm owners holding a primary or secondary school degree, and with only 20 respondents possessing a Bachelor or a Master degree.

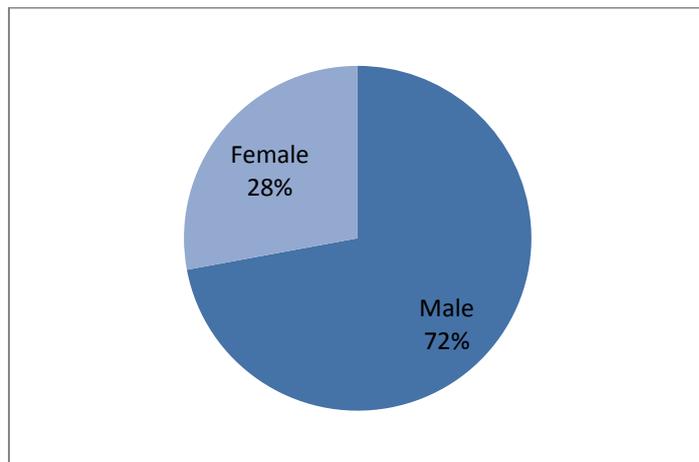
Table 5.1: Descriptive Statistics

	Owner		Manager		Employee		Manager and Owner	
Firms	60		22		26		4	
Education Obtained	Primary & Secondary School	B.Sc. & M.Sc.	Primary & Secondary School	B.Sc. & M.Sc.	Primary & Secondary School	B.Sc. & M.Sc.	Primary & Secondary School	B.Sc. & M.Sc.
	40	20	22	0	15	11	0	4
Gender by education and position*	Females		Females		Females		Females	
	10	4	2	3	2	3	2	0

*Out of 112 entrepreneurs, 26 are female, which is around 23%.

Source: Author's data

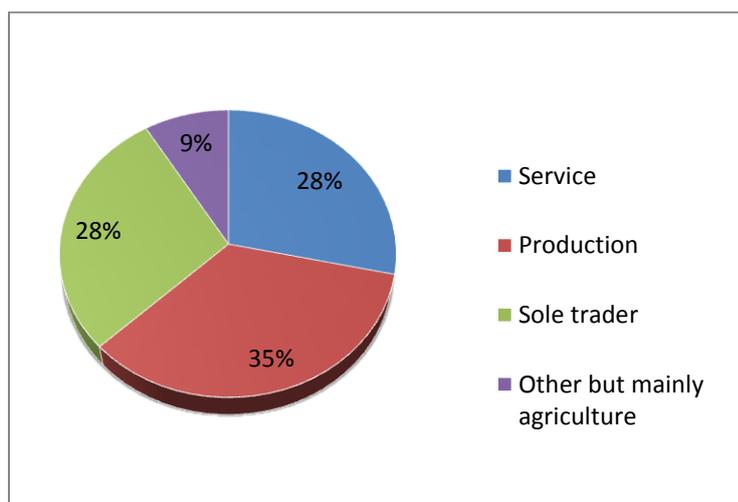
Figure 5.1: Gender



Source: Author's data

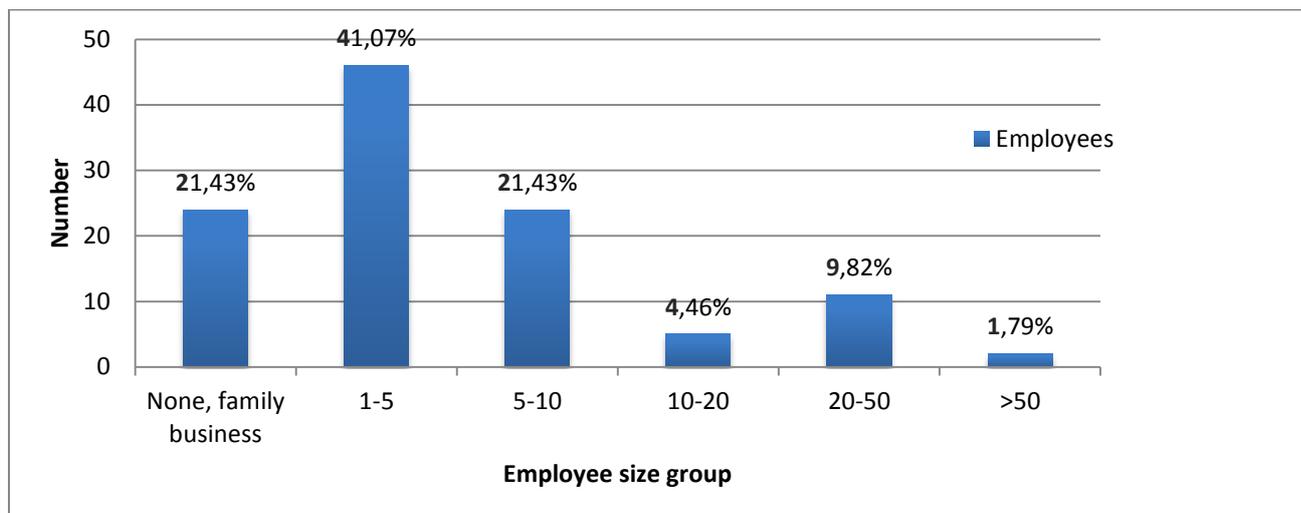
The most represented are the firms in the service sector, the production and trade sector, and agriculture (where honey and herbs producer are mostly dominating the market). All the firms surveyed are referred to as small-sized enterprises employing between 1 and 50 workers with most firms employing up to 5 employees (Figure 5.3).

