universität wien

MASTERARBEIT / MASTER'S THESIS

Titel der Masterarbeit / Title of the Master's Thesis

Desired working hours and labour supply elasticities of Austrian workers

verfasst von / submitted by

Max Hoffmann, BSc

angestrebter akademischer Grad / in partial fulfilment of the requirements for the degree of

Master of Science (MSc)

Wien, 2021 / Vienna, 2021

Studienkennzahl lt. Studienblatt / Degree programme code as it appears on the student record sheet:	UA 066913
Studienrichtung lt. Studienblatt / Degree programme as it appears on the student record sheet:	Volkswirtschaftslehre
Betreut von / Supervisor:	Univ.-Prof. Mag. Dr. Ana Begona Ania-Martinez


universität
wien

Acknowledgements

First of all, I am very grateful to Ms. Ania-Martinez who agreed to supervise my Master's Thesis, even though she was very occupied with the supervision of other students already. Despite her friendly warning that she might not be able to provide me with all the support I would need, she found a lot more time for me than I could ever have asked for. Thanks to her positive attitude, her natural cordiality, and her honest interest in the topic, I was always motivated to continue my work.

I also want to express my special gratitude to the Austrian labour union (ÖGB) and the Austrian Chamber of Labour (Arbeiterkammer) who made the realisation of this Master's Thesis possible. Without their grants (ÖGB: Johann Böhm-Stipendium / Arbeiterkammer: Förderung von wissenschaftlichen Abschlussarbeiten) I would not have been able to pay a market research firm (Talk Online Panel GmbH) to conduct a representative survey.

I would like to thank my friends for making this time a beautiful one and for their support of all forms. In particular, I would like to thank Phin Leslau for his detailed and entertaining way of proofreading my work. And I would like to thank Jonas Lüdemann and Jannik Grüter for the valuable ideas they contributed and the good advises they gave.

Finally, regarding this Master's Thesis, I am thankful for the important and supportive talks with my family, and in particular for the socioeconomical inputs which were provided by my father. Beyond this, I cannot be grateful enough to my family for the good values I was taught, for the love I was given, and for all the patience they had with me throughout my studies. For my nephew, I hope this works contributes to a work-life balance just as he imagines it.

Content

List of Tables

List of Figures

1. Introduction

More than ever is the weekly working time subject to social and political debates. Finland is planning to implement a 6-hour workday (Claesson, 2020) and only in March 2021, the Spanish government announced one of the world's first pilot projects for a 32-hour work week at a national level (Kassam, 2021). Even though other countries like Sweden (Winroth, 2017) or companies like Microsoft (Paul, 2019) conducted pilot projects on regional or sectoral levels before, there is still a big discussion about the positive and negative effects of working time reductions on the economic activity and the workers' health when an implementation occurs on a national level. But the sole presence of these discussions shows that the change in the perception of working time has come a long way. With younger generations pushing into the labour market, the idea of a change in the work-life balance, which tends towards lower working times, is currently becoming more present and is going to influence the labour market design in the future. This will probably lead to a continuation of the development of decreasing working hours. Messenger, Lee and McCann (2007) provide an extensive overview of this development. While in Europe the limitation of the daily working time to a maximum of 10 hours before World War I was already seen as a significant improvement, other countries such as the US and New Zealand had already implemented a 48-hour week at that time. After the end of World War I, the 48-hour work week also spread in Europe and some Latin American countries. Besides the goal of the avoidance of unhealthy work, which was considered to be the case for weekly working hours above 50 hours (Spurgeon, 2003), a major goal of the limitation of working hours was to ensure an adequate recreation time for workers. While some industries started to implement 40-hour work weeks in the 1920s, in many countries it was only the support of labour unions which enabled a statutory maximum of weekly working hours as low as 40 hours on a national level. In Austria, the labour union managed to push through a regular 40-hour work week in 1970, which was implemented in stages until 1975 (Lackinger, 2020). Figure 1 shows that the average annual working time per worker has decreased steadily after World War II from an average of 2086 hours in 1950 to an average of 1613 hours in 2017.

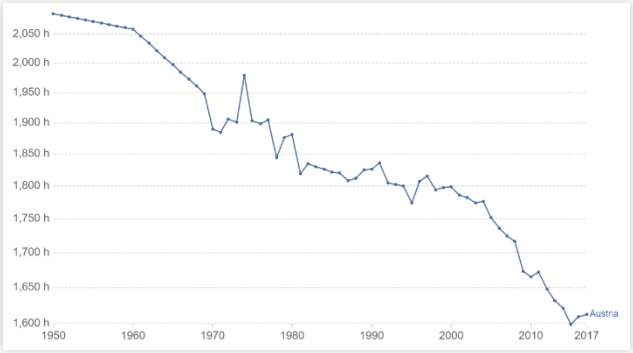

Figure 1 - Average annual working time per worker in Austria

Source: Huberman & Minns (2007) and Feenstra, Inklaar & Timmer (2015)

Retrieved from: Giattino, Ortiz-Ospina & Roser (2013)

Even though this paper finds that a further reduction is of interest for the majority of Austrian workers, labour unions are well aware that further working time reductions cannot be implemented in all economic sectors (e.g. medical care) and that every suggestion of lower working hours leads to headwind from employers' associations. Labour unions find support from economists who are part of the degrowth movement and suggest lower working hours combined with more social and environmental benefits in order to reduce industrial production and thus environmental damage (Schiemann & Wilmsen, 2017). Additionally, labour unions are supported by scientists and politicians who claim that a reduction of working hours would lead to a better health status and a fairer distribution of working time, which again would allow for more time spent with the family (Ahn, 2016; Spiegelaere & Piasna, 2017; Zerbes, 2020). Furthermore, there are many economists who argue that working time reductions would reduce unemployment rates, an assertion which remains highly controversial (Bosch & Lehndorff, 2001).

This paper investigates two factors which severely influence the political decision-making in the design of labour market policies. The first of these two factors is the required wage compensation. The according problem can be formulated as:

For a desired working time change, what is the wage compensation which would be required?

The obtained value provides strong information about the financing and implementation of potential statutory working time reductions. It shows what share of their initial income individuals would require for a certain working time change and thus how big the burden is that the company and the state would have to carry in order to compensate the potential change in the wage rate.
The second of the discussed factors is the uncompensated wage elasticity. The according problem can be formulated as:

What would be the percentage change in labour supply as a reaction to a one-percent change in the wage rate?

The obtained value is commonly used for implications on labour market policies (Evers et al., 2008). It shows whether increasing wage rates would induce workers to reduce their working time due to large negative income effects or to increase their working time due to dominant substitution effects.

In order to obtain the required wage compensation for desired working time changes one first needs to address the individual's current working hours and desired working hours. There has been elaborate research on the topic of desired working hours which in general concludes that the desire for working time changes is widespread in the population (Başlevent & Kirmanoğlu, 2014; Bloemen, 2008; Merz, 2002). In this context, the paper's contribution does not go beyond an updated representation of the desired working hours for the Austrian population associated with the individuals' characteristics.

The other necessary component to compute the required wage compensation for desired working time changes is the individual's income and the indicated required income for the desired working time change. While there are several suggestions for working time models which take into account wage compensations, there has been almost no research on the required wage compensations of workers. In Austria, the party SPÖ suggested a model with the workers only working 80% of their original working time but receiving 94.9% of their original income (Zerbes, 2020). A similar model was proposed by the Austrian labour union GPA. Their idea consists of a working time reduction to 80%, too. And whenever four workers voluntarily reduce their working time to 80% and a fifth worker is employed, the income is only reduced to 90%. The difference in costs is covered by the Employment Service Austria (AMS) (Bachmayr-Heyda, 2020). A survey conducted by the Austrian labour union ÖGB found that this model is supported by 64% of the participants (GPA-djp, 2020), which may be an indication that a compromise with Austrian Economic Chamber and employers' associations could be possible, since working time reduction would not have to come with full wage compensation. However, the only research on required wage compensations that could be found is from 1996 (Buschoff & Rückert, 1998). Moreover, this study did not explicitly calculate required wage compensations but solely asked participants who stated that they would like to reduce their working time whether they would require the same income as before or accept a lower income. This paper's contribution is the computation and thorough analysis of the required wage compensations of Austrian workers. Explicitly asking for combinations of income and working hours yields comparable values for all individuals.

The final contribution of this paper is the computation of labour supply elasticities for the Austrian working population, replicating the methodology which was used by Collewet, Borghans and Seegers (2018) for the German working population. Labour supply elasticities are an important tool for the determination of employment responses to tax reforms (Graafland et al., 2001). Additionally, in general equilibrium models they point to the magnitude of the efficiency cost of income taxation (Ballard et al., 1985). Therefore, the obtained estimates of labour supply elasticities for the Austrian working population may serve as a helpful reference in the design of labour market policies.

This work consists of six sections. The introduction describes the relevance of the topic and explains the research issues together with the paper's contributions to the literature. In the second section, the theoretical foundations are introduced with a historical background of the development and the perception of working time. The section continues with the presentation of the neoclassical model of labour-leisure choice, which is the basis for the computation of labour supply elasticities, then provides a brief insight in degrowth theories and their ideas of working time in the future and finally gives an overview of obtained elasticity estimates in the past decades. The third section consists of the hypothesising for the three different partial analyses: the desired working hours, the required wage compensations, and the labour supply elasticities. It is followed by the fourth section, in which the

methodology for the analysis of the research issues is presented. The fifth section contains the presentation of the results for the three empirical investigations. The sixth section contains the discussion of the results, including limitations and implications for social and political measures. Finally, the seventh section provides a short conclusion.

2. Theory on working time and labour supply

While labour supply was characterised by substantial changes in working time during the last centuries, the economic discussion on labour supply also changed with developments in production technology and labour market policies. While most of the past contribution to the analysis of labour market mechanisms results from positive questions, the degrowth movement can be classified as normative economics. In this chapter the changes in the perception of labour supply and working time are highlighted. Focusing on neoclassical theory, the chapter offers a short overview of the theories that have attempted to explain the relationship between wage and the number of working hours supplied to the market in the course of time. For a historical perspective to the determination of labour time I mainly refer to the historical overview provided by Contensou & Vranceanu (2000). Finally, a variety of estimates for the labour supply elasticity are presented.

2.1. Mercantilist theory

Before the end of the 18th century, Mercantilists assumed workers' preferences over leisure and working time and thus their decision about labour supply to solely depend on the income necessary to afford subsistence. Therefore, feudal structures and a lack of competition would have allowed employers to determine wages directly and working time indirectly. But since Mercantilists observed a shortage of workers as well, working time was assumed to be influenced strongly by the worker's preferences.

The employees' elasticity of labour supply with respect to the wage rate was expected to be negative, since the worker's objective of receiving an income that would suffice for subsistence, i.e. a constant value, implied that working time would decrease following an increase of the wage. The negative elasticity of labour supply indicated that employers were not able to influence both wage rates and working time simultaneously. This finding results from the consideration that an employer, who would have been able to influence both, would have certainly made sure that working time does not decrease as a consequence of wage increases.

2.2. Classical theory

Even though the classical political economy made important contributions to the understanding of trade and market mechanisms in the late 18th century and the first half of the 19th century, it remained mainly silent about the determination of working time. There was a consensus about an excess supply of workers, but it was only Marx who discussed working time explicitly. With common 12 hour working days during the European industrialisation, both employers' power and workers' health became a concern to Marx. Due to the employers' power, he identified a conflict generating imbalance between labour demand and labour supply. Workers were unable to determine their working time, since employers paid the workers' subsistence, and could therefore determine the labour to their desired extent - which was only regulated by law at a high level. Therefore, according to Marx, in a capitalist system such as the one he faced in the 19th century, workers were object to exploitation. They were rented at the price of subsistence and could not express individual working time preferences.

Unsurprisingly, a survey by Horner from 1848 showed that a vast majority of workers wished to reduce their working time. But what is striking is that the workers were also willing to accept a decrease of their daily income, even though in practice, this would mean they would not be able to pay their subsistence anymore.

2.3. Neoclassical theory

This section presents the main model used in this thesis. To describe the neoclassical model of labour-leisure choice I mainly follow the explanations of Borjas (2016).

Neoclassical theory, which followed the classical political economy and still dominates economic sciences, brought radical changes in the discussion about labour supply and working time preferences. Neoclassical theory makes assumptions about the individual's behaviour and preferences which result from individual economic liberties. The choices of a homogenous group of individuals combined with concepts of marginal utility and cost (or disutility) are used to explain market equilibria. While companies are assumed to maximise their profit, individuals are considered rational utility maximisers. This utility maximisation happens through the consumption of goods and leisure. The neoclassical model of labour-leisure choice is a static model and is based on the individual's necessity to work in order to consume. Therefore, it represents the trade-off between working time and leisure, where the former provides a disutility, which must be compensated for by the payment of wages, and the latter is considered a desired good. Everyone is free in the decision about how much time to spend supplying labour and how much time to spend enjoying leisure time at flexible prices. In the neoclassical model of labour-leisure choice, these prices work as wages and enable the efficient allocation of labour supply and labour demand (Borjas, 2016). This is due to the assumption that the worker's decisions are determined by the wage and the maximisation of their own well-being, while the wage is determined by the interaction between labour supply and labour demand (Sesselmeier & Blauermel, 1998).

The worker's decision depends on the individual's preferences and both a time and a budget constraint. The time constraint does not allow a worker to work more than 24 hours a day. There are also models in which eight hours of sleeping time are deducted, so that theoretically a worker can work no more than 16 hours a day (Elder et al., 2020). The budget constraint restricts the worker's income on possible combinations of working hours and wage. In Figure 2, this constraint is depicted by the blue line. A worker with a weekly non-labour income of $100 and no labour supply could consume goods for $100 per week, independent of the wage rate (Point E). At point A the same worker could consume goods for $1000, because at an hourly wage rate of $10 he/she would earn a weekly labour income of $900 additionally to the weekly non-labour income of $100 if he/she had a weekly working time of 90 hours. If the same worker decided to work 110 hours per week at an hourly wage rate of $10, his/her allocation of working time and consumption would be at point F. But if the worker had a choice, he/she would choose the allocation at point P where he/she works 40 hours per week and receives a labour income of $400. This is because at point P the slope of the worker's budget constraint equals the marginal rate of substitution of his utility function U*.

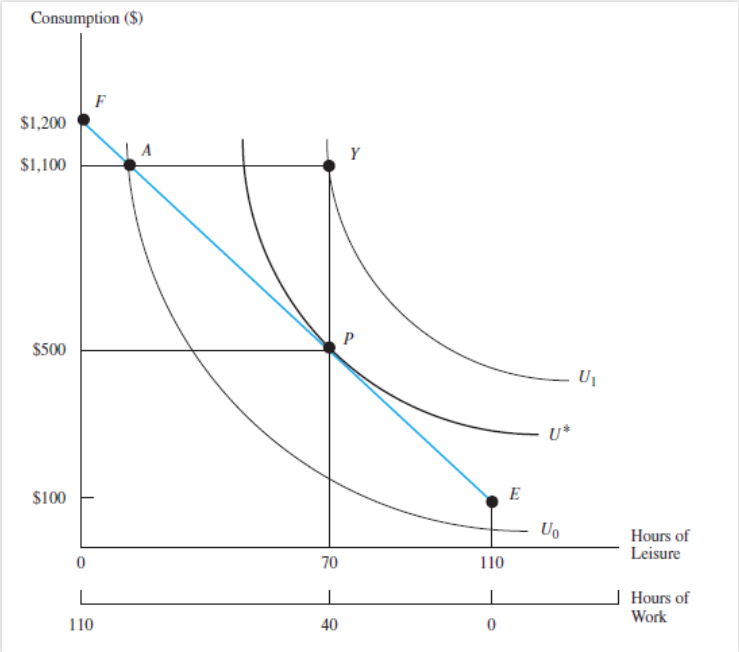

Figure 2 - The static model of labour-leisure choice

Source: Borjas (2016)

Neoclassical theory assigns utility functions to the workers, which depend on their preferences for leisure and consumption (i.e. income), so that it is mathematically possible to find each worker's optimal working time, given the wage. For a certain level of well-being, the utility function describes all combinations of consumption and leisure between which the worker is indifferent. Therefore, utility functions for a certain level of well-being are also referred to as indifference curves. Deriving the marginal utilities of consumption and leisure from the utility function, one obtains the marginal rate of

substitution. It describes how much consumption a worker is willing to give up in order to enjoy more leisure time and vice versa. While workers have different preferences and thus utility functions, it is natural to assume that they all have a diminishing marginal utility of leisure. Given the wage, a worker will choose a ratio of leisure and working time which gives him/her the highest possible level of well-being. This level is achieved where the marginal utility of leisure equals the compensation for the marginal disutility of work. In other words, it is achieved where the marginal rate of substitution equals the wage rate (point P in Figure 2). A worker therefore increases working time as long as the marginal utility of wage is larger than the marginal utility of leisure. Once the benefit of an additional marginal unit of leisure time outweighs the benefit of an additional marginal unit of wage, the worker will stop supplying labour.

The main problem about this optimisation is that utility functions and consequently also marginal utilities and disutilities cannot be observed. Therefore, on the one hand indifference curves do not show true preferences and on the other hand it is barely possible to measure differences in indifference curves across individuals. Additionally, flexible wages would bring about permanently changing preferences, since preferences most likely dependent on income (Borjas, 2016).

According to neoclassical theory, the optimal working time therefore neither depends on the payment of wages as securing of subsistence nor on a scarcity or an excess supply of workers, but it is chosen freely by every individual. Since the hours supplied by workers exactly meet the market demand due to a system of relative prices, there is no unemployment. This implies two kinds of equilibria: An external equilibrium, stating that every person who wants to work finds a job for the market wage; and an internal equilibrium, stating that every worker works the desired number of hours (Contensou & Vranceanu, 2000).

Jevon further argues that long term labour supply is mainly influenced by demographic facts, while short term labour supply is determined solely by the workers' desired number of hours (Jevons, 1879). Additionally, Marshall sees workers' mobility and the competitive advantages of firms that would comply with the workers' working time desires, as a reason why working time is ultimately determined by the workers (Marshall, 1920).

Since workers are considered a homogenous group in neoclassical theory, from the preferences of a single worker one can infer the optimally supplied hours of work at any given wage for any worker in the economy. Plotting all combinations of wages and working hours for a worker then constitutes the individual labour supply curve. To obtain the aggregate labour supply curve the individual labour supplies are added up, so that the relation between the number of person-hours supplied and the wage is revealed. The slope of the individual labour supply curve of course depends on the preferences of the worker, but is usually expected to be positive, because workers who maximise their well-being are assumed to increase their working time following a wage increase (Sesselmeier & Blauermel, 1998).