Figure 5.2: Firms by Sector



Source: Author's data

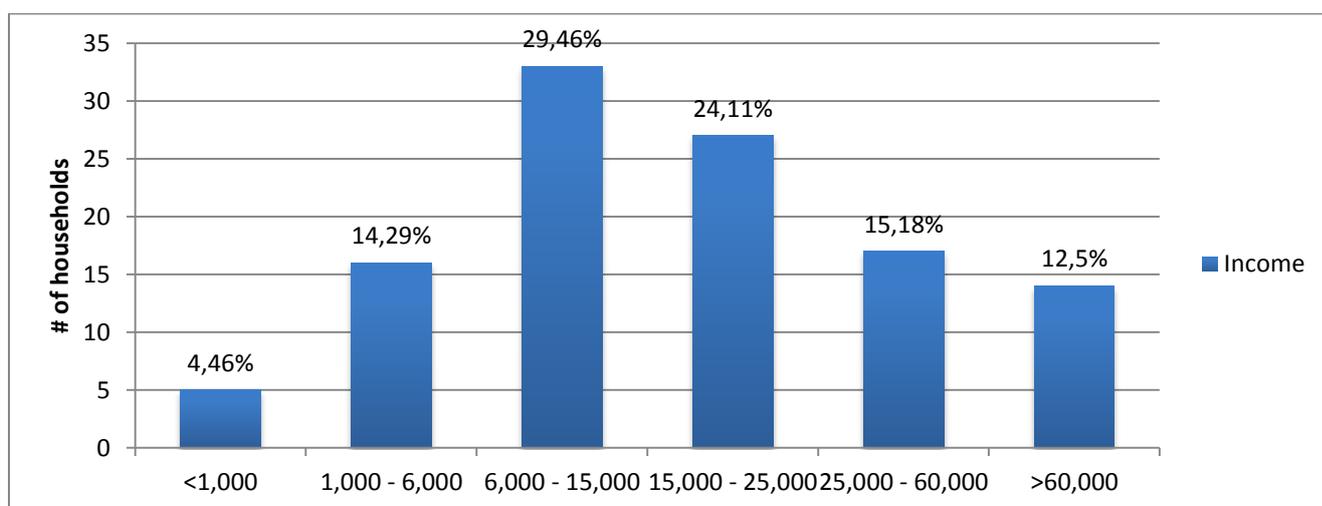
Figure 5.3: Number of Employees by Firm



Source: Author's data

Most of the entrepreneurs surveyed claimed to have a household income between 6,000 BAM and 25,000 BAM, which means that their average monthly household income lies between 300 € and 1,000 €. These values tell us that one group of entrepreneurs is in a very difficult economic situation or they are not reporting honestly about their household income. On the contrary, there are around 30% of entrepreneurs who stated that they have a yearly household income of above 25,000 BAM, or even above 60,000 BAM, which represents quite a high household income for Bosnia and Herzegovina (Figure 5.4).

Figure 5.4: Distribution of Household Income



Source: Author's data

In order to explore the performance of the firms, the entrepreneurs answered questions about their motives to run their business and their main business strategies in terms of profit and hours of work (Table 5.2, Table 5.3, Table 5.4). Based on the responses of the firm owners, we can say that the main objective of Bosnian and Herzegovinian entrepreneurs is chasing profits, with over 60% interested only in earning as much income as possible.

Table 5.2: Motive for Running a Business

Which sentence best describes your motive to run a business?	Respondents	%
Making as much money as possible.	71	63.39
To make enough to satisfy my family's basic needs.	34	30.36
I just follow the trend, everyone does business nowadays.	7	6.25
To show my neighbours and friends that I am not useless.	0	0.00

Source: Author's data

From the answers below, we see that the main strategy of Bosnian and Herzegovinian firm owners is the maximization of profit in a longer time horizon, and most entrepreneurs stated they work fixed working hours (55%) while around 30% work longer hours on “good days” and shorter hours on “bad days”.

Table 5.3: Firm's Main Strategy

What is your firm's main strategy as it makes its daily business on the market?	Respondents	%
Try to stay in business regardless of the losses	9	8.04
Achieve immediate profit, close after that	2	1.79
Achieve profit in an indefinite time horizon	95	84.82
Other	6	5.36

Source: Author's data

Table 5.4: Daily Hours of Work

Which sentence best describes how many hours you usually work every day?	Respondents	%
I work until I make a certain amount of money.	19	16.96
I work a lot when I do well (“good day”) and quit working early when I do badly (“bad day”).	32	28.57

I usually work fixed hours.	61	54.46
Other	0	0.00

Source: Author's data

5.2. Estimation Method

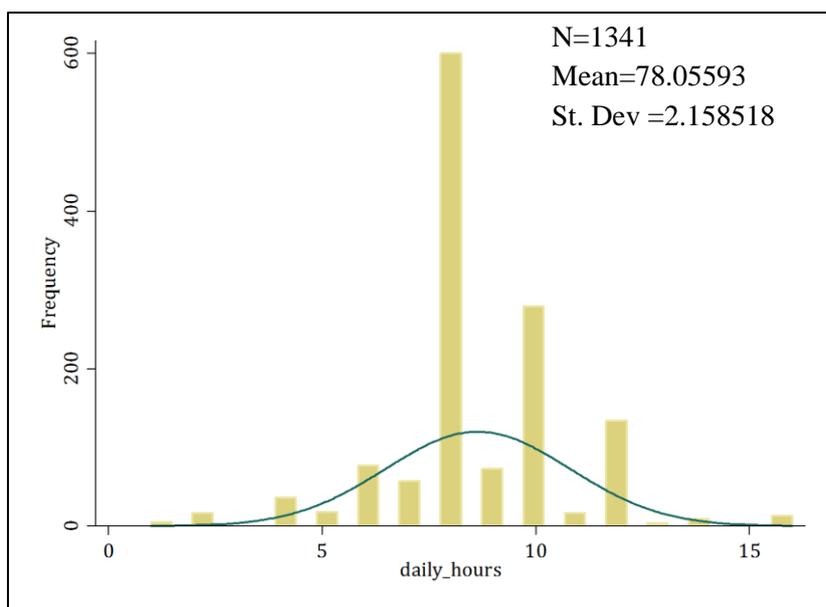
Key variables for the estimation of labour supply elasticity are the daily hours of work and the daily wage earned, which is shown in the table below and analysed in this section (Table 5.5). We will show the relationship between the hours that entrepreneurs choose to work each day and the daily wage they earn. As already mentioned above, in the beginning we had a data sample of 124 firms and each firm was observed within a 14-day period, leading to 1,736 observations. Since there were some data missing, such as the working hours for some days on which some entrepreneurs do not work, we eliminated the days on which the firms do not work and constructed an unbalanced panel for 112 firms with a 14-day period, which in total makes a data set with 1,341 observations. The unbalanced panel consists of $n = \sum_{i=1}^N T_i$ observations on individuals observed at different number of times T_i , which in our case is a period of 14 days. In the table below we calculated the mean, standard deviation, minimum and maximum, which show us that entrepreneurs work 8.64 hours per day on average and earn an average daily wage of 78 BAM (40 €). The average number of years the firm has been in existence is 16 years, with 10 years of experience within the firm and the average age of the firm owner, manager or employee being 42.

Table 5.5: Summary Table of Daily Hours Worked, Daily Wage, Experience and Age

Variable	Observation	Mean	Std. Dev.	Min	Max
Daily hours	1341	8.644295	2.158518	1	16
Daily wage (BAM)	1341	78.05593	110.4873	0	750
Firm's existence (years)	1341	15.68009	13.60744	2	75
Experience (years)	1327	9.618689	8.334769	1	40
Age	1301	42.94312	11.35178	23	64

Figure 5.2 depicts a distribution of working hours within the firm in question, suggesting that around 50% of the firms choose to work a fixed number of hours each day, as can be seen by the answers to the questions presented in Table 5.4.

Figure 5.5: Histogram Showing Daily Hours Worked



Source: Author’s data

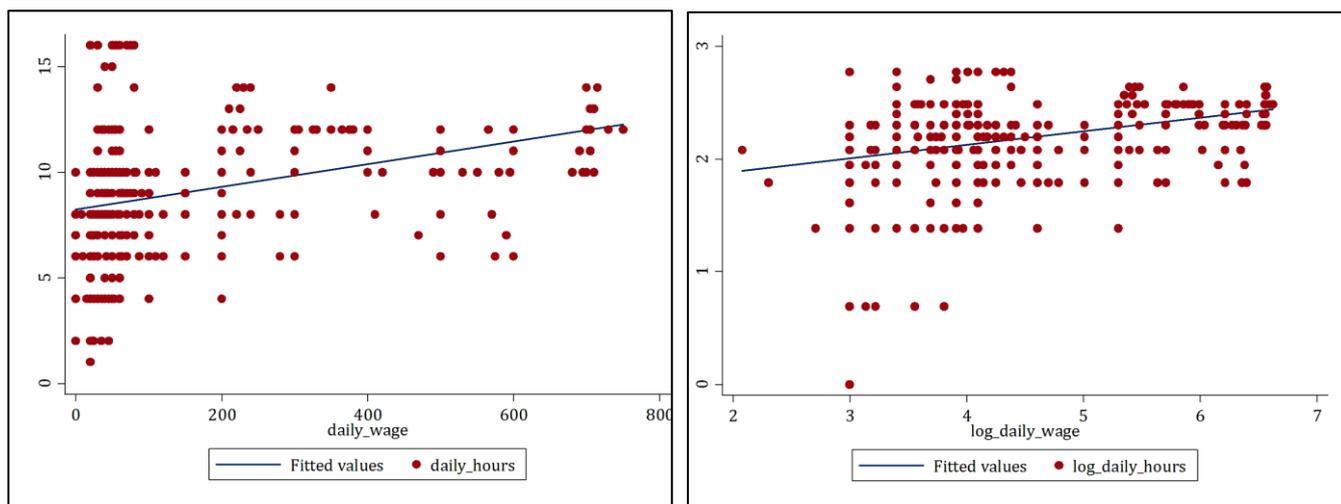
In Table 5.6, correlation is calculated between the daily hours worked and the daily wage earned, showing a positive correlation, resulting in 0.2745. After calculating the logarithms for the hours worked and the daily wage earned, we assessed the wage elasticity of labour supply using the daily number of hours as the dependent variable and the daily wage that the entrepreneur earns during the day as the independent variable, and we again obtained a positive correlation (0.3008), which is also depicted in the scatter plots below (Figure 5.6).

Table 5.6: Daily Hours and Daily Wage Correlation

Simple correlation	
	Daily hours
Daily hours	1.0000
Daily wage	0.2745
Elasticity	
	Daily hours

Daily hours in log value	1.0000
Daily wage In log value	0.3008

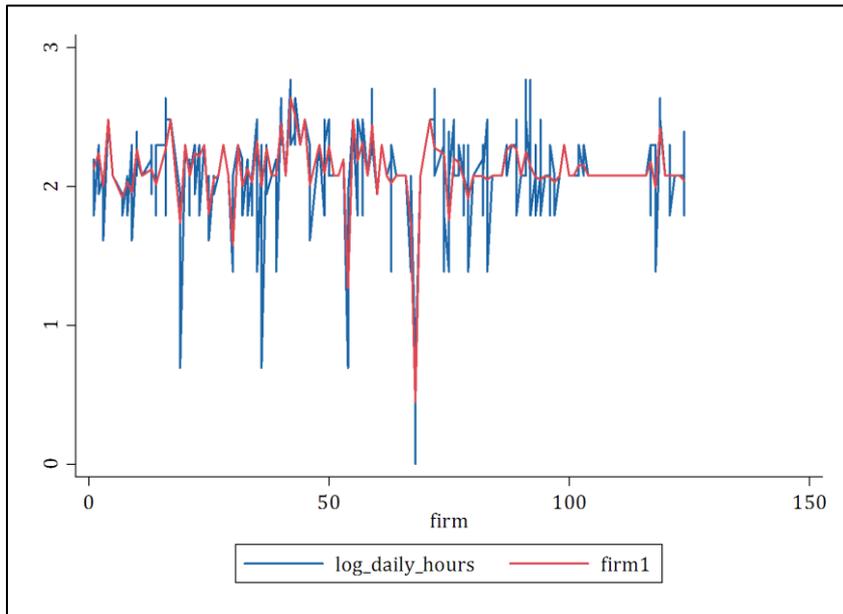
Figure 5.6: Scatter Plots: Relationship between Hours Worked and Wage Earned