The slope of the aggregate labour supply curve is less steep, and the curve is shifted to the right compared to the individual labour supply curves. This is because it is generated by horizontally adding many individual labour supply curves and because the higher the wages the more people are willing to join the labour market (Burda, 2013).

Whether the slope of the labour supply curve is positive depends on the strength of two effects that follow an increase of the wage. On the one hand, an income effect induces the demand for leisure as a normal good to increase, because technically income increases, and the same amount of consumption can be afforded with a reduced working time. On the other hand, the opportunity costs for leisure increase, since more money must be given up for every hour spent on leisure. The incentive to increase working time because of the additional money that can be earned through higher wages is called substitution effect. If the income effect dominates, the labour supply curve has a negative slope. If the substitution effect dominates, the slope is positive. Through an extension of the basic neoclassical model of labour-leisure choice, neoclassical theory also allows for a backward-bending individual labour supply curve, where the substitution effect dominates at lower wages and the income effects dominates at high wages.

In the literature there are different ways to assess if the substitution or the income effect dominates in the labour supply of any given market. One approach tries to estimate elasticities locally. In this case the sign of the wage elasticity of labour supply shows which of the two effects dominates. It describes what percentage the number of supplied hours of work change following a wage increase of one percent. If the elasticity is positive, an increase of the wage rate leads to an increase of labour supply, which means that the substitution effect dominates. If the labour supply elasticity is negative, an increase of the wage rate leads to a decrease of labour supply, which means that the income effect dominates.
The other approach tries to estimate labour supply and therefore uses the regression model

$$h_i = \beta w_i + \gamma V_i + \text{Other variables} \tag{1}$$

where for every individual, i, the numbers of hours worked, h_i, are related to the wage rate, w_i, and the individual's non-labour income, V_i. While the coefficient γ measures the impact of a one euro increase on the supplied hours of work, holding the wage constant, the coefficient of interest for the determination of the dominance of an income or substitution effect is β. It measures the impact of a one euro increase on the supplied hours of work, holding the wage constant. A negative value of the coefficient β indicates that the income effect dominates, since a wage increase induces a decrease in hours of work. A positive value of the coefficient β therefore means that the substitution effect dominates (Borjas, 2016).

Borjas (2016) offers a review of the different empirical approaches to estimating labour supply within neoclassical theories. He shows that empirical studies found various estimates for the labour supply elasticity, where all values from large negative numbers to large positive numbers were supported. Empirically the most credible estimate for prime-age men appears to be a value of -0.1, which leads to the conclusion that the income effect dominates. But there is evidence that the labour supply elasticity for women differs from the labour supply elasticity of men and that there are differences in the elasticity between age groups as well.

Neoclassical theory on labour supply has been subject to criticism due to its reliance on partly unrealistic assumptions about the labour market such as perfect competition, complete information, perfect mobility, a homogenous group of workers and flexible wages. These assumptions are necessary to enable a mathematical model but do usually not hold in real observations.
Sesselmeier & Blauermel (1998) provide a critical review of some of these assumptions. They state that perfect competition, which is necessary for the wage to work as an allocation mechanism, can hardly be observed in practice, since markets are often characterised by a few market participants with a relatively high market power, such as labour unions, employers' associations, and the state. Additionally, many implications of the model rest on the assumption that workers constitute a homogenous group, but indeed an economy consists of many different individuals with different preferences for working time and wages. While some workers' preferences are in accordance with the neoclassical view that working time provides a disutility, surveys show that indeed many people want to work independent of their income. In a representative German study from 2018, only 15% of the participants indicated that they would stop working, if they received an unconditional basic income of 1500 euros per month (Splendid Research, 2018). In an Austrian study from 2018, only 2.9% of the participants stated that they would stop working, if they received a monthly unconditional basic income of 800 euros, and 33.9% stated they would stop, if they received 2000 euros per month (Wirl & Pfefferle, 2018). Additionally, the model relies on the false assumption that workers can freely choose and offer their working time in any desired proportions and yet find the according labour demand (Priewe, 1984). Priewe further criticises that the individual labour supply function, whose crucial dimension is working time, is generalised too easily when it is transferred to an aggregate labour supply function. This is because the latter is multidimensional, since it contains the number of workers, working time, working intensity and qualification.

2.4. Degrowth theory

Degrowth theory does not specifically investigate the individual's preferences on working time, but instead criticises the neoclassical assumption of perfect competition, since there is a lack of internalisation of external effects in production processes. This causes an excess of production so that labour demand is higher than the level needed for a sustainable amount of production. Therefore,

degrowth movements are inherently unsuitable bases for economic models, but can be seen as global future prospects. These include alternative economic and social guidelines which are supposed to slow down economic growth and can be implemented through political and civic action. One of the suggestions of alternative economic and social guidelines is the reduction of working time, which is discussed in this chapter.

Jackson (2009) considers working time policy to be crucial for the design of a sustainable economy. He relates the number of working hours to economic output. The relation can be described as output being "equal to the number of hours worked multiplied by the labour productivity" (Jackson, 2009, p. 180). Therefore, if the economy is to be sustainable, i.e. output is constant or decreasing, with increasing labour productivity this goal can only be achieved with a reduction of working hours. Additionally, several field studies have shown that labour productivity increased when the working time was reduced. Following the logic of the above-mentioned equation, the demand for reduced working hours is unavoidable. Jackson emphasises that a potential increase in unemployment due to a decrease in total hours worked should be accounted for by sharing the available work more evenly across the population. Reuter (2000) agrees with this reasoning and further argues that non-remunerated activities need to be considered more attractive compared to remunerated work. This change in perception of work is assumed to be crucial for the implementation of reduced working hours since workers would have to accept stagnating or decreasing wages in their remunerated work. Passadakis and Schmelzer (2011) see a substantial working time reduction as an important lever to avoid that the new composition of investments, consumption, work, and productivity would lead to a recession. Like Reuter, they point out that stagnating or decreasing wages would have to be accepted. But their idea of the implementation of a working time reduction includes a full wage compensation for lower income groups.
Latouche (2015) considers four necessary factors for a sustainable economy, out of which the first three would increase the amount of work and the fourth would decrease it. The first factor is the decrease in production, which would result from a renunciation of environmentally harmful technologies and wasteful industries. The second factor is the termination of the exploitation of the global south, which would lead to a relocalisation of economic activities. The third factor is the creation of jobs in environmentally and socially acceptable economic sectors. The fourth factor is the renunciation of unnecessary consumption, which subsequently would reduce the amount of work. Since supply reserves are huge, Serge argues that the last factor alone could lead to a decreasing amount of work in total, which could be satisfied through a reduction of working hours.

At the same time, economists and sociologists are sure that a reduction of the working time is neither easy to implement nor practicable in all sectors. Bosch (2002) argues that a reduction of working hours succeeds when the income distribution is stable and relatively equal. And Zinn (2014) points out that

some sectors such as the medical and the social employment sectors already face underemployment so that a working time reduction does not make sense everywhere.

2.5. Empirical findings about labour supply elasticities

Labour supply elasticities have been subject to empirical studies for many decades. This section provides an overview of the research that has been done in this field and presents the findings on labour supply elasticity estimates.

For the estimation usually two different approaches are chosen. Some economists use static labour models, which were extended to structural discrete-choice models more recently, while other economists use dynamic life-cycle models. According to Keane (2011), in static utility models there exist no intertemporal linkages so that the individual's utility in period t solely depends on consumption and leisure in period t. Dynamic models, on the other hand, allow for borrowing and lending across periods so that individuals choose "a life-cycle labor-supply/consumption plan that maximizes the present value of lifetime utility" (Keane, 2011, p. 970). Elder et al. (2020) mention three advantages of the extension of static labour supply models in form of a structural discrete-choice model. The first advantage is the incorporation of non-participation into the labour supply decision so that both extensive and intensive margins can be analysed in a common framework. The second advantage is that the structural discrete-choice model allows "to utilize plausibility exogenous variation in wages caused by variation in the marginal tax rate across states and across time" (Elder et al., 2020, p. 8). Finally, both fixed costs of working and non-linear budget constraints can be incorporated in a structural discrete-choice model.

Throughout all these studies there has only been little consensus on the exact magnitude of labour supply elasticities that should be used in economic policy analyses (Evers et al., 2008). While the first empirical approach still found elasticities somewhere between -0.1 and -0.2 (Douglas, 1934), recent studies find that male labour supply elasticities are usually positive and small, with only some exceptions like Germany (Bargain & Peichl, 2016). Generally, there has been huge variation in the magnitude of labour supply elasticities in the literature. However, economists agree that labour supply elasticities are larger for women than for men and largest for married women (Bargain et al., 2014). Additionally, economists typically find that the elasticities at the extensive margin exceed those at the intensive margin. This finding helps to explain why labour supply elasticities of women are found to be larger than those of men, because women normally show a lower participation rate (Evers et al., 2008).

Several reasons for the large variation in estimates are investigated in the literature. A small share of the variation is found to be caused by differences in work preferences across countries. But Bargain and Peichl (2016) propose two different factors that are mainly responsible for the variation. On the one

hand, the period of investigation plays a crucial role, since working preferences are assumed to change over time. On the other hand, the estimation method and the model specification have a big impact on the obtained estimates. Further factors influencing the results are the country with its institutions and labour market characteristics as well as the demographic group. Additionally, Bargain et al. (2014) emphasize that the chosen type of data such as tax register data or survey-based data may explain parts of the variation. Evers et al. (2008) specifically investigate which study characteristics and control variables have a significant impact on the elasticity estimates and find that controlling for family situation and age influences the obtained estimates significantly. While controlling for the age leads to a less elastic reaction to a change in the wage rate for men, it leads to a more elastic reaction for women. Controlling for the presence of a family decreases the obtained estimate of the labour supply elasticity for men by 0.16, indicating that men who have a family react less elastically to changes in the wage rate. For women, on the other hand, controlling for the family size has a strongly negative impact on the estimate of the labour supply elasticity. The larger the family the less elastically women react to changes in the wage rate. This is in line with the finding that controlling for the presence of a child decreases the estimate by 0.79 for women. However, if one controls for the presence of a child younger than age 6 this leads to an increase in the uncompensated wage elasticity for women. These findings show that it is important to investigate the influence of age and the presence of a family on the uncompensated wage elasticities in this sample.

As a basis for my hypotheses on labour supply elasticities I use different papers and their findings, which I present in the following section.

Bargain et al. (2014) compare labour supply elasticities for 17 European countries and the USA using a harmonised empirical approach for a dataset which has comparable variable definitions and thus enables an estimation of the same labour supply model for each country. This approach is supposed to examine measurement differences of elasticities which are caused by data selection, period of observation and estimation method. Bargain et al. find that labour supply elasticities are "relatively small and much tighter across countries than suggested by results in the literature" (Bargain et al., 2014, p. 726). The estimates for married women are the highest and lie in a narrow range between 0.2 and 0.4 with a mean of 0.27, while they are low for married men with a mean of 0.1. Single mothers and single childless women are pooled and show a variation of elasticities between 0.1 and 0.5, the elasticities of single men range from 0 to 0.4. For Austria, these estimates are from 1998. For married women, the elasticities from 1998 were among the highest of the observed countries with a mean value of approximately 0.33. For single women, on the other hand, they are among the lowest with a mean value close to 0.13. Single men show a similar mean value which is also to be found among the lowest observed. Even though there is only very little variation of the elasticities of married men between the observed countries, the mean value of approximately 0.07 for Austrian married men is located in the middle range.

Bargain and Peichl (2016) provide an extensive survey of old and recent studies which estimate static labour supply elasticities in Europe and the USA. The oldest of the studies they chose are from the early 1980s and the most recent is from 2013. They cover studies based on the Hausman method, studies based on structural discrete-choice models and studies in form of natural experiments. Their finding is that single mothers have the highest mean elasticity of 0.59, followed by married women who show a mean elasticity of 0.43. One has to bear in mind, though, that the single mothers' estimates are spread over a wide range of values. The elasticity of childless single mothers is lower with a mean of 0.23, while men both married and single show the lowest mean elasticity (mean value 0.12).

Evers et al. (2008) perform a meta-analysis which is based on estimates of uncompensated labour supply elasticities for a few European countries and the USA. In contrast to Bargain and Peichl they solely focus on estimates that were obtained with the Hausman approach. In their paper, Evers et al. investigate whether there are systematic differences between countries or other systematic impacts of different factors such as gender, labour participation, estimation method and model specification. This is done through a regression of the elasticities on underlying study characteristics. They find mean elasticities of 0.43 for women and 0.07 for men but face the same issue as Bargain and Peichl that the women's elasticities show great variation. Leaving out elasticities that differ more than two standard deviations from the sample mean, the mean elasticity for women decreases to 0.34.

Blundell and MaCurdy (1999) present alternative approaches for the modelling of labour supply and in this context report median labour supply elasticities of 0.08 for men and 0.78 for women which are based on several studies from 1981 to 1992.

For the elasticity of married women Arellano and Meghir (1992) develop an empirical model of labour supply for the U.K. and find a strong positive substitution effect and a negative income effect. Together these two result in a sample mean for the labour supply elasticity which is about 0.4.

Pencavel (1986) provides an overview for the uncompensated wage elasticities of married men in the U.K. and shows that several studies have concluded that the mean elasticity is negative. Depending on the study the obtained estimate means range from -0.004 (Blundell & Walker, 1983) as the smallest negative value to -0.23 (Blundell & Walker, 1982) as the largest negative value. Brown, Levin, Rosa, Ruffell and Ulph (1983) additionally find that the mean uncompensated wage elasticity for married men with two children is of a larger negative magnitude (-0.14) than the one for married men without children (-0.06). Bessho and Hayashi (2005) show that the average values for the uncompensated wage elasticities of married men listed in the 28 surveys by Pencavel (1986) are -0.08 and for the ones listed in the 19 surveys by Blundell and MaCurdy (1999) are 0.09.

Pencavel (2002) argues that there is no incompatibility in labour supply research with small and possibly negative uncompensated wage elasticities for single men. The obtained results crucially depend on which instrumental variables he uses in his equations. When he uses trade variables as instrumental variables, he obtains estimated coefficients for the uncompensated wage elasticity of -0.139 for white men and -0.122 for black men. When instead the wages and non-labour income of unmarried women

are used as instrumental variables, he obtains an estimated coefficient of 0.25 for white men and 0.121 for black men. He concludes that the estimated parameters show a high sensitivity to control variables.
Elder et al. (2020) put emphasis on the development of the wage elasticity of labour supply over the last three decades. They discuss two major reasons that can explain a change of the elasticity over time in the canonical model "where jobs are only indexed by wage and workers can freely choose their hours" (Elder et al., 2020, p. 5). The first reason is a secular change in wages or non-labour income which influence the uncompensated wage elasticity through the income effect. The second explanation is a change in the tastes for work. Indeed, Elder et al. find substantial changes in labour supply elasticities for most groups from 1994 to 2017. For married women it increased from 0.252 to 0.279, while for single women it decreased first from 1994 to 1999 and then increased to 0.265 in 2014, which means that in the range from 1994 to 2014 it has not changed substantially. For married men it increased from 0.082 to 0.108 between 1994 and 2017 and for single men it increased from 0.046 to 0.113.
Finally, Collewet et al. (2018) find a mean uncompensated wage elasticity of labour supply of -0.104 which is composed of a substitution effect of 0.106 and an income effect of -0.209.

I refer to the three follwing papers when building my hypotheses on income elasticities.
Kimball and Shapiro (2008) use a hypothetical question to examine the individuals' income elasticities. Individuals are supposed to imagine a lottery win which is paid monthly and amounts to the monthly family income. Then they have to indicate the number of hours they would still work after such an increase in non-labour income. While 56.3% of the individuals state that they would quit work, about one-fifth states that they would not change their hours of work. The remaining 22.5% report that they would reduce their working time. These results imply a large income elasticity.
In the paper whose methodology I mainly follow, Collewet et al. (2018) find quite contrary results. In their survey only 15% indicate that they would quit work, while about 63% state that they would reduce their working time. With these responses they obtain a mean income elasticity of -0.135. The contrary results are explained through the demographic composition of the sample, because Kimball and Shapiro (2008) use a sample of individuals aged 50 and older who might consider a lottery win an option to retire earlier.
The third paper has already been discussed in the course of the uncompensated wage elasticity: Bargain et al. (2014) present a table of income elasticities for 17 European countries and the USA. Austrian workers' income elasticities range in the midfield with both men and women having elasticities of approximately zero. Only for married women they are slightly below zero, but of no magnitude any bigger than -0.001.

3. Hypotheses

Whether labour market policies such as the ones suggested by degrowth economists are practicable depends crucially on the worker's preferences on labour supply.

Specifically speaking, for degrowth theories to be implemented, on the one hand workers need to be willing to work as little as 30 or fewer hours per week, and on the other hand at least middle and upper-income classes need to be willing to also reduce their income when reducing working time. Therefore, in a first step I investigate the differences between actual hours worked and desired hours of work. Of interest in this context is the wage compensation that would be required for the acceptance of the desired change in working hours.

If one goes beyond the consideration of the specific requirements for degrowth theories, the individual's labour supply elasticity is an important tool to analyse the trade-off between income and leisure. It shows how individuals react to wage increases and thus provides an information which is helpful for the discussion of policies such as the taxation of labour income or labour market policies (Collewet et al., 2018). Using hypothetical questions on working time and income, I obtain estimates of income and substitution effects and use these to calculate the uncompensated wage elasticity.

In this chapter I present my hypotheses on desired working times, required wage compensations and labour supply elasticities. For the building of my hypotheses on desired working times and required wage compensations, I refer to recent surveys and studies, while for my hypotheses on labour supply elasticities I refer to the literature overview provided in chapter 2.5.

3.1. Working time preferences and individual characteristics

According to neoclassical theory, in an equilibrium the observed hours worked should be optimal, but due to unrealistic assumptions which were discussed in Chapter 2, one can assume that the desired hours of work do not always equal the observed hours worked. This assumption is supported by several surveys conducted in recent years. A survey commissioned by "ver.di" in 2019, which addressed working time topics for civil servants in Germany, found that 57% of the participants would prefer to enjoy a wage increase that would allow them to reduce their working time rather than receiving a higher income at the same number of working hours (Stuth, 2019). A survey from July 2020, which was run within the Austrian Corona Panel Project, showed that 54% of the participants wished to decrease their working time, while only 28% wanted to keep their current working time and 18% wanted to increase it (Ennser-Jedenastik & Windisch, 2020). One must bear in mind, though, that the surveys only asked for the desired working time and did not link the expressed desire to income changes.