Source: Author's data

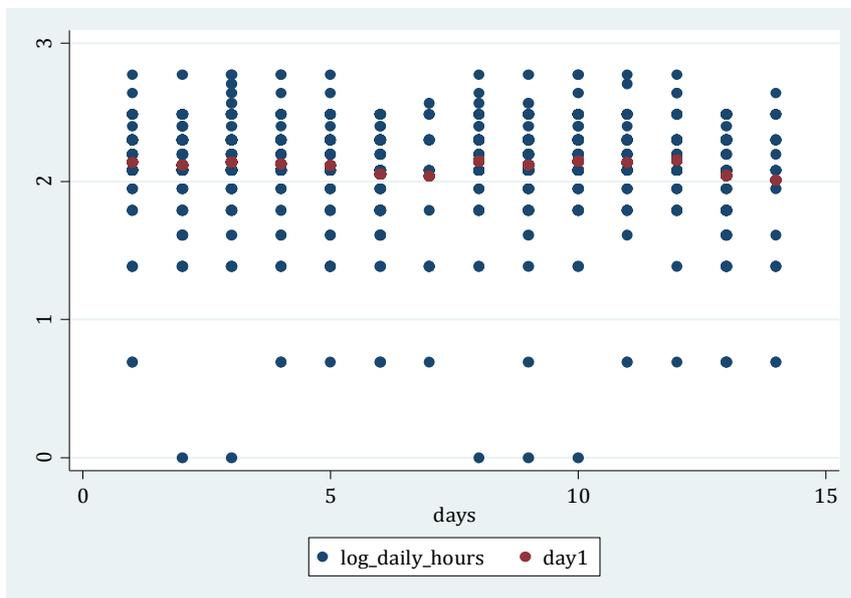
After we determined the sign and the value of the correlation between our key variables, we supposed that there are variations across days and firms – heterogeneity. This is due to the fact that some firms work long hours during favourable time periods for their business, depending on their activity and sector, while they do not work at all during the rest of the years. We can find one such example in our data for the honey producers, and within some entrepreneurs in the agriculture sector, such as egg and raspberries producers. Also, we assume that there is heterogeneity across days for specific firms. There are firms which work depending on the amount of work and customers, but there are many more firms that work fixed daily hours. Additionally, Monday seems to be the busiest day, and there are firms that work during the weekends and take free days during some days of the week, while there are firms that do not work during weekends at all. Therefore, the panel data we have in our study should be controlled for unobserved heterogeneity that we detected across firms and over days, and which is presented in the graphs below (Figure 5.7 and Figure 5.8).

Figure 5.7: Heterogeneity across Firms in Bosnia and Herzegovina



Source: Author's data

Figure 5.8: Heterogeneity across Days for the Firms tested in Bosnia and Herzegovina



Source: Author's data

5.3. Empirical Results

A major advantage of panel data is an increased precision in estimation, which is a result of an increase in the number of observations caused by a combination of several time periods of

data for each individual. In this Master thesis, a long panel with a relatively small cross section of 124 firms was observed for a number of time periods (14).

Since the panel data provide information on individual behaviour both across time and across individuals, we used the panel regression method, which is designed to explore the panel feature of our data with the following econometric model that we employed:

$$\ln L_{it} = \beta_1 + \beta_2 \ln w_{it} + \beta_3 X_{it} + \varepsilon_{it}$$

where $\ln L$ and $\ln w$ are natural logarithms of the daily hours worked and the daily wage, respectively. The resulting coefficient of $\ln w$ in this case is elasticity of the daily hours worked with respect to daily wages. The variable X is a vector of control variables. In order to estimate the panel regression coefficients we had three different options – namely, the pooled OLS, the fixed effects and the random effects model. Since fixed effects and random effects models account for country-specific effects, it is generally advised to use them instead of the pooled OLS with few exceptions. To decide between fixed or random effects, we ran the Hausman test, where the null hypothesis is that the preferred model is the random effects model and the alternative model is the fixed effects model, testing whether unique errors are correlated with the regressors (Green, 2008). The result of the test is in accordance with the theory, which states that, in fixed effects models, the estimation of the coefficient of any time-invariant regressor, such as the indicator variable for gender that we had, is not possible as it is absorbed into the individual-specific effect. Coefficients of time-varying regressors are estimable, but these estimates may be very imprecise if most of the variation in a regressor is cross sectional rather than over time (Cameron and Trivedi, 2005). Therefore, they do not estimate the effects of variables whose values do not change across time, which are demeaned variables having a value of 0 for every case, and since they are constants, they will drop out of any further analysis. However, we used the Hausman test to show which model is more appropriate for our panel data (Table 5.7). In the test, the null hypothesis is that the random effects model is consistent and efficient, while the fixed effects model is consistent but inefficient, and since the p value for the test is greater than 0.05 having the $\text{Prob} > \chi^2 = 0.8986$, we cannot reject H_0 and can conclude that the random effects model is a preferred method for estimation in our case. Thus, we tested whether fixed effects are present by using the Hausman test of whether there is a statistically significant difference between

these estimators. Also, compared to the fixed effects, the random effects model has the advantage of stronger assumptions of permitting a consistent estimation of all parameters, including the coefficients of time-invariant regressors (Cameron and Trivedi, 2005).

Table 5.7: Hausman Test

	b	B	b-B	
	FE	RE	Difference	SE
Log daily wage	.131208	.1294752	.0017327	.013601

b = consistent under H_0 and H_a ;

B = inconsistent under H_a , efficient under H_0 ;

Test: H_0 : difference in coefficients not systematic

Prob>chi2 = 0.8986

Source: Calculations of the Author

Alternatively, any other pair of estimators with similar properties, such as the pooled OLS, can be used, and we which compared the estimators to the pooled OLS after deciding to use random effects. In order to decide between random effects and the pooled OLS, we used the Bruesch-Pagan test with the alternative hypothesis being in favour of the pooled OLS over random effects. From the results of the test presented below (Table 5.8), it is evident that we can reject H_0 at the 0.001 level of significance and conclude that there are random effects in the model and consequently it is preferred over the pooled OLS model. Additionally, in the previous section we already identified heteroskedasticity, which causes standard errors to be biased, which we corrected by calculating robust standard errors which tend to be more trustworthy (see Appendix A for a graphical representation). Robust standard errors address the problem of errors that are not independent and identically distributed, and they do not change the coefficient estimates provided, but they do change the standard errors and significance tests slightly. Furthermore, we estimated how elasticity varies when we include dummy variables for days and firms, which is presented in the section below.

Table 5.8: Breusch and Pagan Lagrangian Multiplier

Breusch and Pagan Lagrangian Multiplier Test for Random Effects

Log daily hours[firm,t]=Xb+u[firm]+ e[firm,t]

Estimated results

	Var	sd=sqrt(Var)
log days	.0929338	.3048505
E	.0288896	.1699693
U	.0547942	.2340817

Test: Var (u) = 0

$\chi^2(01)=3602.95$

Prob> $\chi^2= 0.0000$

Source: Calculations of the Author

5.3.1. Estimation Results

Based on the results of the random effects model, which proved to be the most appropriate model for our analysis, the estimated wage elasticity is positive and significantly different from zero. The elasticity amounts to 0.12 and the estimated coefficients for the dummy days variables are positive and significantly different from zero. The estimated elasticity of labour supply with respect to daily wages can be interpreted as 1% growth in the daily wage earned increasing the number of hours worked by 0.129%, and the variable is significant at a 1% level, meaning that Bosnian and Herzegovinian entrepreneurs tend to substitute labour and leisure intertemporally. Hence, our estimation proved that the hypothesis of positive labour supply elasticity and daily targeting hypothesis hold no empirical evidence for Bosnian and Herzegovinian entrepreneurs.

Table 5.9: Comparison Table of RE and Pooled OLS

Log daily hours	Random effects <i>Robust</i>			Pooled OLS		
	Coef	Std Err	P> t	Coef	Std Err	P> t
Log						
daily wage	.1294752	.0293708	0.000**	.1316514	.0116521	0.000**
Firm existence	.000875	.0293708	0.000**	.0009587	.0008996	0.287
Experience	.0004685	.0035327	0.894	.000625	.0015459	0.686
Gender	.0073147	.0525831	0.889	-.013492	.0183401	0.462
Employee	.0487767	.1067644	0.648	.0441824	.0465613	0.343

Manager	.0853094	.1077388	0.428	.0793161	.0456873	0.083*
Owner	.0516202	.1124949	0.646	.0435426	.0445666	0.329
Primary school	.0953314	.0910811	0.295	.1172501	.0282036	0.000**
High school	.1411645	.0902266	0.118	.1602019	.0216696	0.000**
Bachelor degree	.0124926	.0994867	0.900	.0171558	.0265246	0.518
Age	.0016731	.0023851	0.483	-.0021536	.0008272	0.009**
Const.	1.528118	.1822229	0.000**	1.5344	.0798901	0.000**
Obs	1286					
R ²	0.1430			0.1441		

Note: Dependent variable is the log of the hours worked. Standard errors are in parentheses and are corrected for heteroskedasticity.

Significance levels: *: 10% **: 5% or better

Source: Calculations of the Author

In random effects, the loss of significance is present and standard errors are underestimated by the pooled OLS, so that many variables that are not significant in the random effects are significant in the pooled OLS. However, the number of years a firm has existed and the experience of the entrepreneur within the firm were expected to be positive signs, and they are significant for the number of years a firm exists in random effects. Other controls do not directly affect the labour supply or the hours worked. Furthermore, the position of the entrepreneurs within the firm has a positive impact on the daily hours worked, but is also not significant. The education level plays a more significant role, with quite unexpected results, which are positive for the primary school degree (0.095) and high school degree, with a significance level at 5% being 0.141. The R-squared, which is the percent of variance-explained measures of the overall fit of the model, and which is 0.1430 and 64% of the variance, can be explained by the dissimilarities among entrepreneurs. Even though the determination coefficient is around 14%, small R-squared are reported in other similar studies, but are still acceptable under this framework.

The results from the random effects with dummy days included prove what we already graphically represented in the previous section, i.e. that there are days that are busier than others. For example, Mondays, Wednesdays and Thursdays seem to be very “good” days for Bosnian and Herzegovinian entrepreneurs, with values around 0.1, while weekends are not very busy days, with small values being negative for Sundays with around -.001, and being around 0.03 for Saturdays. Hence, Bosnian and Herzegovinian entrepreneurs either do not work on weekends or work shorter hours. After we included a dummy firm, we verified the differences among the firms, so that some firms work substantially more than others, where

for example Firm no. 38 with a value of 2.01 seems to work considerably longer hours than, e.g., Firm no. 41, with a value of -3.08.

Table 5.10: Random Effects with Dummy Days Included

Log daily hours	Random effects		
	Coef	Std Err	P> t
Log daily wage	.126281	.0196202	0.000**
Firm existence	.0006897	.0024666	0.780
Experience	.000932	.0041903	0.824
Gender	-.0080008	.0510346	0.875
Employee	.0400308	.1276772	0.754
Manager	.0814493	.1276638	0.523
Owner	.0465279	.1231822	0.706
Primary school	.0953107	.077247	0.217
High school	.1431257	.059442	0.016**
Bachelor degree	-.0088965	.0733806	0.904
Age	-.0017051	.0022605	0.451
Monday (D1)	.1156529	.0412844	0.005**
Tuesday (D2)	.094715	.0412345	0.022**
Wednesday (D3)	.1151032	.0412596	0.005**
Thursday (D4)	.1046292	.0412156	0.011**
Friday (D5)	.0976305	.0411736	0.018**
Saturday (D6)	.0278254	.0418817	0.506
Sunday (D7)	-.0011235	.0525601	0.983
Monday (D8)	.1218902	.0412466	0.003**
Tuesday (D9)	.0933435	.0412322	0.024**
Wednesday (D10)	.1253726	.0412033	0.002**
Thursday (D11)	.1136798	.0412005	0.006**
Friday (D12)	.1167764	.0413347	0.005**
Saturday (D13)	.0385877	.0421467	0.360
Const.	1.448119	.1815628	0.000**

Note: Dependent variable is the log of the hours worked. Standard errors are in parentheses and are corrected for heteroskedasticity.

Significance levels: *: 10% **: 5% or better

Source: Calculations of the Author

A very interesting observation can be made when we include the interactions of log daily wages with each of the controls. In this way, we found out how the relationship between the wage and the hours worked changes by increasing the variable experience, thus directly affecting the labour supply. In the table below we presented the interactions of log daily wage * experience, and log daily wage * gender, and obtained a positive and significant coefficient for experience, based on which we can infer that, when the daily wages are higher, entrepreneurs with more experience work more compared to the less experienced ones.