Additionally, in many countries we find statutory working hours for a wide range of jobs. Since workers are unable to choose their working time in this case, for their fixed combination of working hours and income, the wage rate may not be equal to the marginal rate of substitution. Point A in Figure 3 shows

the allocation of an individual that has a statutory working time of 35 hours per week. Given the wage, however, the individual would prefer to work only 20 hours per week (point B) if he/she could choose. Because statutory working hours usually range from 35 to 40 hours per week, I would judge that this problem mainly occurs for workers who desire working time reductions.

Figure 3 - Statutory working hours may not be optimal

Both the surveys' findings and the theoretical approach of possible non-optimal statutory working hours lead me to the hypothesis that on average the desired working time is lower than the actual working time and that the former settles at about 32 hours per week (Karlsböck, 2020).

But I further assume that the desired working time depends on both the actual working time and the individual's characteristics such as income, age, and job situation. I expect the desired working time change to be of a higher negative magnitude for those individuals that have higher working hours already and maybe even positive for individuals with little working hours, so that a negative correlation between the desired working time change and actual working time can be observed. A similar relationship is expected for the desired working time change and the individual's income, since workers in upper-income classes work more overtime hours than workers in lower-income classes (Wolter, 2018) and thus are expected to have a stronger desire to reduce their working time. Additionally, even though opportunity costs for hours not worked are higher for workers in upper-income classes, these workers do not depend on additional income as much as workers in lower-income classes do. Because an individual's income and their level of education are assumed to be strongly positively related, for the relationship between the desired working time change and the level of education a negative correlation is expected, too. An aspect that might have reinforced this negative correlation is the fact that jobs which

require a higher academic degree can be more easily executed from home-office. And during the COVID-19 pandemic nearly all such jobs had to be carried out from home-office, so that many workers enjoyed the benefits of not having to commute and thus were able to enjoy more leisure time and spend more time with their families. Finally, I expect an inverse relationship between the desired working time change and the individual's age, because an increased welfare over the last decades resulted in a shift in the idea of work-life balance for the young. A survey from 2018 showed that younger generations seek lifestyles with fewer working hours and more flexibility than their parents' generation (Howington, 2018). Additionally, older people might not see many reasons for changing their working time, when they are closer to their retirement and have established a routine for working hours.

3.2. Required wage compensation in income groups

While labour unions often demand a working time reduction with full wage compensation (*4-Tage-Woche in Österreich? - Aktuelle Studie Bestätigt Vorteile Der Arbeitszeitverkürzung Für Belegschaft Und Unternehmer*, 2019), the industry usually claims that the implementation of such a demand would be financially unbearable for the employers (dpa, 2020). The information about the necessary wage compensation for a working time reduction could therefore be valuable for both labour unions and employers in the context of negotiations. Additionally, it is also valuable in terms of labour market policies because some degrowth theories suggest working time reductions with full wage compensation for lower-income classes and no or some wage compensation for middle- and upper-income classes.
I was not able to find studies which specifically investigate the required wage compensation in percentage terms for a desired working time change. Therefore, I can only build my hypothesis on a Eurobarometer survey from 1996 (Buschoff & Rückert, 1998), which asked participants whether they would require full wage compensation, no wage compensation, or *some* wage compensation for the realisation of their desired working time reduction. This survey lacks the crucial information about a detailed and thus complete image of the participant's preferences, but it showed that in Europe, 25% of the workers were willing to reduce their working time without receiving any wage compensation and 28% were willing to reduce their working time while receiving *some* wage compensation. Out of the 51% of Austrian workers who were willing to reduce their working time, 65% of these were willing to do so with no or *some* wage compensation.

As the results are from 1996 and - taking into consideration that meanwhile approximately 50% of workers are born after 1996 (Lettink, 2019) - the average attitude towards work has definitely changed since then, I assume that out of the workers desiring a working time reduction, a substantial majority of more than 70% is willing to accept an income lower than the current one (i.e. is willing to reduce working time without full wage compensation).

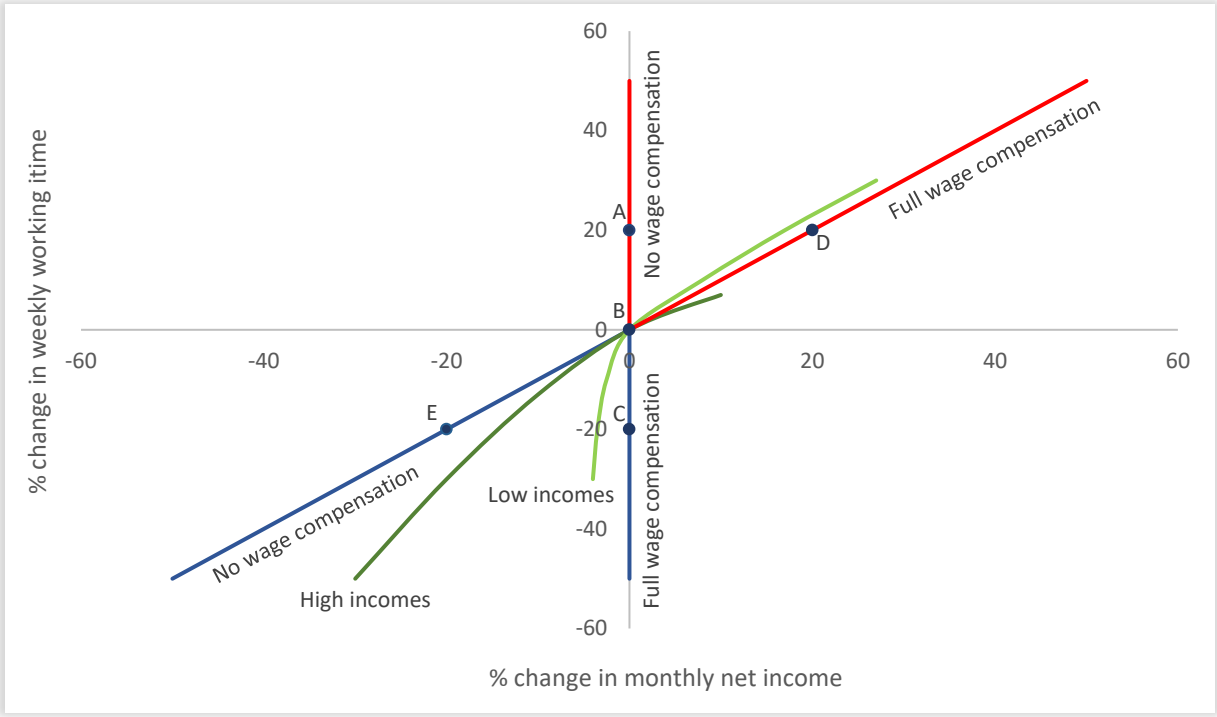

Figure 4 - Expected quadratic fit of desired working time change and required income change

Figure 4 illustrates the expected quadratic fits of the required wage compensations for both high-income and low-income groups. For the understanding of this illustration it is crucial to know that in the range of working time increases, i.e. for positive values of y, no wage compensation means that workers work the additional hours without receiving any additional income. Therefore, it is reflected by the y-axis for positive values of y. For instance, point A shows an individual that desires a working time increase but does not require a change in monthly net income, so that the wage rate over all hours decreases.

In the range of working time decreases, i.e. for negative values of y, no wage compensation means that workers accept that their wage decreases at the same rate as their working hours. Therefore, no wage compensation in the range of working time reductions is represented by the 45-degree line in the range of negative values for y. An individual at point E would require no wage compensation for a working time reduction as he/she would like to decrease his/her working time by 20% and also would accept an income decrease of 20%.

Full wage compensation in the case of desired working time increases means that the worker's income increases proportionally to the working hours, so that the wage rate over all hours stays the same. This relationship is reflected by the 45-degree line above the x-axis. An individual at point D would require a full wage compensation for a desired working time increase of 20% because the required monthly net income is also 20% higher than the initial monthly net income.

In the range of working time decreases, full wage compensation means that the individual would not accept a change in its monthly net income when reducing the working time. Therefore, full wage compensation in case of desired working time reductions is reflected by the y-axis for negative values

of y. An individual at point C would desire a working time reduction of 20% but would require that the income stays the same.

Particularly high-income groups do not rely on their labour income as much as low-income groups do. I refer to high-income groups as the workers above the 75% quantile of the income distribution in the underlying sample, and to low-income groups as the workers below the 25% quantile.
Taking into consideration that especially workers from upper-income classes work overtime hours, I do not only expect these workers to desire stronger working time reductions than workers in low-income groups, but I also expect them to be willing to forgo more of their income in order to reduce their working time. These expectations are represented by the dark green curve in Figure 4. Workers with high incomes desiring stronger working time reductions is shown by the dark green curve reaching down to large negative values for y. And the same workers willing to forgo some of their income in order to reduce their working time is shown by the curve running closer to the line of no wage compensation than to the line of full wage compensation.
On the other hand, I expect low-income workers predominantly not to desire working time reductions, and if so, to a smaller extent. This is reflected by the light green curve which does not reach down far in the range of negative values for y. Additionally, in case of a desire for a working time reduction, I do not assume low-income groups to be willing to reduce their current income, and if so, only weakly. This assumption is represented by the light green curve which is not shifted far to the left from the y-axis and thus runs close to the line of full wage compensation.

Regarding the desire for an increased working time, it seems obvious that hardly any worker would want to increase his/her working time while keeping income constant. Some might accept additional hours at a lower wage rate, but most would probably demand at least the same wage rate for additional hours. Therefore, I expect at least 75% percent to require at least a full wage compensation. This is shown in Figure 5, where in the range of working time increases both the curve for high-income groups and the curve for low-income groups run close to the line of full wage compensation. The curve for low-income groups reaches further up to higher values of y, since I assume that the desire for high working time increases is more prevalent in this group than in the group of high-income workers.

3.3. Labour supply elasticities

The results from the literature presented in Chapter 2.5. lead me to the hypothesis that a distinction between married women, single women, married men, and single men is necessary.
Since I am interested in labour supply elasticities of Austrian workers, I mainly rely on the findings of Bargain et al. (2014) who obtain estimates for Austria. But I also take into account that their findings are based on estimates from 1998 and that according to Elder et al. (2020) there is a tendency of

increasing labour supply elasticities. Therefore, based on the study's findings I should roughly assume that married women show the highest labour supply elasticities with a mean value around 0.3 and married men show small responses with a mean labour supply elasticity around zero. But although Collewet et al. (2018) investigate labour supply elasticities of German workers, who are usually found to have slightly different labour supply preferences than Austrian workers, they find a negative mean uncompensated wage elasticity of labour supply for their sample. Taking into account that their paper is the most recent on labour supply elasticities it somewhat contradicts the findings of Elder et al. (2020) who find both positive and increasing elasticities until 2017.

My hypothesis is therefore that labour supply elasticities are bigger for women than for men, but that they are not as large as suggested by the literature. Since I follow the methodology of Collewet et al. (2018), I assume that I obtain estimates similar to the ones they do. That is, I expect to find a large negative income effect, which inter alia results from an oversupply of goods in the Austrian society, and a slightly smaller positive substitution effect. This would induce the mean uncompensated wage elasticity to be small and negative on average. However, this can only be the case when a positive uncompensated wage elasticity for women is accompanied by a negative uncompensated wage elasticity for men. Therefore, I diverge from my hypotheses built upon most of the literature and expect the uncompensated wage elasticity for women to be around 0.1 and thus smaller than 0.3. For men, the expected uncompensated wage elasticity is smaller than zero with a value of -0.15. These values are also supported by Borjas (2016) who finds that the most credible estimate for the male labour supply elasticity is -0.1 and for the female labour supply elasticity 0.2.

3.4. Hypotheses overview

This chapter provides a short summary of the hypotheses developed in chapters 3.1. to 3.3. For the purpose of better clarity the hypotheses are listed below without any further explanation.

First, there are six hypotheses concerning working time preferences:

1) On average the desired working time is smaller than the current working time
2) The average desired working time is 32 hours per week
3) Expected correlation between current working time and desired working time change negative
4) Expected correlation between income and desired working time change negative
5) Expected correlation between education and desired working time change negative
6) Expected correlation between age and desired working time change positive

Second, there are four hypotheses concerning the required wage compensation for working time reductions:

1) More than 70% of the individuals require less than a full wage compensation

2) High-income individuals desire larger working time reductions than low-income individuals
3) High-income individuals are willing to forgo more of their income than low-income individuals
4) Low-income individuals are willing to forgo only very little of their income

Third, there are two hypotheses concerning the required wage compensation for working time increases:

1) More than 75% of the individuals require at least a full wage compensation
2) Low-income individuals desire larger working time increases than high-income individuals

Fourth, there are five hypotheses concerning labour supply elasticities:

1) Average uncompensated wage elasticity for women is about 0.1
2) Average uncompensated wage elasticity for men is about -0.15
3) The mean uncompensated wage elasticity is small and negative
4) The mean income effect is large and negative
5) The mean elasticity of substitution is small and positive

4. Methodology

In the present chapter I present the methodological approach that was chosen to test the hypotheses. The essential data is obtained in a survey, whose structure is presented first. In subsequent sections, first the equations and methods designed to test the hypotheses are explained and discussed, and then the collection and composition of the data set is described. Additionally, I explain some issues that appeared due to the respondents' answers and provide solutions for these.

4.1. Study design

In order to obtain the data, which is necessary to investigate the hypotheses on desired working hours, wage compensation and labour supply elasticities, a survey was conducted. This survey consists of three parts and 29 questions in total, out of which each participant is asked to answer 14. The difference in the total number of questions and the number of questions for each participant results from the participant's working situation and whether the desired working time change is positive or negative. The full German version of the survey can be found in Appendix C.

While the first part of the survey mainly aims at the individuals' characteristics such as gender, age, education, household composition and working situation, it is also decisive for the baseline which is taken for the participant's monthly net income and weekly working time. Inspired by a survey in the course of the Austrian Corona Panel Project (Kittel et al., 2020), I decided to include a question about

the working situation which would provide information about whether a worker is currently on a short-time work scheme. Being on a short-time work seem does not reflect a voluntary decision but is imposed on the workers by the employers due to the COVID-19 pandemic. Since for the analysis of both working time changes and income changes it is important to use regular values, participants who work on a short-time work scheme were asked to state their monthly net income and weekly working hours from February 2020. That is, as baseline I used the last month where workers worked regular hours and received regular incomes, before several measures taken by the government led to reduced hours and incomes. The relevance of this distinction becomes clear when looking at the number of Austrian workers who worked on a short-time work scheme on January 19th, 2021: The 440.384 workers who worked on a short-time work scheme (*25.611 Arbeitnehmer Mehr in Kurzarbeit Als in Der Vorwoche*, 2021) would have made up a share of approximately 9.7% of the Austrian labour force in 2019 (Statista, 2020). Taking into account that the Austrian labour force grew about 0.8% per year on average between 2009 and 2019, one can infer that the share of workers on a short-time work scheme should still make up approximately 9.6% of the Austrian labour force at the end of 2020 (or the beginning of 2021).

Having specified the baseline for the working hours and incomes of workers on a short-time work scheme, for the subsequent parts of the survey workers on a short-time work scheme must refer to their working times and incomes in February 2020 while workers who work regularly must refer to their situation in January 2021. In order to increase the response rate on questions about the monthly net income and the household income, an introduction was added for these questions. A study found that such an introduction would increase the response rate of such sensible questions from 80% to 88% (*Sensible Fragen - Wie Man Die Antwortbereitschaft von Befragten Erhöht*, n.d.). The introduction asks the participants to answer the questions correctly, while explaining that the data are collected for scientific purposes only and that all data are processed with anonymity. The second part of the survey is designed to investigate the desired working hours of the participants and their minimum required wage compensation. Therefore, in a first question regular workers were asked to state the number of working hours that they would like to work if they could choose, and in a second question they were asked to state their required minimum monthly net income to actually reduce or increase their working time to the desired extent. In this case not only the distinction between a desired working time increase and a desired working time reduction has to be made, but again workers on a short-time work scheme cannot be asked about their desired working hours and required income in their special current situation. Instead they are asked to state the number of hours that they would like to work when their short-time work scheme expires and their required monthly net income to actually change their working time to the desired extent when their short-time work scheme expires.

The third part of the survey asks two different kinds of hypothetical questions about income and working time decisions which are used to obtain estimates of labour supply elasticities. The first kind suggests a

working time which is five hours higher than the participant's current one and asks the participant about the labour income which he/she would require to be as happy with the new situation as he/she is with the current situation. The participant is supposed to imagine this change of working time to occur in a situation where most other things like job, work environment, partner, non-labour income and prices remain unchanged. This question is then repeated three more times, first with a working time five hours lower than the current one, second with a random number of hours higher and third with a random number of hours lower. The suggested number of hours may not exceed 60 hours or be under seven hours, though. These four questions are used to elicit the elasticity of substitution.

The second kind of hypothetical questions is used to compute the income elasticity. The participant is asked to imagine a lottery win where the individual and his/her partner will receive an amount equal to their current monthly household income additionally to their non-labour income every month as long as the participant or his/her partner lives. This introduces a forward-looking dimension to the static model. The participant is then supposed to indicate how many hours he/she would work per week in case of this lottery win.

While the question addressed at the estimation of the elasticity of substitution is taken from the Innovation Sample of the German Socio-Economic Panel, the question addressed at the estimation of the income elasticity is taken from Kimball and Shapiro (2008). Both questions are also used by Collewet et al. (2018) and were phrased differently for workers on a short-time work scheme for the purpose of this thesis. Since the workers' indifference curves for regular working times are of interest, for the first question workers who are on a short-time work scheme are supposed to imagine a working time change which occurred in February 2020. After that they are asked about the monthly net income which they would have required if the suggested working time change had happened at that time. For the second question they are supposed to imagine that they will win a lottery when their short-time scheme expires where they receive their monthly household income from February 2020 additionally to their non-labour income every month as long as the participant or his/her partner lives.

4.2. Measuring the required wage compensation

When working time is reduced or increased, this is usually accompanied by a change in income. But depending on whether the change in income is proportional to the working time change or not, the income change comes with a change in the wage rate. If the percentage change in working hours is of the same magnitude as the percentage change in income, the wage rate remains the same. In the context of working time reductions, one refers to this proportional change as a scenario in which there is no wage compensation. And in the context of working time increases, one refers to this proportional change as a scenario in which there is full wage compensation.