Table 5.11: Interactions of Experience and Gender Variables

Robust			
Log_daily_hours	Coef.	Std. Err	P> t
Log_daily_wage	.0780072	.0328065	0.017 **
Log daily wage * experience	.0035453	.001931	0.066 **
Log daily wage * gender	.0278872	.0485264	0.566
Existence of firm	.0011322	.0019901	0.569
Experience	-.0151217	.0096814	0.118
Gender	-.114891	.2073864	0.580
Employee	.0319887	.580	0.714
Manager	.0703631	.0895022	0.432
Owner	.0377223	.0959052	0.694
Primary school	.0846525	.0884428	0.338
High school	.1337853	.0898382	0.136
Bachelor degree	-.0313749	.0978901	0.749
Age	-.0015796	.002408	0.512
Const.	1.753483	.1597601	0.000

Significance levels: *: 10% **: 5% or better

Source: Calculations of the Author

Chapter 6

Conclusions

Labour supply elasticity with respect to the wage rate is important for policy analyses. The manner in which variables are constructed solely from raw data can play an important role, the same way as the method applied for estimation, which have an impact on the estimates of the model parameters, and finally on the estimated labour supply elasticity, plays an important role. In this Master thesis, we estimated labour supply, which is sensitive to intertemporal variation in wages, which helps us to predict whether workers are willing to substitute labour and leisure intertemporally in some cases or follow the income targeting hypothesis. Therefore, we estimated the sign of wage elasticity in the case of Bosnian and Herzegovinian entrepreneurs in order to test the intertemporal labour hypothesis, according to which workers relocate their efforts intertemporally in response to anticipated wage changes, working more when wages are high and consuming more leisure when its price foregone wage is low. With the aim of testing the hypothesis empirically, we collected data by surveying 124 entrepreneurs in North-Western Bosnia and Herzegovina on their daily income earned and the hours worked. Through the survey we also collected data on entrepreneurs' business strategy, motivation for running the business, household income and other information that helped us to understand the overall behaviour of Bosnian and Herzegovina entrepreneurs. As a result, we obtained a dataset with the most represented sectors: service, production, trade, and agriculture with mainly small-sized enterprises employing up to 5 employees. Additionally, 60% of entrepreneurs are purely interested in chasing profit, while 55% are working fixed hours regardless how busy or not busy the working day is and mainly do not work during the weekends. On average, the entrepreneurs surveyed work 8.64 hours per day and earn an average daily wage of 40€ (78 BAM). Also, the vast majority of the entrepreneurs surveyed have a quite low education level, with approximately 70% holding only a secondary school degree, or even a primary school one only. The average age of the entrepreneurs is 42, based on which we can conclude that entrepreneurship is regarded as rather unpopular among young educated people in Bosnia and Herzegovina. One possible reason for that is that educated people either work or search for jobs in the public sector because the wages are still higher in this sector, whereas another possible reason might be the

brain drain with which Bosnia and Herzegovina is struggling. In addition to that, we identified a panel structure of the data and calculated the sign of wage elasticity, after which we performed relevant tests in order to decide the best fitting model, which in our case proved to be the random effects model corrected for heteroskedasticity by calculated robust standard errors. Since we obtained positive wage elasticity, we concluded that the hypothesis of negative wage elasticity and the daily targeting hypothesis in the case of Bosnian and Herzegovinian entrepreneurs has no empirical evidence. Hence, the wage elasticity is around 0.13, which proves the hypothesis of intertemporal substitution of labour supply (ISH), according to which we can say that an increase in wages leads to an increase of the hours worked and that Bosnian and Herzegovinian entrepreneurs tend to substitute labour and leisure intertemporally, with the main motive for running their business being chasing profits. Despite using the same estimation strategy as Camerer et al. (1997) used for estimating the labour supply elasticity of New York City taxi drivers, we obtained an opposing sign of labour supply elasticity. Thus, our results proved to be in accordance with the standard neoclassical model of labour supply, which can be explained by the country's historical background and its difficult economic and political situation. After we proved the ISH, we can say that Bosnian entrepreneurs are planning their time horizons in a longer way, meaning that they apply a broader time horizon for their labour supply, thus rejecting the daily targeting hypothesis. Even though Bosnia and Herzegovina has the tradition of an industrial-based economy, the country was part of former Yugoslavia, where planned economy was dominant and privately-owned businesses practically did not exist. This might be one of the possible explanations of the results obtained, indicating entrepreneurs' behaviour in terms of fixed working hours. Additionally, after the breakup of former Yugoslavia, Bosnia and Herzegovina was faced with huge burdens of war and a painful transition that has not been successfully completed even almost 20 years after the end of the war. Such an extended transition process resulted in an unfavourable business climate, making the country vulnerable to all sorts of negative spill-over effects, such as the current economic crisis which in Bosnia and Herzegovina lead to declines in FDI by 42.5% in 2011 and a drop in GDP real growth by around 2%. On top of that, the grey economy in BiH amounts to 36% (World Bank), with the wholesale and retail sector dominating the market and with very few production activities that create added value. All of the above is accompanied by poor development policies and legal framework and a lack of coordinated institutional support, which result in no job creation, no

extension to foreign markets, and no poverty reduction in the country. We analysed various influence factors that have an impact on entrepreneurship skills, habits and working patterns that Bosnian and Herzegovinian firm owners follow and found that an international inflow of remittances could play an important role. Namely, they are estimated at around 3 billion € (6 billion BAM) and are 3 times higher than FDIs, and therefore serve as an important source of income for numerous households, not being channelled towards entrepreneurship, but rather towards current consumption. In the long run, remittances have a negative influence on the labour supply and have an impact on labour market decisions, which together with unstimulating policies and an unfavourable business climate result in a relatively low number of SMEs compared to the EU average. In Bosnia and Herzegovina, it is estimated that there are 8.3 SMEs per 1000 inhabitants, which is far below the EU average of 40 SMEs. Another possibility for interpreting the results obtained is that entrepreneurs may not report their income and the daily worked hours because they fear the regulation or intervention by the authorities, and grey economy and unreported income in Bosnia and Herzegovina is a well-known problem.

As a final remark, we can conclude that the role of the government should be to become actively engaged in stimulating the SME sector and creating measures that would support and specifically target the sectors that create more added value and, based on their strategic development plans, have the resources and the potential, e.g. the tourism sector, metal and wood industry. Bosnian and Herzegovinian firm owners operate in a completely unfavourable environment, leaving them insufficient space for improving and developing their businesses. Under such circumstances, the entrepreneurship spirit will not develop among young and educated people in BiH, and international remittances will not be invested in entrepreneurship because it is too risky, while foreign investments will be redirected to the neighbouring countries. Therefore, young entrepreneurs should be motivated through different start-up support programs that might develop the entrepreneurial culture and business ethics, whereas the SME sector needs support through the improvement of the legal framework, including alleviating the legal obstacles and involving the sector in drafting legislation. The implications of the improvement of the legal framework are numerous, since they would certainly result in stopping the brain drain, increasing employment in the private sector instead and stimulating the SME sector to become the main accelerator of the country's economy.