If the negative percentage change in working hours is larger than the negative percentage change in income, the wage rate over all worked hours increases, too. But since the income decreases, the wage

rate does not increase as strongly as in the case of full wage compensation. Therefore, this case is considered to result in *some* wage compensation.

If there is only a change in working hours and no change in income, the wage rate over all hours worked increases or decreases. For working time reductions this means that the worker is fully compensated for the forgone working hours since the income stays the same. Consequently, the wage rate increases. In the context of working time increases, the worker would work the additional hours without any change in salary so that he/she would receive no wage compensation.
Analogously to working time reductions *some* wage compensation can be defined for working time increases: if the positive percentage change in working hours is larger than the positive percentage change in income, the wage rate over all worked hours decreases, too. But since the income increases, the wage rate does not decrease as strongly as in the case of no wage compensation.

In this thesis, my goal is to specify where exactly between full wage compensation and no compensation the average percentage value for *some* can be found. This value hast to be obtained separately for working time reductions and working time increases due to the different definitions of full wage compensation and no compensation in both scenarios.
To obtain this value for working tome reductions, one must consider that full wage compensation here means a 100% wage compensation, because the working time is reduced by some percentage value and income stays the same (i.e. is still at 100%). Considering that it is very unlikely that a working time decrease is followed by an income increase, if the working activity stays the same, the income is basically at the maximum possible value. Every income higher than the initial one would lead to a wage compensation higher than 100%. Instead, no wage compensation means a 0% wage compensation, where for each reduced working hour the income decreases by an amount equal to the original hourly wage rate (i.e. the share of new income relative to the original income is 0% larger than the share of new working hours relative to the original working hours). Again, assuming that no change in working activity occurs, it can be considered unlikely that a working time decrease is followed by an even bigger income decrease, so that the income is basically at the minimum possible value. Any percentage income decrease which is larger than the percentage working hours decrease would lead to a negative value for the wage compensation. To compute the individual percentage wage compensation in case of a desired working time reduction, wc_i^r, one must therefore use the equation

$$wc_i^r = \frac{\frac{Y_i^r}{Y_i} - \frac{H_i^d}{H_i}}{1 - \frac{H_i^d}{H_i}} \tag{2}$$

where Y_i and H_i are individual i's regular monthly net income and regular working hours, respectively. Y_i^r is the required monthly net income of individual, i, for its desired working hours, H_i^d. If the value

for wc_i^r is equal to 1, individual i requires a full wage compensation. For this to happen, one needs $Y_i^r = Y_i$. If the value for wc_i^r is equal to 0, individual i requires no wage compensation. This occurs if the percentage change in income, Y_i^r/Y_i, equals the percentage change in working time, H_i^d/H_i. For any value $0 < wc_i^r < 1$ the individual requires *some* wage compensation.

However, as explained in the previous section, the individual percentage wage compensation, wc_i^r, is not limited to the range between 0 and 1. This is because an individual could also desire a working time decrease and at the same time require a higher income than the initial one, which would lead to a value $wc_i^r > 1$. And a negative value, $wc_i^r < 0$, could be obtained, if the desired hours decrease is proportionally smaller than the required income decrease. Taking the average over all individual percentage wage compensations in case of a desired working time reduction gives the average minimum required percentage wage compensation for desired working time reductions in the sample.

In the context of working time increases, no wage compensation means that workers work the additional hours without receiving any additional income, so that the wage rate over all hours decreases. A full wage compensation means that the worker's income increases proportionally to the working hours, so that the wage rate over all hours stays the same. If working hours increase more strongly than income, we face *some* wage compensation. Therefore, for desired working time increases the individual percentage wage compensation, wc_i^i, must be computed using the equation

$$wc_i^i = \frac{\frac{Y_i^r}{Y_i} - 1}{\frac{H_i^d}{H_i} - 1} \tag{3}$$

For the computation of the wage compensation in case of working time increases, the same conditions as in the case of working time reductions apply. If the value for wc_i^i is equal to 0, individual i requires no wage compensation. For this to happen, one needs $Y_i^r = Y_i$. And if the value for wc_i^i is equal to 1, individual i requires full wage compensation. This occurs if the percentage change in income, Y_i^r/Y_i, equals the percentage change in working time, H_i^d/H_i. For any value $0 < wc_i^i < 1$ the individual requires *some* wage compensation.

For a desired working time increase one can observe $wc_i^i > 1$, if the desired hours increase is proportionally smaller than the required income increase. In an unusual case one could observe a negative value, $wc_i^i < 1$, because an individual might desire a working time increase and require a lower income than the initial one. Taking the average over all individual percentage wage compensations in case of a desired working time increase gives the average minimum required percentage wage compensation for desired working time increases in the sample.

4.3. Measuring labour supply elasticities

Taking into consideration the questions asked in the survey, the approach to estimate labour supply elasticities might seem similar to the approach for the required wage compensation at a first glance. This is because in both approaches the individuals state desired allocations of weekly working time and monthly net income. But while for the determination of the required wage compensation the individual is free in the decision about both working hours and monthly net income and thus describes its optimal allocation, for the determination of labour supply elasticities either the working hours or a monthly net income is proposed to the individual. Therefore, in the case of labour supply elasticities the indicated allocation is only optimal given the working hours or the monthly net income.

Using this approach, I follow the methodology of Collewet et al. (2018). An advantage of this approach is that I do not have to make any assumptions about the specific form of the individual's utility function, since its specific form does not enter the estimation of the elasticities as it does in economists' estimations. Individuals only need to make hypothetical trade-offs between income and leisure and thereby reveal parts of their indifference curves. These trade-offs can only be made hypothetically because it would be practically impossible to induce several working time changes for an individual to observe his/her respective choices of monthly net income while keeping utility at a constant level.

To compute the elasticity of labour supply to the hourly wage, the equation for the uncompensated wage elasticity of labour supply (Marshallian elasticity) is used. The Marshallian elasticity of labour supply describes the percentage change in working hours that follows a 1% increase in hourly wage and is derived from the Slutsky equation (4) written in elasticity form (5) and rearranged (Keane, 2011).

$$\frac{dH^*}{dw} = \frac{dH^*}{dw}\Big|_{\bar{U}} + H^* \frac{dH^*}{dY_0} \tag{4}$$

$$\frac{w}{H^*}\frac{dH^*}{dw} = \frac{w}{H^*}\frac{dH^*}{dw}\Big|_{\bar{U}} + H^* \frac{w}{H^*}\frac{Y_0}{Y_0}\frac{dH^*}{dY_0} \tag{5}$$

This way the Marshallian elasticity, ϵ^M, can be decomposed into the elasticity of substitution, ϵ^S, and an income effect. The income effect is the product of the income elasticity of labour supply, ϵ^Y, and the mechanical effect of an increase in hourly wage on the individual's purchasing power. This mechanical effect is described by Paradisi (2016) and defined by the ratio of labour income to non-labour income. One goal of this thesis is to obtain estimates for ϵ^S and ϵ^Y. Equation (7) shows how ϵ^S and ϵ^Y are combined so as to obtain the uncompensated wage elasticity. They can be calculated for a single individual, given the individual's information about hourly wage rate w, optimal working hours H^* and non-labour income Y_0.

$$\epsilon^M = \epsilon^S + \frac{wH^*}{Y_0}\epsilon^Y \tag{6}$$

4.3.1. Measuring elasticity of substitution

The substitution effect describes the individual's percentage reaction in working hours to a 1% increase in their hourly wage rate, holding the individual's utility constant. Therefore, using the individual's observed combination of labour income and working hours and asking for combinations which would yield the same utility, the proposed working hours and the according labour incomes reveal four additional combinations that lie on the individual's indifference curve.

With five points between which the individual is indifferent, one can get an idea of the shape or functional form of the indifference curve, but many more such points would be needed to know the true function of the curve. The slope of each of the four lines between the five points gives the wage rate that is earned for the worked hours between one point and the next point. Collewet et al. (2018) compute the slope of this line with the formula

$$slope_{h+i} = \frac{(earnings_{h+i} - earnings_h)}{(hours_{h+i} - hours_h)} = wage_{h+i} \tag{7}$$

where $hours_h$ is the number of weekly working hours and $earnings_h$ is the weekly net income for the starting point. The variable $hours_{h+i}$ is the proposed number of weekly working hours of the next point, and $earnings_{h+i}$ is the according weekly net income. The slope is always measured from point h to point $h+i$ or point $h-j$. The slope therefore gives the hourly wage rate $wage_{h+i}$ between the starting point and the higher point $h+i$. If the wage rate between the starting point and the previous point was of interest, one would obtain $wage_{h-j}$.

Figure 5 shows an exemplary indifference curve which would be obtained for an individual that works 40 hours per week. Due to simplicity the monthly working time in this example is four times the weekly working time. The said individual is proposed weekly working hours of 28 hours less, five hours less, five hours more and 12 hours more compared to the initial working time. The individual requires an hourly wage rate of 22 euros for a weekly working time of 52 hours and an hourly wage rate of 17 euros for a weekly working time of 45 hours. These wage rates are average wage rate over all worked ours. The required average hourly wage rate between these two points is approximately 54 euros and therefore much higher. It is calculated with equation (8) which is depicted as the blue hypotenuse of the red triangle in Figure 5.

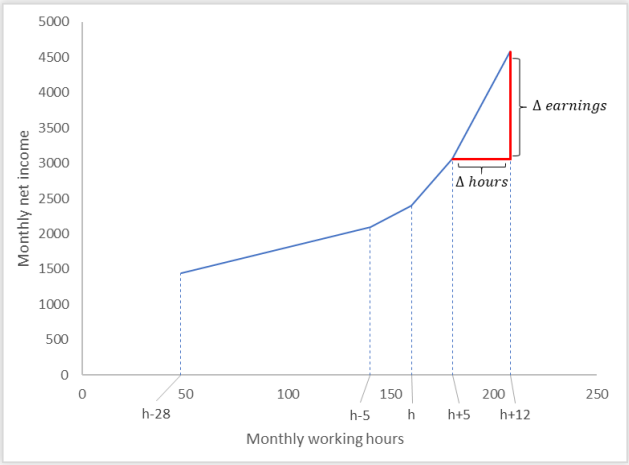

Figure 5 - Exemplary indifference curve for proposed working hours

But since the survey does not contain a question that asks for the weekly net income, in order to obtain the hourly wage rate a transformation either from monthly net income to weekly net income or from weekly working hours to monthly working hours must be made. There can be no precise multiplier for this transformation as not all months have the same number of working days and not every participant only works from Monday to Friday. However, for my calculations I decided to multiply the weekly working hours with the factor 4.345, because this value represents the average number of weeks per month. Therefore, in this thesis equation (8) refers to $hours_h$ as the number of monthly working hours and $earnings_h$ as the monthly net income.

According to neoclassical theory of labour supply, the marginal rate of substitution between working hours and labour income is defined by the slope of the indifference curve. The marginal rate of substitution describes how much labour income an individual is willing to give up in order to marginally decrease his/her working hours. It is generally assumed that the marginal rate of substitution is a decreasing rate. The wage rate on the other hand is the slope of the budget constraint and defines how much labour income an individual *must* give up in order to marginally decrease his/her working hours. Consequently, given the wage, the optimal combination for an individual is where the marginal rate of substitution equals the wage rate. Due to the convex shape of the indifference curve, any combination including fewer working hours would imply a wage rate bigger than the marginal rate of substitution. The individual would have to give up more labour income than he/she is willing to. On the other hand, any combination including more working hours would imply a wage rate smaller than the marginal rate of substitution. To be indifferent between the two combinations the individual would require more additional labour income than would be possible as defined by the wage rate.
In the special case of this thesis only five points on the indifference curve are known, so that the marginal rate of substitution cannot be revealed at any point on the indifference curve. What is revealed, though, is the average slope of the indifference curve, i.e. the average rate of substitution, between any two points. The average slope of the indifference curve is given by the wage rate $wage$. And since any two

of the obtained points must be connected via a true indifference curve, whose functional form is unknown, somewhere between these two points the wage rate $wage$ must be equal to the marginal rate of substitution.

To compute the elasticity of substitution around the starting point an arc elasticity is used. This is inevitable as there is no function of the indifference curve to describe the relationship between the two adjoining points of the starting point. Therefore, for the computation the average slope of the indifference curve below the starting point is compared to the average slope of the indifference curve above the starting point. Depending on the functional form of the indifference curve, in extreme cases the average slope could either be equal to the true slope, very close to the starting point both below and above it, or it could be equal to the true slope very close to the two adjoining points. The first case would mean that, holding utility constant, a wage increase would only lead to a negligible increase in working hours, thus implying an elasticity of substitution close to zero. And the second case would induce the elasticity of substitution to be maximal for the given range between the two adjoining points, so that a wage increase would lead to a large increase in working hours.

To minimise the probability of computing an elasticity of substitution around the starting point which is either strictly too large or strictly too small, I follow the approach of Collewet et al. (2018) and choose a measure of the elasticity of substitution which lies both halfway between the starting point and the next point, and halfway between the starting point and the previous point. The underlying assumption is that the marginal rate of substitution equals the wage rate $wage_{h+i}$ at values of hours where $(hours_{h+i} + hours_h)/2$ and the wage rate $wage_{h-j}$ where $(hours_h + hours_{h-j})/2$. Then the point elasticity of labour supply at $hours_h$ is computed as the arc elasticity between the point $(hours_h + hours_{h-j})/2$ at $wage_{h-j}$ and the point $(hours_{h+i} + hours_h)/2$ at $wage_{h+i}$. This is illustrated in Figure 6. The according arc elasticity formula used to compute the elasticity of substitution is thus:

$$\epsilon^{S}_{h_{ji}} = \frac{(hours_{h+i} - hours_{h-j})/2}{(wage_{h+i} - wage_{h-j})} \frac{(wage_{h+i} + wage_{h-j})/2}{(hours_{h+i} + hours_{h-j})/2} \tag{8}$$

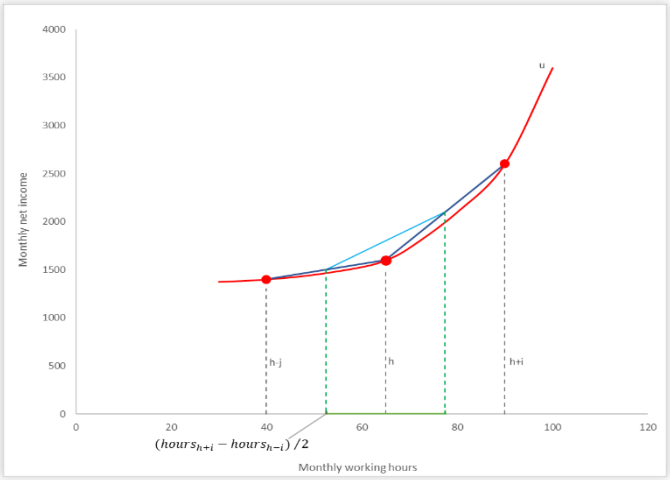

Figure 6 - Computation of the elasticity of substitution

4.3.2. Measuring income elasticity

The income elasticity measures the percentage change in labour supply that results from a 1% increase in non-labour income. In neoclassical theory on labour supply any change in working hours that results from a change in the wage rate can usually be divided into two separate reactions, the substitution effect, and the income effect. Ideally, one could precisely elicit which share of the total reaction comes from either of the two effects. However, with hypothetical questions it is hardly possible to precisely elicit both shares that make up the total effect. Figure 7 assumes that an individual was at an optimum initially and illustrates my decision to refrain from posing a hypothetical question addressed at the measurement of the income elasticity.

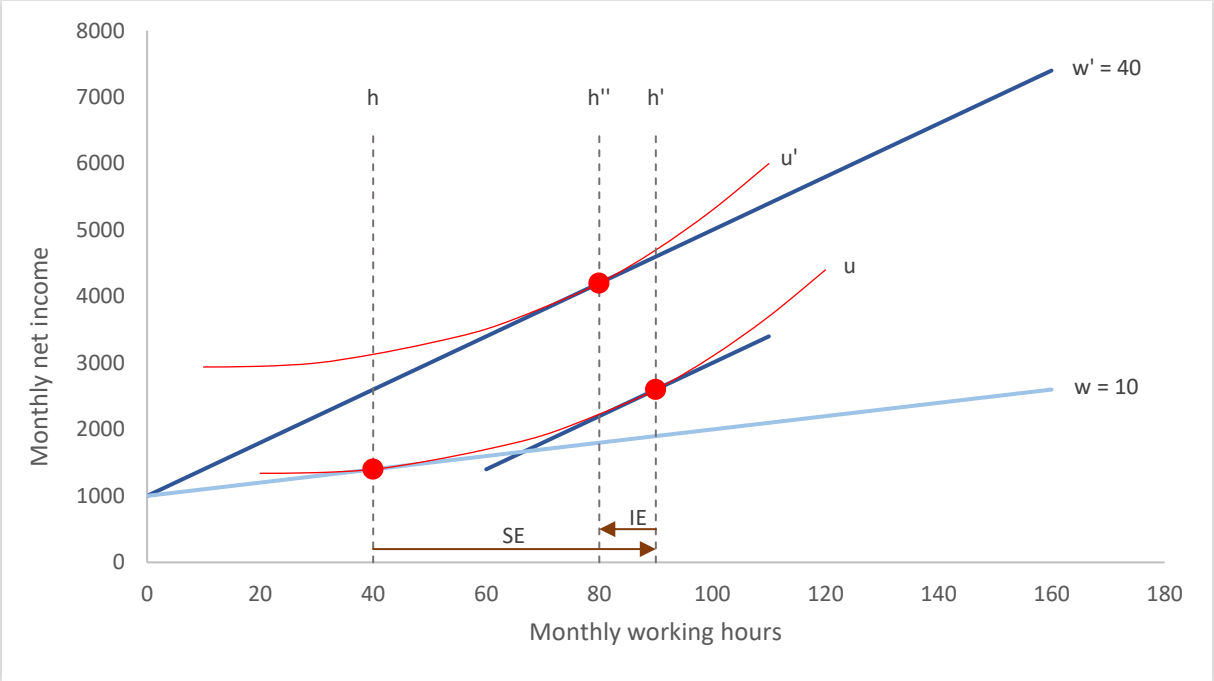

Figure 7 – Decomposition of the total effect into substitution effect and income effect

To underpin my decision, I first present an example of an exemplary question and then explain the idea behind it. Such a question could be:

"*You have indicated that with a proposed h' hours of working time per week you would be as happy as before with an income of €Y'. This income implies an hourly wage of €w'. Now assume that you actually received an hourly wage of €w' and that you were able to choose your working time, what would your optimal working time h'' be?*".