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Appendix A

Table 1A: Main Economic Indicators, Comparative Review of the Entity Level and the National level

Indicators	2012			2013		
	RS	FBiH	BiH	RS	FBiH	BiH
Real sector						
Nominal GDP (in millions of BAM)	8,585.0	16,469.1	25,654.3			
GDP, real growth rate in %, (y/y)	-1.1	-1.1	-1.1			
Population (estimation, thousands)	1,429.3	2,338.3	3,836.0			
GDP per capita (in BAM)	6,006.0	7,043.0	6,688.0			
Industrial production growth rate in %, (y/y)	-4.2	-4.3	-5.2	4.1	7.4	6.4
Number of unemployed (registered)	153,225	377,957	543,390	151,290	388,704	552,494
Number of employed (registered)	238,178	437,331	688,340	238,640	435,273	673,135
Unemployment rate (official statistics), %	39.3	46.4	44.1			
Unemployment rate, (unofficial?) %	25.6	29.4	28.0	27.0	27.6	27.5
Average wage (in BAM)	818.0	829.9	826.0	808.0	835.0	827.0
Consumer price index	2.1	2.1	2.1	0.0	-0.2	-0.1
Consolidated budget						
Revenue (% of GDP)	42.5	40.3	44.7			
Expenditure (% of GDP)	41.1	40.0	43.5			
Transaction in nonfinancial assets (% of GDP)	3.6	2.7	3.2			
Net lending/borrowing (% of GDP)	-2.2	-2.4	-2.1			
Loans						
Loans to households (in millions of BAM)	2,190.7	4,566.9	6,794.7			
Loans to households, growth rate %, (y/y)	1.9	0.7	1.3			
Loans to households, per capita (in BAM)	1,532.7	7,043.0	1,771.3			
Loans to enterprises (in millions of BAM)	2,542.8	4,816.9	7,437.2			
Loans to enterprises, growth rate in %, (y/y)	5.8	4.2	4.4			
Loans to enterprises (% of GDP)	29.6	29.2	29.0			
Total deposits (in millions of BAM)	4,804.2	10,515.6	13,326.5			
Total deposits, growth rate in %, (y/y)	6.8	-1.1	2.5			
External trade						
Exports of goods (in millions of BAM)	2,374.3	5,248.5	7,858.0	2,588.1	5,548.0	8,380.3
Exports of goods, growth rate in %, (y/y)	-7.3	-3.2	-4.4	9.0	5.7	6.6
Import of goods (in millions of BAM)	4,487.5	9,972.5	15,252.9	4,551.6	9,832.9	15,169.8
Import of goods, growth rate in %, (y/y)	-2.1	-2.0	-1.8	1.4	-1.4	-0.5
Coverage import/export (in %)	52.9	52.6	51.5	56.9	56.4	55.2
Balance of goods (in millions of BAM)	-	-4,723.9	-7,395.0	-1,963.5	-4,285.0	-6,789.5

	2,113.2		
Balance of goods (in % of GDP)	-24.6	-28.7	-28.8
Participation of exports in GDP, in %	27.6	31.9	30.6
Exports per capita (BAM)	1,661.2	2,244.6	2,048.5

Source: Database of Economic Indicators of Republika Srpska

Table 2A: Employment by Groups of Sections of Economic Activities

Groups of sections of economic activities	2012		
	Women	Men	Total
TOTAL	300	514	814
Agriculture	68	99	167
Industry	50	197	247
Services	182	218	399

Indices	2012/2011		
	Women	Men	Total
TOTAL	99	100.2	99.8
Agriculture	107.9	102.1	104.4
Industry	102	105.9	104.7
Services	95.8	94.8	95.0

Source: Database of Economic Indicators of Republika Srpska

Table 3A: Random Effects with Dummy Firms

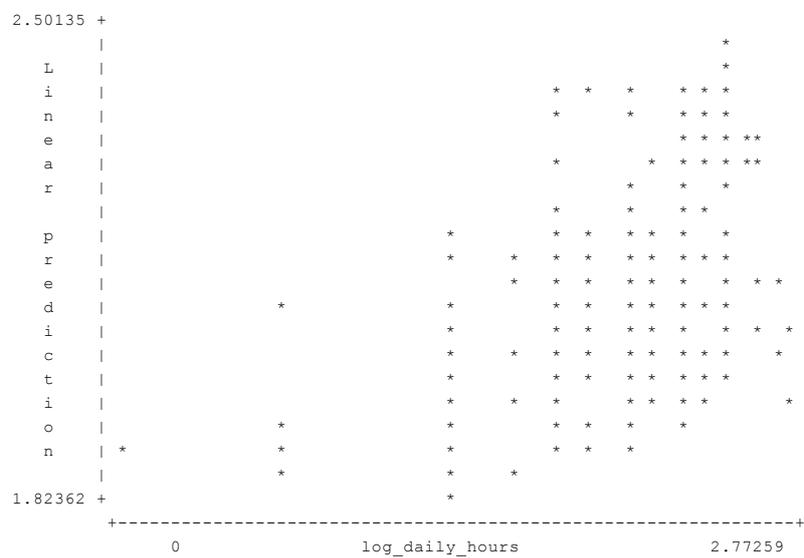
Log daily hours	Random effects		
	Coef	Std Err	P> t
Log daily wage	.131208	.0241064	0.000**
Firm existence	.082655	1.108536	0.941
Experience	-.085575	1.15765	0.941
Gender	.5899854	6.456341	0.927
Employee	1.047876	8.980503	0.907
Manager	.4345544	3.768999	0.908
Owner	.8947025	8.003456	0.911
Primary School	.3000466	2.829049	0.916
High School	.6770244	7.00579	0.923
Bachelor	.657284	5.988845	0.913
Age	-.0134741	.1223626	0.912
F1	.2598378	3,906.965	0.947
F2	.0435954	.2724795	0.873
F3	-2,560.911	3,330.462	0.939
F4	.0037924	4,830.229	0.999
F5	-.2321831	4.79231	0.961
F7	-.607226	7.285.134	0.934
F8	-3,237.834	4,110.702	0.937
F9	-.3663445	2,301.444	0.874
F10	-.333996	5,506.198	0.952
F11	1,049.039	9,680.466	0.914
F13	-.7382871	1,048.725	0.944
F14	-.0735471	1,713.154	0.966
F16	.5304721	2,548.357	0.835
F17	-.0557135	5.30173	0.992
F19	-.5408358	4,251.044	0.899
F20	-.1460059	2,889.618	0.960
F21	.1639409	1,663.563	0.921
F22	-.3234246	4,461.776	0.942
F24	.0451528	2,349.077	0.985
F25	-.0484042	2,233.314	0.983
F26	-2,181.829	3,041.266	0.943
F27	-.7758731	1,081.858	0.943
F28	.7605741	4,716.069	0.872
F29	.0190669	.7822708	0.981
F30	-1,032.664	5,613.469	0.854
F31	.5425154	1,819.922	0.766
F32	-.4272826	2,789.504	0.878
F33	1,154.694	1,102.826	0.917
F34	.076469	1,868.651	0.967

F35	-.1987373	4,834.388	0.967
F36	.115.766	1,048.858	0.912
F37	.726215	4,295.241	0.866
F38	2,013.911	1,900.815	0.916
F40	.0386768	.8854574	0.965
F41	-3,087.066	4,227.956	0.942
F43	-.1372028	4,206.441	0.974
F44	-.0241208	2,626.424	0.993
F45	1,947.024	2,244.524	0.931
F48	.0958101	1,136.828	0.933
F50	-3,539.695	508.531	0.945
F51	-1,470.281	1,849.384	0.937
F52	-.0618767	1,327.885	0.963
F53	-.0278746	2,357.305	0.991
F54	-.2793393	5,974.828	0.963
F55	1,021.537	6,919.008	0.883
F56	.2837638	.8776768	0.746
F57	-.5172258	7,344.208	0.944
F58	.1099387	1,049.013	0.917
F59	-1,212.153	2,351.846	0.959
F60	-2,383.327	3,022.915	0.937
F61	-.7691211	120.391	0.949
F62	-.5494313	8,376.352	0.948
F63	-.3615485	3,456.185	0.917
F64	-.7237231	8,186.688	0.930
F65	-.3409421	5,062.691	0.946
F66	-2,328.754	335.598	0.945
F67	-.5781531	4,053.749	0.887
F68	-1,126.201	3,446.014	0.744
F69	.1284768	.6293318	0.838
F71	.3474218	1,826.741	0.849
F72	.9717062	7,299.094	0.894
F74	-.2947255	4,708.514	0.950
F75	-.6473868	293.784	0.826
F76	.1434517	.4935928	0.771
F77	-.2237211	432.045	0.959
F78	.0140045	1,285.514	0.991
F79	-.4504691	.7156825	0.529
F80	-2,327.108	2,884.677	0.936
F82	.138.191	1,464.065	0.925
F83	.1352021	242.116	0.955
F84	.7404607	695.613	0.915
F85	.5063197	7,001.333	0.942
F86	.106.029	1,164.783	0.927

F87	.8352709	7,669.536	0.913
F88	.6996731	582.018	0.904
F89	.0719545	1,768.852	0.968
F90	.0214519	.685149	0.975
F91	.3550159	1,285.498	0.782
F92	.8683249	7,500.363	0.908
F93	-.3062869	3,447.716	0.929
F94	.0600643	.1135218	0.597
F95	-.1237697	2,899.015	0.966
F96	-.330909	4,488.321	0.941
F97	-.1137901	2,810.547	0.968
F99	.7158458	4,416.224	0.871
F100	-.0618058	1,785.054	0.972
F101	.0486098	.1641327	0.767
F102	.6518869	5,108.339	0.898
F103	-.0883465	3,074.356	0.977
F104	.2007593	1,801.313	0.911
F106	.4280172	2,768.305	0.877
F111	-.1500049	1,019.837	0.883
F112	-.2725626	3,111.517	0.930
F113	.0008908	.3867001	0.998
F115	-.1991781	2,593.971	0.939
F116	-.0861037	1,994.19	0.966
F118	-.6753956	5,768.676	0.907
F119	-.0157821	1,392.832	0.991
Const.	.1905331	14,13334	0.989

Source: Calculations of the Author

Figure 1A: Graphical Representation of Heteroskedasticity



Source: Calculation of the Author

Appendix B

RESEARCH SURVEY

1. How long has your firm been in business in this area (functioning on the market in this area)?

Since _____

2. In what sector does your enterprise/firm operates?

a) Services

b) Production

c) Sole trader

d) Other form

(what?): _____

3. How many employees are employed in your enterprise?

a) 1

b) 1-5 employees

c) 5-10 employees

d) 10-20 employees

e) 20-50 employees

f) > 20 employees

4. How would you describe the market for your enterprise?

a) Municipality

b) Several municipalities

c) Whole canton

d) Whole country

e) International markets

5. Has the market for your firm's output changed in the last 3 years (and how)?

a) Remained the same

b) Expanded thanks to: _____

c) Decreased owing to: _____

10. Can you choose the number of hours you work each day?
YES/NO

11. Do you keep records on the hours you and your employees work each day?
YES/NO

12. Which sentence best describes how many hours you usually work every day?

- a) I work until I make a certain amount of money b) I work a lot when I do well (“good day”) and quit working early when I do badly (“bad day”)
- c) I usually work fixed hours d) Other (what?): _____

13. How many hours did you work for:
during the past week (please mark for each day of the week)?

Mon	Tue	Wed	Thu	Fri	Sat	Sun

the week before the last (if you can remember)?

Mon	Tue	Wed	Thu	Fri	Sat	Sun

14. What was the average daily gross wage (wage per day/hours worked):
for the past week (please mark for each day of the week)?

Mon	Tue	Wed	Thu	Fri	Sat	Sun

the week before the last (if you can remember)?

Mon	Tue	Wed	Thu	Fri	Sat	Sun

15. What was your average daily gross wage for:

- a) the last month? ____ b) the months before the last? ____ BAM
BAM

16. What was the average amount of hours you worked:

- a) the last month? ____ hrs b) the months before the last? ____ hrs

Information about the person who filled in this questionnaire (please mark as appropriate):

1. Position: *owner/manager/employee*

2. Number of years in the firm: ____ *years*

3. Highest education obtained: *Primary/Secondary/University/Master or PhD*

4. Gender: *M/F*

5. Age: ____ *years of age*