The idea behind this question would be to learn the change in labour supply when the original wage w changes to w' and the participant does not have to stay on his/her indifference curve u, but may choose a combination of working hours and income which lies on a different indifference curve u'. The difference between the originally worked hours h and the hours h'' stated as an answer to the exemplary question would then be the total effect of a wage change. The difference between the hypothetical construct of proposed worked hours h' at wage w', where the participant must stay on his/her initial

indifference curve u, and the stated hours h'' would be the income effect. But not only would the participant have to be able to imagine a construction of hypothetical events, but it could also be possible that he/she would not be able to relate to the wage w' that was calculated on the basis of his/her statements on working hours and income. Additionally, since four different working hours h' are proposed to the participant for the computation of the elasticity of substitution, one would have to pose the exemplary question four times for all different values of h'.

To overcome this issue, the income effect is not measured as a part of the total effect, but as a separate effect where the participant is supposed to imagine an increase of his/her non-labour income, holding the original wage and labour income constant. This computation of the income effect is based on the crucial assumption that the individual's income elasticity is constant and thus independent of wage and income. As shown in Figure 8, the magnitude of the suggested increase in non-labour income does not affect the computation of the income elasticity, since any percentage change in non-labour income would always induce the same percentage change in labour supply.

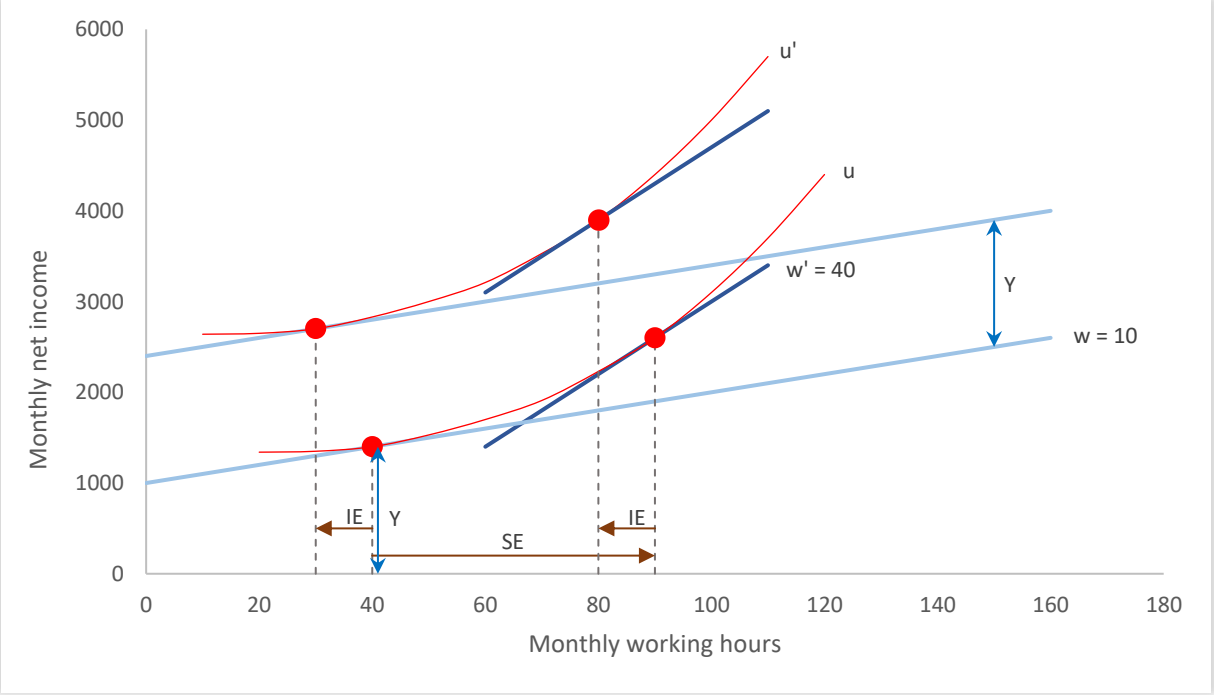

Figure 8 - Computation of the income effect

A useful choice of an increase in non-labour income is made by Collewet et al. (2018). I follow their choice and suggest an increase in non-labour income amounting to the individual's monthly household income $Y = wH^* + Y_0$. In Figure 8, Y equals the vertical distance between the two budget constraints for the initial wage w. This change in non-labour income is big enough for the individual to make a substantial change in available income, but at the same time it is small enough to not make him/her a billionaire. Therefore, the individual should still have incentives to further increase his/her monthly net income through the supply of labour. To compute the income elasticity, I use the formula

$$\epsilon^{Y} = \frac{(hours_Y - hours_h)}{Y} \frac{Y_0}{hours_h} \tag{9}$$

where $hours_Y$ is the number of hours that the individual would decide to work after an increase in non-labour income amounting to Y.

Due to the construction of the formula, the income elasticity must be equal to zero, if participants have a monthly non-labour income which is equal to zero or negative.

4.4. Data collection and description

The survey was addressed to employed Austrian people and conducted between January 29th 2021 and February 17th 2021. The representative sample of Austrian workers that is used for the analysis of desired working hours and labour supply elasticities originally consisted of 744 Austrian workers, but had to be reduced to a sample size of n = 688. 56 participants were deleted from the sample because of one of the following reasons: the indication of very unrealistic combinations of income and working hours, the lack of crucial answers, the indication of the same for all questions, or a survey processing time which would not allow a thorough reading of the questions.
The remaining participants constitute a sample of 48.7% males and 51.3% females, where both the group of people aged between 35 and 44 and people older than 54 are slightly overrepresented, while the age groups "35 - 44", "45 - 54" and people younger than 25 are slightly underrepresented (Statistik Austria, 2020b).

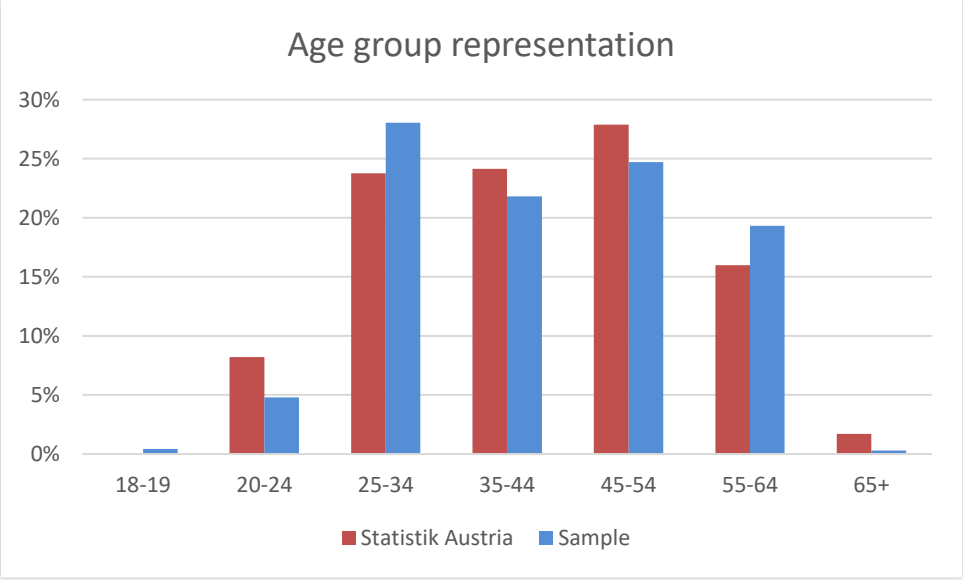

Figure 9 - Representation of age groups in sample

Source: Statistik Austria (2020b)

Regarding the monthly net income, the sample shows an accurate representation of the Austrian working population (Figure 10). However, one must consider that the values provided by Statistik Austria (2020a) refer to workers who receive incomes from salaried employment and not to self-employed workers. Moreover, the statistic includes the workers' 13th and 14th month's salary while the participants in this study were asked not to include their 13th and 14th month's salary. For the purpose of comparability, I made an approximation of the workers' monthly net incomes without their 13th and 14th month's salary. Finally, since there are eight outliers in my sample who indicated their yearly net income instead of their monthly net income, I additionally computed the average income and income quantiles after adjusting their incomes to monthly net incomes. When comparing the adjusted average income in the sample with the true values there is not a lot of deviation. The quantile values in my sample are about 200 euros higher than the quantile values provided by Statistik Austria. This problem most likely arises due to the simplicity of the approximation of the workers' monthly net incomes and due to the inclusion of self-employed workers in my sample.

8.9% of the participants stated that they are on a short-time work scheme, which is very close to the expected 9.6% (see Chapter 4.1) and thus confirms the importance of separating the participants into two groups based on their working situation.

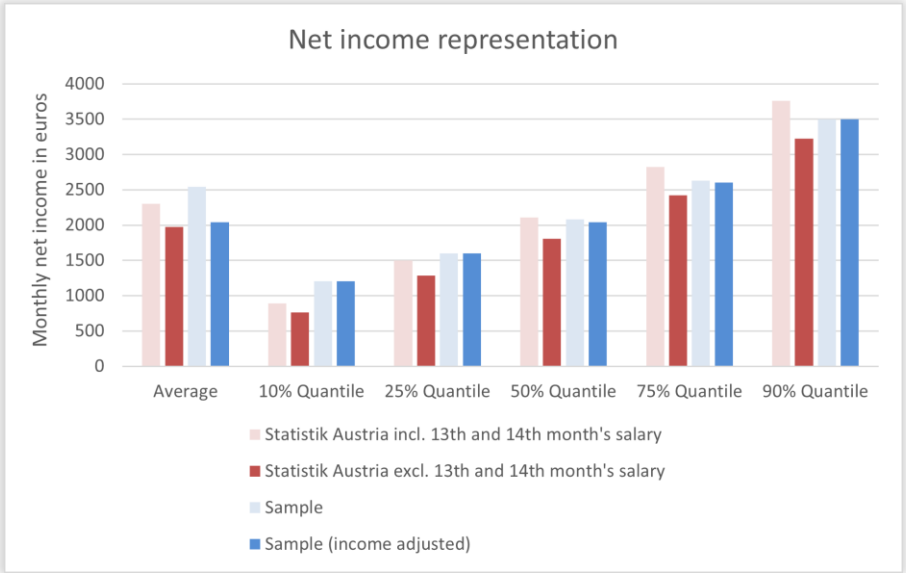

Figure 10 - Representation of monthly net income in sample

Source: Statistik Austria (2020a)

4.4.1. Issues with participants' answers

When proceeding to work with the data some issues which arose have to be taken into consideration. These issues lead to difficulties in the necessary computations. In this section I therefore describe the

issues, their frequency, and their consideration in my analysis. Some of the participants can be associated with two of the issues, so that the total number of cases is higher than the number of individuals affected.

The first issue affects the computation of the average desired working hours. Five participants have indicated very low desired working hours between two and five hours combined with comparatively high required incomes. Possibly this reflects the true and unrealistic desired combination of working hours and income, but maybe the concerned participants accidently indicated a wrong number. Since one cannot know or guess the correct reason, there is no way to adjust these numbers. Therefore, in the computation of the average desired hours I first include these participants and then compare the result to the one when excluding the participants. As only five participants are affected, I assume that the obtained average values are very similar.

The second issue affects the computation of the minimum required wage compensation. 28 participants who desire a working time reduction state that they would require a minimum monthly net income which is higher than their initial monthly net income. This leads to required wage compensations higher than 100% and represents an unusual preference of an individual who wants to reduce his/her working time but is only willing to do so if he/she receives a higher income. I proceed in the same way as with the first issue and compare the results relating to the minimum required wage compensations in the case of desired working time reductions before and after excluding this group. Regarding individuals who desire a working time increase two more issues arise. First, there are three individuals who want to work more hours but require an income smaller than their initial one. This results in a negative required wage compensation and could either mean that they consider their current income too high or that they have a very strong preference for work, which is almost independent of the wage. Second, there are 26 participants who desire a working time increase but require a disproportionately higher income to implement their desire, which induces a required wage compensation higher than 100%. Therefore, the individuals are technically stating that they would like to work more but at the same time they link this desire to possibly unrealistic wage expectations. For this group I specify a threshold above which the required change in the wage rate is considered too high. Afterwards, I complete my computations once excluding these groups and once including them to compare the results.
Possibly some of the respective individuals imagined their working time change to be accompanied by a change of the activity which induced them to require incomes which would fit better to the new activity they had in mind.

The third issue concerns the stated monthly net incomes or the stated working hours which leads to either unrealistically low wages or unrealistically high wages. In the case of the eight participants who indicated very high monthly net incomes I assumed that they accidently indicated their yearly net income. To check whether this assumption is realistic I divided the stated income by 12 to obtain their

possible monthly net incomes. Then I compared the obtained value to the required monthly net incomes both after a working time change and after the proposal of the four different working hours. For all eight concerned participants the obtained values fitted the other values very consistently so that I concluded that indeed the yearly net income was stated. Since the initial income affects both the computation of wage compensations and labour supply elasticities, I compare the obtained results for the indicated incomes and the adjusted incomes. Two participants indicated unrealistically low working hours. While for one of the two it seems very plausible that he/she just missed a zero, for the other participant there is no plausible way of correcting the number of working hours. Therefore, the results for wage compensations and labour supply elasticities are compared for an exclusion of both participants, an exclusion of the latter one combined with a correction of the former one, and an inclusion of both.

The fourth issue severely impacts the computation of the elasticity of substitution. This issue results from participants who show some irregularities in the stated required incomes for the proposed working hours. 14 participants followed a pattern where they stated the same income for at least three out of the four questions. This can either be because the participants did not take the questions seriously or because they do indeed have a strict preference for the stated income independent of the number of working hours. A total of 68 participants answered the questions such that the four proposed working hours and the according required incomes give a consistent preference order. However, after taking into consideration the initial combination of working hours and income, the preference order becomes inconsistent. That is, the initial income lies outside the range between the required incomes for a proposed five hours working time reduction and a proposed five hours working time increase. Since the participants were supposed to indicate required incomes such that the combination of working hours and income would make them as satisfied with the new situation as before, logically the required income for a five-hour working time reduction should be smaller than or equal to the initial income and the required income for a five-fhour working time increase should be bigger than or equal to the initial income. The affected 68 participants also include the eight participants who likely indicated their yearly net income erroneously. After adjusting their income to monthly net income their preference order is consistent again so that we are left with 60 participants. Finally, another 40 participants answered the questions such that even the four proposed working hours and the according required incomes do not give a consistent preference order. As a correction of the stated required incomes is not possible, I compute the elasticity of substitution excluding each of these groups and investigate whether there is a significant difference in the obtained estimate.

The fifth issue is crucial for the calculation of the income elasticity, because the indicated household income is important. Regarding the household income the participants were asked to indicate their total monthly household income, i.e. their labour income plus their non-labour income. Therefore, their indicated monthly household income should exceed or equal their monthly net income. For 48

participants this is not the case. However, there are logical reasons for this: first, they could be indebted or have to pay for dependent persons who do not live in the household. Or second, they might have not read the question properly and consequently indicated their non-labour income only. I obtained plausible household incomes after adjusting their monthly household incomes by adding their indicated monthly net incomes and their indicated household incomes. Three out of the 48 participants had a household income smaller than their monthly net income, because they belong to the group which accidently stated their yearly net income. After adjusting their yearly net income, the household income exceeds the monthly net income as it should. In order to overcome this issue, I compare the obtained estimates after adjusting the household incomes to the estimates without adjustment and the estimates when leaving out the participants concerned.

Finally, the sixth issue arises because the participants' indicated working hours after a lottery win are higher than their stated desired working hours. This issue concerns 25 participants and also affects the computation of the income elasticity. But it is not a severe issue as preferences for labour income and non-labour income might differ. It cannot be corrected because the seemingly implausible difference in indicated desired working hours and desired hours after a lottery win might either be intended or unintentional. For five participants, however, the reason is very obvious as these participants belong to the group who indicated very low desired working hours between two and five hours. And another two participants belong to the group with a household income smaller than the monthly net income. Therefore, their suggested hypothetical lottery win was insufficiently large to reduce their working hours to their ideally desired hours. For the computation of the income elasticity I stick to the solution of comparing the results including and excluding these 25 participants.

5. Results

In the following section I use the methodological approaches presented in Chapter 4 to test my hypotheses formulated in Chapter 3. I take into consideration the issues discussed in Chapter 4.4.1. and evaluate potential differences in the obtained results.

5.1. Working time preferences and individual characteristics

Independent of an adjustment of the working hours for the one individual where it is possible, the average weekly working time in the sample is almost the same with approximately 38 hours. While women work 35.7 hours per week on average, men work 40.85 hours per week on average. Additionally, the average working time barely varies over all age groups.

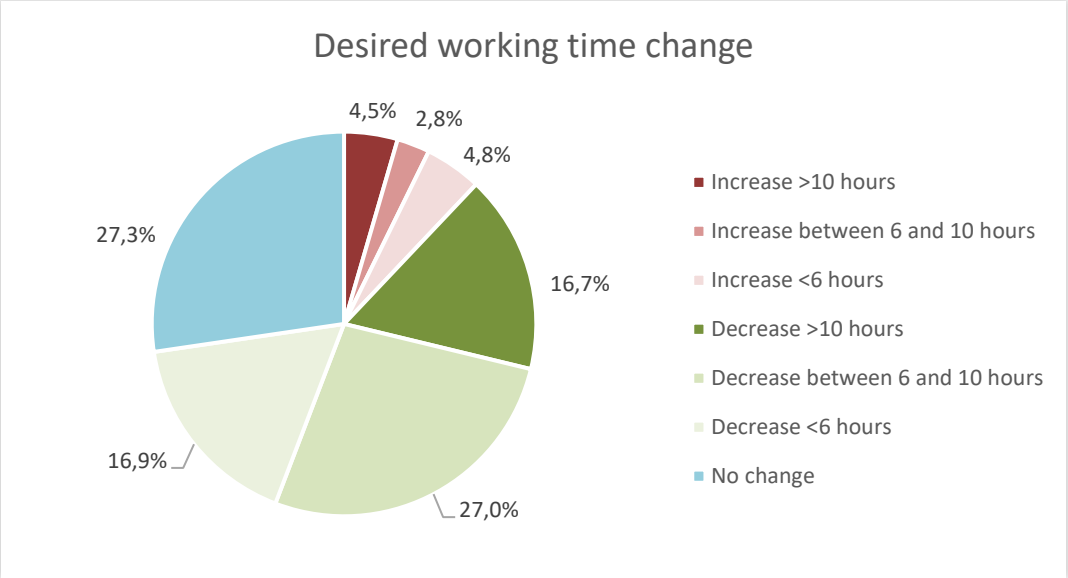

Figure 11 - Desired working time changes in the sample

As hypothesised, a vast majority of 60.6% desires a working time decrease, while 27.3% wish to keep their working time and 12.1% would like to increase their working time. For both the group which desires a working time reduction and the group which desires a working time increase, the extent of the desired working time change is quite evenly distributed among the participants, with most of them desiring a change of less than 11 hours (Figure 11).

On average the desired working time reduction is 5.64 hours for men and 4.51 hours for women, which implies a total average desired working time reduction of 5.06 hours and an average desired weekly working time of 33.15 hours. Even though this average value is statistically different from the hypothesised 32 hours, the presented values support my assumption that a remarkable reduction in the weekly working time is desired by the Austrian working population. Furthermore, it can be shown that most individuals who work the statutory 40 hours per week want to reduce their working time substantially, since for this group of participants the average desired working time is 33.8 hours.

Table 1 shows that working in home office only minimally affects the desired weekly working time, since the average desired weekly working time for people who work in home office is only about half an hour higher than the average desired weekly working time for people who do not work in home office. Moreover, participants living with a partner desire on average to work 1.1 hours more than participants who live alone. And the presence of children under six years old induces the participants to desire an average weekly working time which is approximately 1.2 hours lower than the desired weekly working time for those who do not have children under six years old. For the presence of children aged between six and fourteen years the tendency is the same. But the difference in desired weekly working hours of 1.7 is slightly bigger. The picture changes when looking at the presence of children aged older

than fourteen years. In this case the average desired weekly working time is 1.6 hours higher for individuals who have children aged older than fourteen years than for those who do not. This switch is most likely due to the reduced need for care for older children (who might even be adults themselves).

Source	SS	df	MS	Number of obs	=	688
				F(5, 682)	=	1.96
Model	819.501519	5	163.900304	Prob > F	=	0.0824
Residual	57004.0784	682	83.5836927	R-squared	=	0.0142
				Adj R-squared	=	0.0069
Total	57823.5799	687	84.1682386	Root MSE	=	9.1424

desired	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
homeoffice	.4979119	.7153723	0.70	0.487	-.9066848	1.902509
partner	1.126118	.7498681	1.50	0.134	-.3462091	2.598446
childunder6	-1.157419	1.122791	-1.03	0.303	-3.361962	1.047124
child6to14	-1.657905	.9903828	-1.67	0.095	-3.602471	.2866603
child14plus	1.594374	.9716111	1.64	0.101	-.3133343	3.502083
_cons	32.34114	.6657887	48.58	0.000	31.0339	33.64839

Table 1 – Impact of home office and family status on desired working hours

In this section, I test my assumptions regarding correlations of the individuals' characteristics with their desired working time change. Starting with the current working time (or that from February 2020 for the individuals who are on a short-time work scheme), I expected the correlation between the desired working time change and actual working time to be negative. Indeed, using the adjusted working hours, the correlation coefficient of -0.526 is statistically significant at the 1% level and shows that a moderate negative relationship between the number of working hours and the desired working time change exists. Moreover, the regression coefficient of the bivariate regression takes the value -0.51 and is statistically significant at the 1% level, too. Solely looking on the impact that working hours have on the desired working time change, one can thus say that the desired working time change is dependent on the number of regular working hours inasmuch as a one hour working time increase is followed by the desire of a 0.51 hours working time reduction. Both the correlation coefficient and the regression coefficient hardly change when refraining from using the adjusted working hours.

For the individuals' monthly net incomes, both coefficients are statistically significant at the 1% level for the original data as well as for the adjusted data. But in this case the correlation coefficient increases from -0.1 to -0.2 if the adjusted data is used. That is, I find a weak negative relationship between an individual's income and the desired working time change. This confirms the original hypothesis, but in a weaker scope than expected. When using the adjusted data and only looking at the impact that income has on the desired working time change, also the regression coefficient of the bivariate regression increases from -0.0003 to -0.0018, suggesting a very small and negative dependence of the desired working time change on the individual's income. More precisely, an income increase by one euro is followed by the desire for a 0.0018 hours working time reduction. One can better understand how weak

the dependency is when observing that a 1000-euro income increase only leads to the desire for a 1.8 hours working time decrease.

Other than expected, I only find a very weak negative relationship between the individual's education level and the desired working time change. Additionally, the correlation coefficient of -0.083 is only statistically significant at the 5% level. The dependence of the desired working time change on the individual's education level seems to be stronger than what the correlation coefficient suggests, though. In a bivariate regression I obtain a coefficient of -0.67 which is statistically significant at the 5% level, indicating that for any increase in education by one level, the desired working time decreases by 0.67 hours.

Finally, the relationship between the individual's age and the desired working time change indeed is positive. But the correlation coefficient of 0.065 is very small and only statistically significant at the 10% level. The same applies to the regression coefficient in a bivariate regression, only that the regression coefficient is slightly smaller with a value of 0.05. This coefficient suggests that for every additional year of life an individual desires a 0.05 hours working time increase, leading to older people desiring for more working hours than younger people.

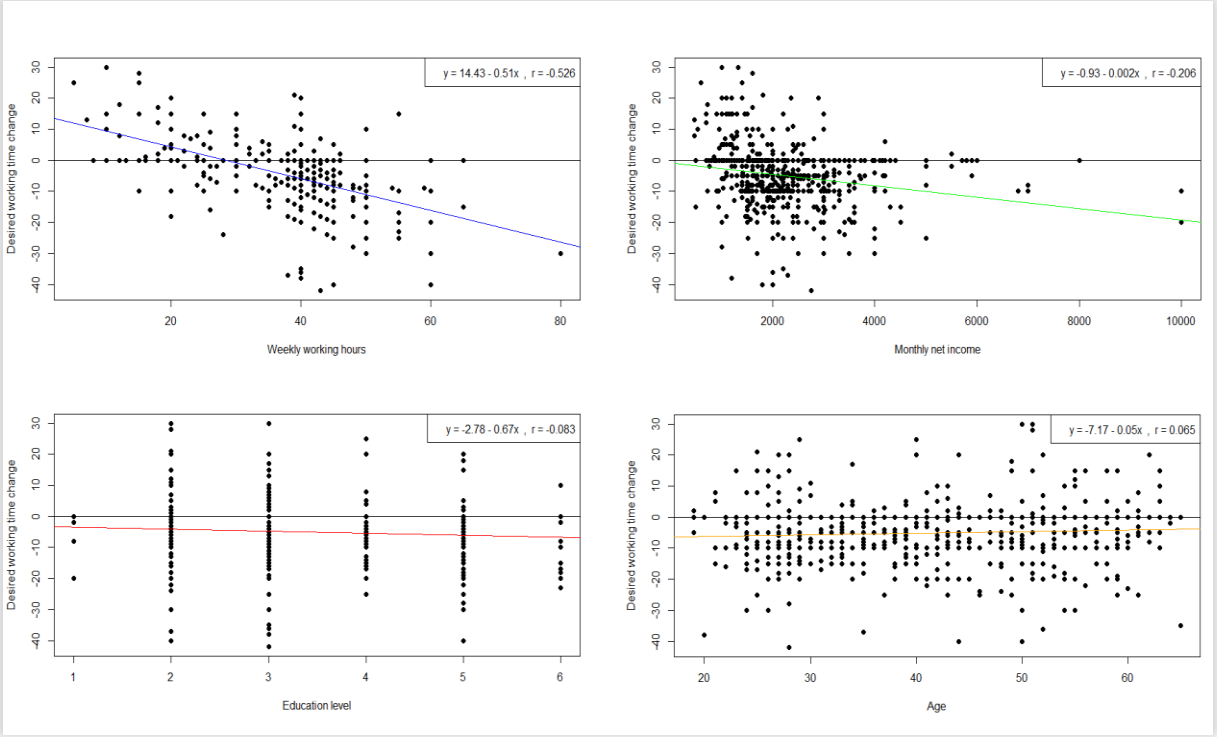

Figure 12 - Correlations between the desired working time change and explanatory variables

However, one has to be careful with the interpretation of these regression coefficients since interactions between the explanatory variables are not taken into consideration in the bivariate regressions. Therefore, a multivariate regression was run in order to see which of the explanatory variables remain statistically significant. Table 2 shows that only the current working hours have a statistically significant

regression coefficient of approximately -0.537. Interestingly, the individual's monthly net income does not have a statistically significant influence on the desired working time change. And also the regression coefficients for the individual's age as well as the five dummy variables for the six different education levels (with education level = 0 being the reference category and education level = 6 being equal to a PhD and thus the highest possible level) are not statistically significant anymore. Additionally, the regression coefficients for the monthly net income and education level do not have the expected sign anymore. Nevertheless, all variables are kept in the model since the original reasoning for including these variable is still considered plausible. When I tested for potential issues with multicollinearity, I found that the highest correlation was between working hours and monthly net income with a correlation coefficient of 0.49. The next two highest correlations were found between monthly net income and education

(r = 0.26) and monthly net income and age (r = 0.27). These values indicate that multicollinearity should not be an issue in the regression model. To verify that indeed it is not, I computed the variance inflation factors. The highest variance inflation factors are found for the dummy variables, which is plausible because whenever an explanatory dummy variables takes the value one, the dependent dummy variable takes the value zero per definition. Disregarding these variables, the highest variance inflation factor is found for the monthly net income and takes the value 1.56. Multicollinearity is not considered a problem unless the value of the variance inflation factor exceeds 10 (Mooi & Sarstedt, 2011).

Source	SS	df	MS	Number of obs	=	688
				F(8, 679)	=	33.70
Model	16796.3826	8	2099.54782	Prob > F	=	0.0000
Residual	42300.1741	679	62.2977528	R-squared	=	0.2842
				Adj R-squared	=	0.2758
Total	59096.5567	687	86.0211888	Root MSE	=	7.8929

difference	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
incomecorrected	.0005067	.0003642	1.39	0.165	-.0002084	.0012218
hourscorrected	-.5366318	.0367706	-14.59	0.000	-.6088295	-.4644341
age	.0291409	.0267372	1.09	0.276	-.0233566	.0816385
e1	2.348188	3.600103	0.65	0.514	-4.720484	9.416859
e2	2.223627	3.569975	0.62	0.534	-4.785891	9.233144
e3	1.061034	3.690931	0.29	0.774	-6.185976	8.308045
e4	1.520511	3.598446	0.42	0.673	-5.544907	8.585929
e5	3.019569	4.043027	0.75	0.455	-4.918767	10.95791
_cons	11.09895	3.973151	2.79	0.005	3.297812	18.90009

Table 2 – Regression output for multivariate regression

5.2. Required wage compensation

Having found that a majority of Austrian workers desires a working time reduction, in this section I analyse which financial compensation would be required to implement this desire.

To compute the required wage compensation, I use equation (2) in case of working time reductions and equation (3) in case of working time increases. These equations were discussed in chapter 4.2.
My assumptions regarding the required financial compensation are confronted with the evaluation of three different compositions of my data set. The first group includes all participants who desire a working time change and for whom the data is neither adjusted for working hours nor for monthly net incomes. The second group also includes all participants but has both working hours and monthly net incomes adjusted. And the third group has both working hours and monthly net incomes adjusted but is restricted to the participants who were not affected by the second issue discussed in Chapter 4.4.1. This reduces the number of observations to n = 389 in case of desired working time reductions and to n = 79 in case of desired working time increases.

5.2.1. Required wage compensation for desired working time reduction

Table 3 displays the obtained results for each of the three groups. Using the first group, I find that only 22.06% of the participants require a full compensation, i.e. $wc_i^r = 1$, for their desired working time reduction while a total of 71.23% of the participants require a smaller wage compensation, i.e. $wc_i^r < 1$. Out of these 71.23%, a big majority of 65,47% requires *some* wage compensation, meaning that $0 < wc_i^r < 1$. While 1.2% state that they would be willing to reduce their working time with no change in the wage rate (i.e. $wc_i^r = 0$), 5.28% would even be willing to accept a lower wage rate than their current one in order to reduce their working time (i.e. $wc_i^r < 0$). The remaining 6.71% belong to the group of participants affected by the second issue, since they require a wage compensation $wc_i^r > 1$, which means that they desire a working time reduction but require an income increase at the same time.

	Group 1		Group 2		Group 3	
$wc_i^r < 0$	22	5,28%	18	4,32%	18	4,63%
$wc_i^r = 0$	5	1,20%	5	1,20%	5	1,29%
$wc_i^r \leq 0.33$	*59*	*14,15%*	*59*	*14,15%*	*60*	*15,42%*
$0.33 < wc_i^r \leq 0.66$	*135*	*32,37%*	*137*	*32,85%*	*138*	*35,48%*
$0.66 < wc_i^r < 1$	*76*	*18,23%*	*77*	*18,47%*	*75*	*19,28%*
$0 < wc_i^r < 1$	270	64,75%	273	65,47%	273	70,18%
$wc_i^r = 1$	92	22,06%	93	22,30%	93	23,91%
$wc_i^r > 1$	28	6,71%	28	6,71%	0	0,00%
	417	100,00%	417	100,00%	389	100,00%

Table 3 - Required wage compensation for working time decrease

The average required wage compensation is $\overline{wc^r} = 0.675$ and the median of the required wage compensation is 0.625. These two values suggest that a decrease in working hours should be accompanied by an increase in the wage rate, but that individuals on average accept a decrease in their monthly net income in order to fulfil their desire of a working time reduction. For the purpose of comprehension: calculating $1 - wc^r$ describes what share of the percentage working time reduction the individual is willing to accept as an income decrease. If the average value was $\overline{wc^r} = 1$, individuals would not be willing to forgo any of their income when reducing their working time; if the average value was $\overline{wc^r} = 0.5$, individuals would be willing to reduce their income only by half as many percentage points as the working time; and if the average value was $\overline{wc^r} = 0$, individuals would be willing to reduce their income by as many percentage points as the working time. Therefore, on average the individuals of the first group would be willing to reduce their monthly net income by approximately one third of the percentage points of the desired working time reduction.

Using the second group, the obtained results from the first group barely change. While the number of participants who would be willing to accept a lower wage rate than their current one in order to reduce their working time decreases by 1%, the number of individuals who would require *some* or full wage compensation both increase by less than 1%. However, the average required wage compensation increases to $\overline{wc^r} = 0.723$ and the median slightly increases to 0.63. This means that on average the individuals of the second group would be willing to reduce their monthly net income by a bit more than one fourth of the percentage points of the desired working time reduction.

Bigger changes can be observed when analysing the third group. Since participants affected by the second issue are excluded from the sample, the number of participants with a required wage compensation $wc_i^r > 1$ decreases to zero. Once participants with the demand for a higher income than the initial one are ruled out, particularly the percentage share of the group which requires *some* wage compensation increases considerably to a total of 70.18%. While the percentage shares for the groups which require no wage compensation or even less essentially do not change compared to the second group, now the group of participants which requires a full wage compensation makes up 23.91%. As a consequence of the exclusion of participants with a required wage compensation $wc_i^r > 1$, of course both the values of both the average and the median required wage compensation decrease. While the average value decreases strongly to $\overline{wc^r} = 0.578$, the median value only decreases weakly to 0.609. The low average required wage compensation indicates that on average the individuals of the third group would be willing to reduce their monthly net income by 42.2% of the percentage points of the desired working time reduction.

Due to the high variation in average required wage compensations it seems more plausible to take the median required wage compensation as reference value. According to this value the median accepted

decrease in monthly net income amounts to roughly 28% of the percentage desired working time reduction.

Overall, the results between the three groups do not vary severely, since in all three groups about two thirds of the participants require *some* wage compensation, while clearly less than one third of the participants require a full or even larger wage compensation. Only when interpreting wage compensations $wc_i^r > 1$ as wage compensations which are at least full wage compensations, an inclusion of the respective participants would be plausible. In this case the results for group 2 should be considered most realistic, but without this interpretation the results for group 3 are most plausible.

When elaborating the participants who require *some* wage compensation, I find that - independent of the group observed – slightly over half of them require a moderate wage compensation $0.33 < wc_i^r \leq 0.66$, while approximately 22% require a small wage compensation $0 < wc_i^r \leq 0.33$ and approximately 27.5% require a high wage compensation $0.66 < wc_i^r < 1$. The distribution over the required wage compensations is presented in Figure 13.

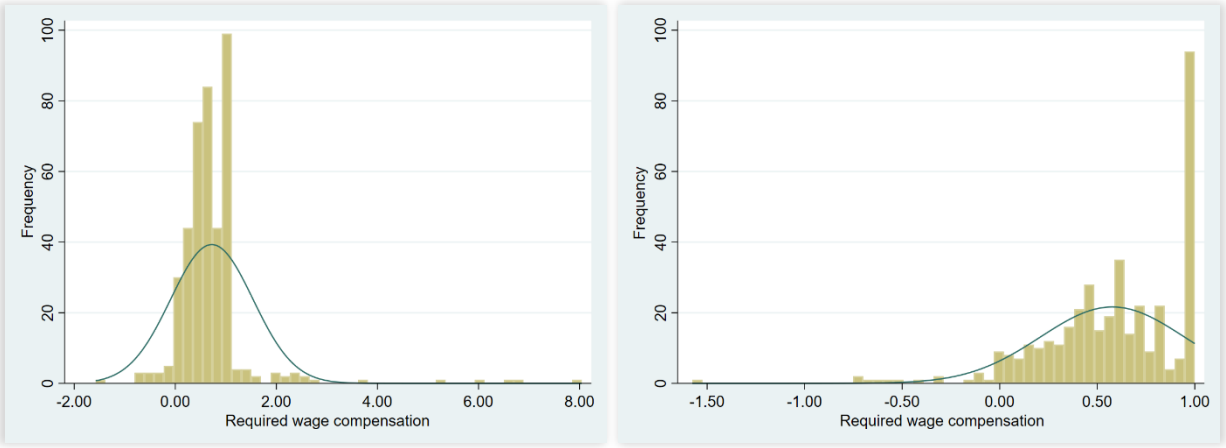

Figure 13 - Distribution of required wage compensation in case of desired working time reduction with adjusted hours and incomes (l.) and the additional exclusion of a choice of required wage compensations (r.)

The results show that, depending on the composition of the data set, between approximately 71% (group 1 and 2) and 76% (group 3) of the individuals who desire a working time reduction would be willing to do so without receiving a full wage compensation, i.e. $wc_i^r < 1$, indicating that they would like to work less and accept a smaller monthly salary but require a higher hourly wage rate. This is in line with my hypothesis that this number has increased to a value higher than 70% since 1996.

5.2.2. Required wage compensation for desired working time increase

Out of the 688 participants only 84 desire a working time increase, which makes reliable statements about this group's required wage compensations challenging. Despite this limitation, I present my findings in this chapter. As in the previous chapter with the group of individuals who desire a working time reduction, I create three compositions of my data set and compare the results which are shown in Table 4.

	Group 1		Group 2		Group 3	
$wc_i^i < 0$	3	3,57%	3	3,61%	0	0,00%
$wc_i^i = 0$	3	3,57%	2	2,41%	2	2,53%
$wc_i^i \leq 0.33$	*9*	*10,71%*	*9*	*10,84%*	*9*	*11,39%*
$0.33 < wc_i^i \leq 0.66$	*22*	*26,19%*	*22*	*26,51%*	*22*	*27,85%*
$0.66 < wc_i^i < 1$	*19*	*22,62%*	*19*	*22,89%*	*19*	*24,05%*
$0 < wc_i^i < 1$	50	59,52%	50	60,24%	50	63,29%
$wc_i^i = 1$	2	2,38%	2	2,41%	2	2,53%
$wc_i^i > 1$	26	30,95%	26	31,33%	25	31,65%
	84	100,00%	83	100,00%	79	100,00%

Table 4 - Required wage compensation for working time increase

Using the non-edited data set I find that again a majority of 59.52% requires *some* wage compensation for a working time increase, i.e. $0 < wc_i^i < 1$. While 3.57% are happy to keep their current income and thus require no wage compensation (i.e. $wc_i^i = 0$), 2.38% require a full wage compensation (i.e. $wc_i^i = 1$) so that their wage rate would stay the same. 30.95% show a required wage compensation $wc_i^i > 1$ and thus require a higher wage rate than their initial one in order to increase their working time. This demand can be plausible to a certain degree which has to be defined when analysing the third group. Usually one would expect full-time workers to require a higher wage rate in order to increase their working time, but surprisingly roughly 53.8% of the participants who require a wage compensation $wc_i^i > 1$ are part-time workers. Finally, 3.57% indicated an income lower than their initial one, which leads to a negative required wage compensation. The negative required wage compensation could result from a very strong preference for working time but having a closer look at the three concerned individuals, one can see that either the desired working time increases are too small to explain such a strong preference for working time or the required income is too little to be considered a true statement. The average required wage compensation is $\overline{wc^i} = 1.097$ and the median required wage compensation is 0.841. These two values suggest that, as expected, an increase in working hours can usually only be implemented if the wage rate does not decrease significantly. A value of 0.841 indicates that the individual's income has to increase by 84.1% of the percentage desired working time increase.

There is hardly any change in the results of the second group compared to the first group as only one individual is affected. This individual drops out of the data set, because with the adjusted hours there is no desired change in working time anymore. Since the stated required income is the same as the initial income, after excluding this participant there is one individual less in the group which requires no wage compensation.

To create the third group, I decided to exclude participants who require a wage which is at least 1.5 times higher than the original wage in order to increase their working time. Only one individual was affected by this selection criterion. Additionally, I decided to exclude the three individuals who require a negative wage compensation. Since only four participants were additionally excluded from the sample, the percentage shares of the single groups again do not change considerably. Only the percentage share of the group of individuals which requires *some* wage compensation increases from approximately 60% to approximately 63%. Since the one individual that was excluded due to the very high required wage increase showed a required wage compensation of $wc_i^i = 28.5$, the average required wage compensation decreases to $\overline{wc^i} = 0.95$. The median required wage compensation, on the other hand, increases minimally to 0.87 because of the exclusion of the three individuals with small negative required wage compensations.

Analogously to the group of individuals who desire a working time reduction, only when one interprets wage compensations $wc_i^i < 1$ as the requirement of at least no wage compensation, an inclusion of the respective participants would be plausible. In this case the results for group 2 would be most realistic, but without this interpretation the results for group 3 are most plausible.

An investigation of the group which requires *some* wage compensation shows that only 18% would be happy with a small wage compensation $0 < wc_i^i \leq 0.33$, while 44% require a moderate wage

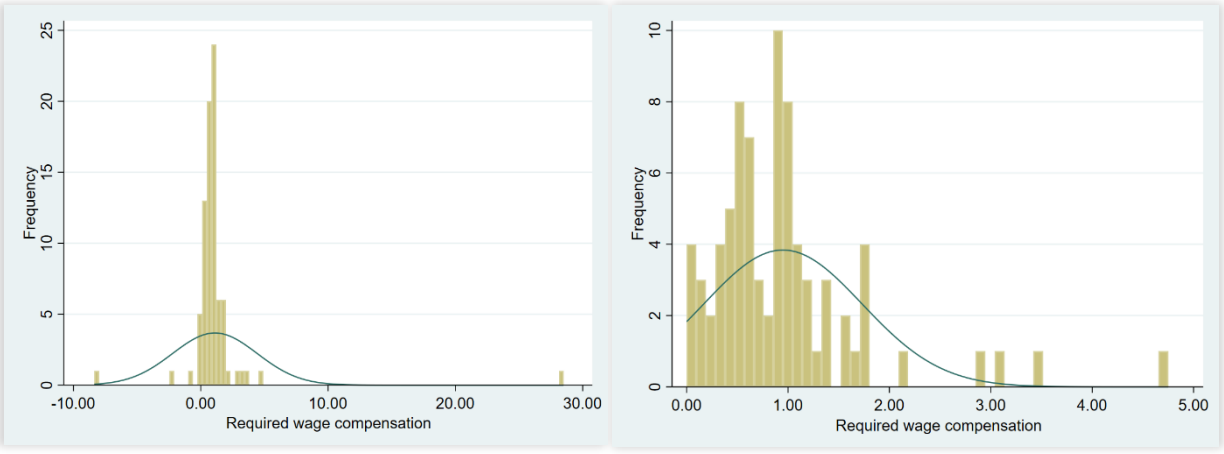

Figure 14 - Distribution of required wage compensation in case of desired working time increase with adjusted hours (l.) and the additional exclusion of irrational required wage compensations (r.)

compensation $0.33 < wc_i^i \leq 0.66$ and 38% require a high wage compensation $0.66 < wc_i^i < 1$ to increase their working time. The distribution over the required wage compensations is presented in Figure 14.

Independent of the choice of group, only approximately one third of the participants would demand at least the same wage rate as before, while two thirds would be happy to increase their working time and receive a lower wage than initially. Considering that I expected 75% of the individuals to require at least a full wage compensation, this hypothesised value is significantly higher than the true value for the sample.

5.2.3. Required wage compensation and income

To investigate a potential difference in required wage compensations between high and low-income groups, in a first step I visualise these differences with quadratic predictions for the groups of individuals with monthly net incomes below the 25% quantile and above the 75% quantile which I refer to as low-income group and high-income group, respectively. The 25% quantile is 1600 euros, and the 75% quantile is 2500 euros. The fitted values show which percentage change in income can be expected for each of the groups, given a certain percentage change in working hours. In a second step I use a regression to analyse the influence of the monthly net income on the required wage compensation.

Plotting all data with adjusted incomes and hours (Figure 15, left) shows that, other than expected, in the range of desired working time reductions the functional forms of the quadratic approximations do not differ substantially. Additionally, as can be seen by means of the lowest point of the curves, the maximum percentage desired working time reductions for the low-income group are much larger than the maximum percentage desired working time reductions for the high-income group. Furthermore, both approximations were expected to run much closer to the y-axis (i.e. line of full wage compensation) than they do. This shows that a full wage compensation is not required as often as hypothesised.
In the range of desired working time increases the quadratic approximation for low incomes runs close to the line of full wage compensation (i.e. 45° line). However, due to the substantial number of individuals who require an income increase for a desired working time reduction, the quadratic approximation for high incomes is bent clearly below the line of full wage compensation. Nevertheless, this shows that indeed low-income individuals desire larger working time increases than high-income individuals.

Excluding outliers yields similar functional forms of the quadratic approximations which are shifted down very slightly as a consequence (Figure 15, right). Outliers were defined as individuals whose percentage desired working time change or percentage required income change were below or above a

defined threshold. This threshold was defined as the 25% quantile minus ten times the difference between the 25% quantile and the 75% quantile for outliers with very small values. For outliers with large values it was defined as the 75% quantile plus ten times the difference between the quantiles. 11 individuals were identified as such outliers but apparently, they do not account for any major changes in the illustration of the desired working time changes and required income changes for the two income groups of interest.

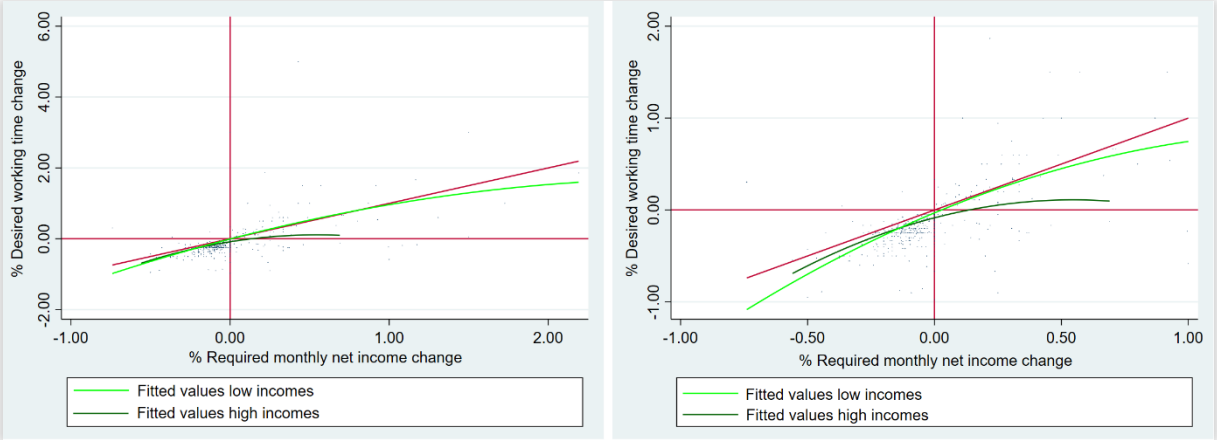

Figure 15 - Quadratic fit of desired working time change and required income change for low and high incomes based on all data (left), excluding outliers (right)

Even though in both illustrations the quadratic approximation for low incomes looks similar to what was expected, it only runs precisely as expected in the range of working time increases. This means that individuals with low incomes who desire working time increases are even willing to increase their working time if their wage rate slightly decreases as a consequence. In the range of working time reductions, they often surprisingly do not require an income close to their current income, but they are happy with moderate wage compensations and thus with a reduction of their monthly net income.

As hypothesised, the desire for working time increases is smaller among the group of high incomes. This is indicated by the dark green curve only reaching small positive values of y. Smaller working time increases coming with comparably high income increases imply a high required wage compensation. But one hast to consider that some implausible combinations of negative desired working time changes and positive required income changes lead to the curve being bent downwards even more.
As expected, individuals with high monthly net incomes require a smaller wage compensation than individuals with low incomes in the range of working time reductions. This is indicated by the dark green curve running closer to the diagonal line than the light green curve in the range of working time reductions. What is more, individuals with high incomes even seem to require almost no wage compensation in order to reduce their working time to the desired extent.

I decided to split the regression of the individual's monthly net income on the required wage compensation into two separate bivariate regressions, one where the required wage compensation for a desired working time reduction is the dependent variable, and one where the required wage compensation for a desired working time increase is the dependent variable. This decision was made due to the very different forms and implications of each of the two functions for low and high incomes in the ranges of desired working time reductions and desired working time increases.

A dummy variable for the two income groups was created. This dummy variable takes the value 1 for individuals who belong to the high-income group and the value 0 for individuals who belong to the low-income group. Since chapter 5.2.1. has shown that, when wage compensations $wc_i^r > 1$ are interpreted as "at least full wage compensation", using the adjusted data set excluding outliers and including individuals affected by the second issue is most plausible. Therefore, in a first step I use this adjusted data set without any additional editing, then I manipulate the data set and replace wage compensations $wc_i^r > 1$ with $wc_i^r = 1$. Finally, I use the same data set, but exclude individuals affected by the second issue (i.e. individuals with $wc_i^r > 1$) .

When running the regression for the adjusted data set without outliers, the regression coefficient of -0.3084 predicts that individuals who belong to the high-income group require a wage compensation which is smaller by 0.3084. This is in line with the findings concerning the visualisation of the quadratic fits discussed previously, where in the range of desired working time reductions the curve for high incomes runs closer to the line of no wage compensation (i.e. a wage compensation $wc_i^r = 0$). However, this regression can be used for the comparison of the two groups but not for the prediction of the average required wage compensation of each group. This is because the data set still contains individuals who were affected by the second issue and thus show extremely high required wage compensations which lead to large intercepts in the regression models.

When replacing required wage compensations $wc_i^r > 1$ by $wc_i^r = 1$, the regression coefficient increases to -0.1679. The obtained intercept is 0.68, so that the model predicts a required wage compensation of 0.68 for the low-income group and a required wage compensation of 0.5121 for the high-income group. The obtained regression coefficient and intercept are considered more plausible than the ones from the first regression.

This becomes clear when comparing the obtained values to the results from the regression where individuals with wage compensations $wc_i^r > 1$ are excluded (Table 5). The regression coefficient increases only slightly to -0.127. With a constant of 0.627 the model predicts that for individuals of the low-income group the required wage compensation is 0.627 while it is 0.5 for individuals of the high-income group. The predicted value for the high-income group is very similar to the one obtained in the previous regression. The predicted value for the low-income group decreases slightly more. This is because mainly individuals from the low-income group indicated wage compensations $wc_i^r > 1$.

Source	SS	df	MS	Number of obs	=	184
				F(1, 182)	=	3.91
Model	.68250888	1	.68250888	Prob > F	=	0.0495
Residual	31.7633189	182	.17452373	R-squared	=	0.0210
				Adj R-squared	=	0.0157
Total	32.4458278	183	.177299605	Root MSE	=	.41776

wcredcorre~d	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
incomegroup	-.1269843	.064213	-1.98	0.049	-.253682	-.0002866
_cons	.626835	.0514227	12.19	0.000	.5253736	.7282964

Table 5 - Regression output for required wage compensation and income groups

In case of desired working time increases it is impossible to conduct a reliable regression, since there are only five to seven individuals who belong to the high-income group and desire a working time increase. This results in a very high F-value, indicating that the variable *incomegroup* does not have any explanatory power.

5.2.4. Required wage compensation and other characteristics

When studying the impact of other characteristics on the required wage compensation, I stick to the data sets which exclude both outliers and individuals affected by the second issue discussed in Chapter 4.4.1.

For the range of desired working time reductions, I decided to include the variables age, being the main earner, having a child, working part or full-time and household income in the model. This is because I did not expect the individual's education level to have an impact on the decision how much of the monthly net income one is willing to forgo in order to decrease the working time. The same reasoning applies to the variables gender and whether the individual has a partner. Working from home-office or being on a short-time work scheme also were not expected to influence the required wage compensation. On the other hand, I expected older people to be willing to forgo more of their income in order to reduce their working time (i.e. require a smaller value for wc_i^r) than young people due to higher earnings and other incomes and possibly a greater proximity to their pension. The same logic applies to workers who consider themselves the main earners. I expected the presence of at least one child to induce participants to be willing to forgo less of their income (i.e. require a larger value for wc_i^r) than participants without a child. Additionally, it seems reasonable that workers who work full-time are rather willing to forgo some of their income when reducing their working hours than workers who work part-time since full-time workers usually earn more and thus may be able to cope better with income reductions. Finally, workers with higher household incomes are expected to be willing to forgo more of their labour income since they do not depend on it as much.

When checking for potential multicollinearity issues among the chosen variables, no such issue could be detected. Table 6 therefore shows the results for the multivariate regression. While the regression coefficients for the household income and age are statistically significant, the presence of a child or the employment situation do not have a statistically significant impact on the required wage compensation.

Source	SS	df	MS	Number of obs	=	389
				F(5, 383)	=	5.79
Model	3.72436995	5	.74487399	Prob > F	=	0.0000
Residual	49.2621205	383	.128621725	R-squared	=	0.0703
				Adj R-squared	=	0.0582
Total	52.9864905	388	.13656312	Root MSE	=	.35864

wcredcorrected	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
age	-.0032727	.0016359	-2.00	0.046	-.0064891	-.0000563
mainearner	-.0755279	.0469622	-1.61	0.109	-.1678639	.0168081
child	.0554791	.0392851	1.41	0.159	-.0217625	.1327206
fullpart	-.0565978	.0678087	-0.83	0.404	-.1899217	.0767261
HHincomecorrected	-.0000536	.000012	-4.45	0.000	-.0000772	-.0000299
_cons	.9570174	.0838116	11.42	0.000	.792229	1.121806

Table 6 - Regression output for required wage compensation (working time reduction)

For every additional 1000 euros in household income, an individual is predicted to have a required wage compensation which is smaller by 0.054. For an increase in age by one year, the model predicts a decrease of 0.0033 in the required wage compensation, making it a difference of roughly 0.1 for a 30-year difference in age. Finally, the regression coefficient for the variable *mainearner* just barely misses the 10% significance level. Even though only two of the five variables can be considered statistically significant for sure, all five regression coefficients have the expected sign.

For the range of desired working time increases, it is again not possible to make reliable statements about the variables' influence on the reuqired wage compensation due to the small number of observations. This is also indicated by a high p-value of 0.22 for the F-test (Table 7).

Source	SS	df	MS	Number of obs	=	72
				F(5, 66)	=	1.45
Model	4.28338247	5	.856676493	Prob > F	=	0.2193
Residual	39.0809186	66	.592135131	R-squared	=	0.0988
				Adj R-squared	=	0.0305
Total	43.3643011	71	.610764804	Root MSE	=	.7695

wcinccorrected	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
age	.0098707	.0073218	1.35	0.182	-.0047478	.0244892
mainearner	-.4332462	.2283921	-1.90	0.062	-.8892457	.0227534
child	-.2816697	.2152663	-1.31	0.195	-.7114628	.1481234
fullpart	-.0166997	.2150014	-0.08	0.938	-.4459638	.4125644
HHincomecorrected	.0000137	.0000853	0.16	0.873	-.0001565	.000184
_cons	.8621135	.4905206	1.76	0.083	-.1172426	1.841469

Table 7 - Regression output for required wage compensation (working time increase)

For the model selection the same criteria was used as for the model with desired working time reductions. But in this case older people are expected to require a larger wage compensation than younger people since younger people may see more option to regain the loss from the wage decrease in the future. Someone who is the main earner and wants to increase his/her working time would probably require a higher wage compensation than someone who is not the main earner since either there is no partner with additional earnings or the partner earns less, so that the main earner has got a more crucial position for the household's income. Workers who have a child may require a higher wage compensation for a similar reason: There are other individuals who depend on their income. Since the desire for working time increases is stronger among part-time workers than among full-time workers, I would usually expect these workers to be rather willing to accept decreases in their wage rate (i.e. smaller wc_i^i) in order to increase their working time. But the analysis in chapter 5.2.2. has shown that 53.8% of the individuals who require a wage increase are part-time workers so that potentially an inverse logic applies. Finally, workers with a higher household income do not rely on their labour income as much, so for them it is only plausible to increase their working time if their wage rate does not decrease too strongly (i.e. larger wc_i^i).

As Table 7 shows, in this case only the variable *mainearner* has a statistically significant impact on the required wage compensation. The p-value of 0.062 indicates that the variable is only statistically significant at the 10% level and the regression coefficient of -0.433 allows for the prediction that being the main earner induces an individual to require a wage compensation which is smaller by -0.433. This contradicts the expectation that being a main earner would induce the individual to require a larger wage compensation. Also the regression coefficient for the employment situation takes an unexpected sign, but in this case the regression coefficient is highly statistically insignificant (p-value of 0.938).

5.3. Shape of indifference curves

For the analysis of labour supply elasticities and indifference curves I proceed analogously to Collewet et al. (2018) who first observe median indifference curves and required wages before computing the elasticities. When plotting the proposed working hours against the required monthly net income (Figure 16), the obtained median indifference curve looks roughly linear and is upward sloping. This means that the median indifference curve between income and leisure time is downward sloping. The linear relationship only does not hold for proposed hours smaller than six per week. But as mentioned in Chapter 4.1. the proposed hours were supposed not to be under seven hours in the first place. However, due to some very low indicated working hours a few individuals were proposed working hours below this threshold. The same problem occurred for some individuals who indicated very high working hours. For the sake of readability all hours above 60 are not shown in Figure 16.

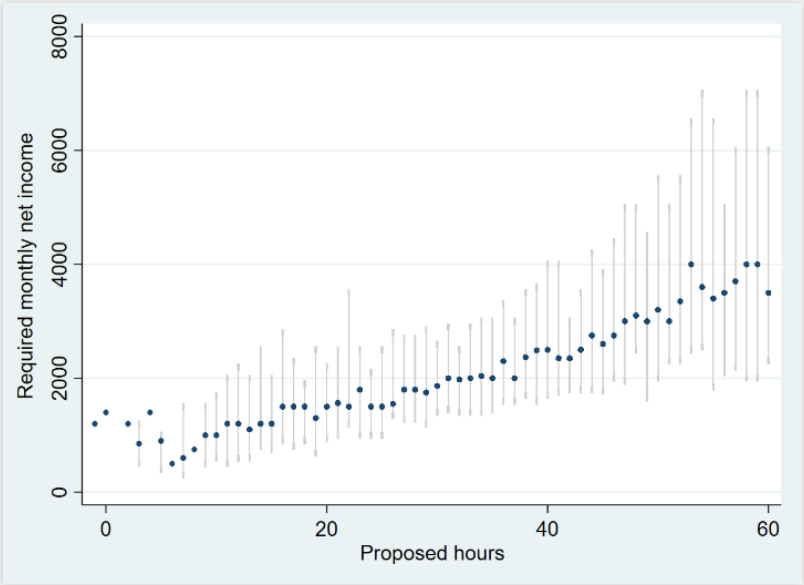

Figure 16 - Median indifference curve in levels with 10th and 90th percentile

When regressing the proposed weekly working hours on the required weekly net income, I find that the regression coefficient of 13.75559 is statistically significant at the 1% level. The model therefore predicts that an additional hour of work is worth approximately 13.76 euros to the participants.

Source	SS	df	MS	Number of obs	=	2,752
				F(1, 2750)	=	1454.01
Model	96853397.1	1	96853397.1	Prob > F	=	0.0000
Residual	183181073	2,750	66611.2994	R-squared	=	0.3459
				Adj R-squared	=	0.3456
Total	280034471	2,751	101793.701	Root MSE	=	258.09

RequiredWeek	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Proposed	13.75559	.3607411	38.13	0.000	13.04824	14.46294
_cons	73.48489	14.42015	5.10	0.000	45.20947	101.7603

Table 8 - Regression output for required weekly wage and proposed weekly hours

Even though the median indifference curve for the pooled data looks roughly linear, this does not necessarily have to be the case at the individual level. To check this, in Figure 17 the proposed change in working hours compared to the initial working hours is plotted against the change in adjusted required monthly net income. This way the individuals' deviations from their starting point become obvious. For the sake of readability only changes in hours with an absolute value smaller than 26 are shown. At least in the range of proposed working time changes with an absolute value smaller than 16 the median indifference curve looks slightly more convex than the median indifference curve in levels.

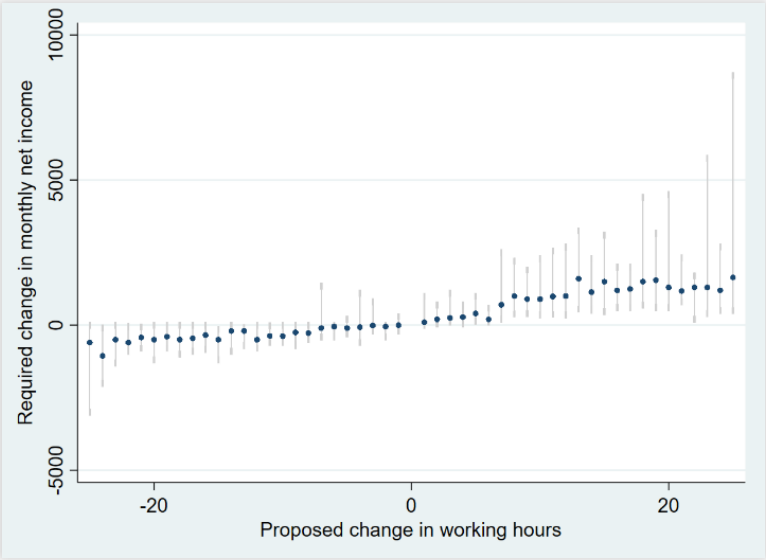

Figure 17 - Median indifference curve in changes with 10th and 90th percentile

This slightly convex shape is confirmed when looking at the average or median slopes between the individuals' starting points and the average proposed working hour deviations (Table 9). The column which displays the values for $H - (H + i)$ shows the average proposed working hour deviation from the starting point. Since the fourth issue discussed in Chapter 4.4.1. was assumed to influence the computation of the slopes, I composed two additional reduced data sets. The first data set excludes only the respondents who show patterns or inconsistent preference orders, the second data set additionally excludes the respondents who only show inconsistent preference orders after considering the initial combination of working hours and income. Independent of the group I find that the participants' slopes of the indifference curves over the range between the starting point and the proposed working hours

		$H - (H + i)$	Median	Mean	Std.Dev.	N
1)	Slope (H-random)	-14.16	5.75	3.82	30.93	688
	Slope (H-5)	-5	4.60	2.58	19.02	688
	Slope (H+5)	5	18.41	25.08	30.59	688
	Slope (H+random)	11.72	19.18	28.08	49.03	687
2)	Slope (H-random)	-14.40	5.75	6.23	13.65	636
	Slope (H-5)	-5	4.60	3.03	18.14	636
	Slope (H+5)	5	18.41	26.33	28.99	636
	Slope (H+random)	11.79	19.55	29.23	43.28	636
3)	Slope (H-random)	-14.26	6.28	7.70	9.95	577
	Slope (H-5)	-5	4.60	6.74	8.50	577
	Slope (H+5)	5	18.41	23.38	21.95	577
	Slope (H+random)	12.01	18.94	25.46	34.74	577

1) Adjusted data for whole data set, 2) Adjusted data for data set without responses that showed patterns or inconsistent preference orders, 3) Adjusted data for data set without responses that showed patterns or inconsistent preference orders and without responses that only showed inconsistent preference orders after including the starting point

Table 9 - Summary statistics for slopes between starting point and working hour deviations

$H + 5$ and $H + random$ are much steeper than the slopes over the range between the starting point and the proposed working hours $H - 5$ and $H - random$. This means that the slopes are higher for proposed working time increases than for proposed working time decreases. For the computation of the slopes I used equation (8) and then calculated the mean or median value for the respective group.

The median values of the required wage for an additional hour of work do not vary much between a proposed working time increase of five hours or a random working time increase, which was on average approximately seven hours higher. For an additional hour of work the median required wage is about 19 euros. The median value for an additional hour of leisure is much smaller and varies between 4.6 and approximately six euros depending on how large the proposed working time decrease is. These values are an indication for a weakly convex indifference curve at the individual level. However, taking into consideration that the curve is almost linear over the whole segment of proposed working time increases and over the whole segment of proposed working time reductions, one can infer that there is a kink around the individuals' starting points. Therefore, the curve must be most convex around the individuals' starting points and becomes less convex the further one moves away from it. While the indifference curve is definitely weakly convex for the range of working hours between $H - 5$ and $H + random$, this does not hold for the range of working hours between the initial working hours, H_0, and $H - random$. For this range, the median value for an additional hour leisure is smaller for small proposed working time reductions than for large working time reductions. Both the average and the median slopes for the range of working hours between H_0 and $H - random$ are steeper than those for the range of working hours between H_0 and $H - 5$, even though on average the proposed working hours for $H - random$ were approximately nine hours smaller. A possible explanation could be that "an increase in leisure time by five hours is considered by the respondents too little to justify any decrease in earnings, while larger increases in leisure time are deemed worth paying for, even if little" (Collewet et al., 2018, p. 14).

When the slopes over the different ranges of proposed working hours are compared for the whole adjusted data set, I find that 92% of the respondents show weakly convex indifference curves over the range between $H - 5$ and $H + 5$ and 86% of the respondents show strictly convex indifference curves over this range. However, when it comes to the shape of the indifference curve over the whole range between $H - random$ and $H + random$ only 20% of the respondents show weakly convex indifference curves. But as mentioned previously, most respondents indicated incomes which led to a steeper slope for the range between H_0 and $H - random$ than for the range between H_0 and $H - 5$. Therefore, when excluding the segment of hours between $H - random$ and $H - 5$ from the comparison of the slopes, the share of respondents who show a weakly convex indifference curve increases to 42% again. The obtained percentage shares barely change when excluding participants who are affected by the fourth issue.

5.4. Labour supply elasticities

Having found that the indifference curves are weakly convex on average, I proceed with the computation of the elasticity of substitution and the income elasticity, which together with the ratio of labour income to non-labour income constitute the uncompensated wage elasticity. Again, I account for the issues discussed in Chapter 4.4.1. and evaluate the obtained estimates.

5.4.1. Elasticity of substitution

The elasticity of substitution describes the percentage change in working hours after a 1% increase in the wage rate while utility is held constant. To compute the elasticity of substitution I use equation (9) and the obtained wage rates and hour deviations for the segments between $H - 5$ and H_0 and between H_0 and $H + 5$. Taking the deviations which are closest to the individuals' starting points gives the most precise estimates possible. Table 10 shows that the obtained estimates are fairly equal for the unadjusted data set and the data set with adjusted monthly net incomes and weekly working hours. Depending on whether participants who were affected by the fourth issue are excluded or not, the estimate for the elasticity of substitution lies between 0.091 and 0.105. I consider the results in the third and fourth row to be most realistic, since on the one hand answers I classify as invalid are excluded. Those answers come from respondents who show patterns in their stated required incomes for the four proposed working hours. On the other hand, answers of respondents whose preference orders are inconsistent are excluded as well. Such inconsistent preference orders severely affect the wage rate which is computed in equation (8) and thus also enters equation (9). Therefore, the most realistic value for the mean elasticity of substitution most likely lies between 0.096 and 0.105. That is, on average a 1% increase in the wage rate would lead to an increase of 0.096% to 0.105% in labour supply.

ϵ^s	1)	2)
All data *n = 647**	0.091 (1.909)	0.092 (1.91)
Excl. 4th issue *(only patterns excluded)* *n = 637**	0.093 (1.923)	0.094 (1.925)
Excl. 4th issue *(patterns & inconsistent preference orders excluded)* *n = 599**	0.095 (1.983)	0.096 (1.985)
Excl. 4th issue *(all excluded)* *n = 541**	0.103 (2.087)	0.105 (2.089)

1) Unadjusted data, 2) Income and hours adjusted

*1 observation less for 2)

Table 10 - Elasticity of substitution means and standard deviations

The mean elasticity of substitution is relatively small, indicating a negligible substitution effect. This is due to the strong convexity of the individuals' indifference curves around the starting point. This strong convexity has been demonstrated in Chapter 5.6. and means that a large change in the wage rate is accompanied only by a comparably small change in the working time. Therefore, if the large change in the wage rate decreases to a small change of only 1%, the according change in the labour supply decreases to a very small percentage.

Due to the construction of equation (9), the elasticity of substitution cannot be computed for the individuals who require the same wage rate for the segments below and above their starting point. Since the value of the elasticity of substitution would have been infinite for the respective individuals, the mean value of the elasticity of substitution would have been infinite, too. Therefore, these individuals were excluded from the computation, which leads to the results in Table 10. Collewet et al. (2018) decided to account for these individuals by replacing their values of the elasticity of substitution by the 99th percentile of the distribution of observed elasticities of substitution. This way they proxy a very high value which can still be dealt with in calculations and statistics. The 99th percentile in my sample takes the value 1.13. Due to the similarity in obtained estimates for the unadjusted and adjusted data in Table 10, I decided to conduct the computation only for the adjusted data.
Table 11 shows that the estimated mean value of the elasticity of substitution increases by approximately 0.06 compared to the previous computation. Following the same logic as in the previous section, after attaching the value 1.13 to the 37 to 42 individuals whose elasticity of substitution could not be computed, the most realistic estimate of the mean elasticity of substitution lies between 0.158 and 0.17. I consider the higher values for the elasticity of substitution presented in Table 11 more plausible than the lower values in Table 10, because the low values reported are held artificially low due to the exclusion of high elasticities of substitution.

ϵ^s	Adjusted data
All data *n = 688, value replaced for n = 42*	0.155 (1.867)
Excl. 4th issue *(only patterns excluded)* *n = 674, value replaced for n = 38*	0.152 (1.885)
Excl. 4th issue *(patterns & inconsistent preference orders excluded)* *n = 636, value replaced for n = 38*	0.158 (1.94)
Excl. 4th issue *(all excluded)* *n = 577, value replaced for n = 37*	0.17 (2.036)

Table 11 - Elasticity of substitution means and standard deviations

5.4.2. Income elasticity

The income elasticity describes the change in labour supply after an increase in non-labour income. This change is usually expected to be negative as the same living standard can be kept while enjoying more leisure time. As Figure 18 shows, even when plotting the non-adjusted current working time against the number of hours that the participants would still want to work after a lottery win, most observations lie below the 45-degree line, which confirms that leisure usually is a normal good. A vast majority in the sample would want to decrease their labour supply after receiving a monthly lottery win which amounts to the individual's monthly net household income.

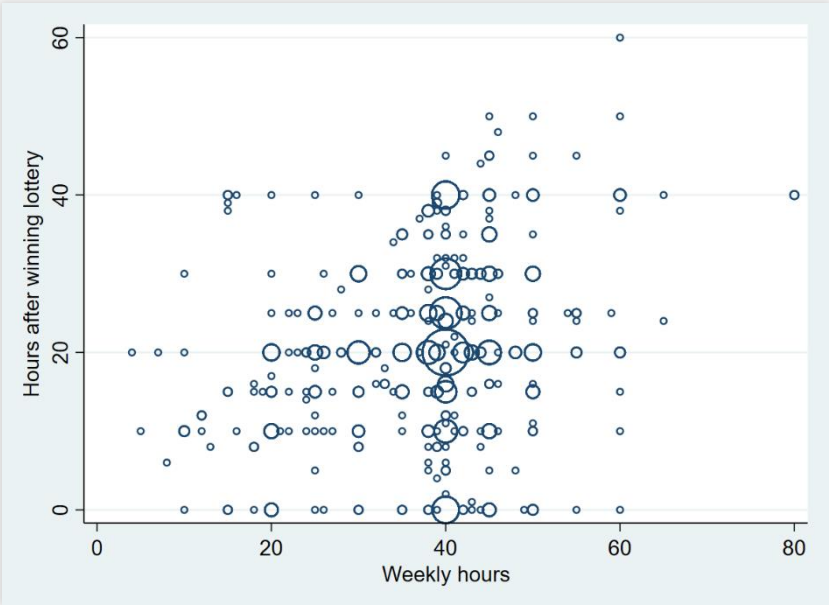

Figure 18 - Working hours before and after lottery win

To analyse how the decision about labour supply would be affected by the lottery win, I compared four different groups, each with the original stated working hours and with adjusted working hours. The first group contains all data; the second group excludes all participants affected by the fifth issue discussed in Chapter 4.4.1. (reported household income smaller than monthly net income) apart from those whose household income exceeds the monthly net income after adjusting the falsely indicated yearly net income; the third group excludes all participants affected by the sixth issue (indicated working hours after a lottery win higher than stated desired working hours); and the last group excludes both participants affected by the fifth and the sixth issue.

It turns out that the selection of the data set is not important for the distribution of the percentage shares regarding the individuals' decisions to quit work, decrease or increase their working time or not to change their working time at all. Excluding participants of both issues leads to 0.5% more participants wanting to quit, 1.5% more participants wanting to work less, 1.2% less participants wanting to work the same hours, and 0.8% less participants wanting to work more. Table 12 therefore shows the sample

distribution for the whole data set. Approximately 8% of individuals report that they would quit their current employment after they won the lottery. This indicates that the participants in general "have understood the question correctly and did not interpret winning a lottery as synonymous to becoming a billionaire" (Collewet et al., 2018, p. 20). As assumed a large share of approximately 79% would want to decrease their labour supply but would still want to work after winning the lottery. Out of the remaining participants a bit less than 10% would want to keep their current working time and only about 3% state that they would want to increase their labour supply.

change	Freq.	Percent	Cum.
quit	55	7.99	7.99
less	544	79.07	87.06
same	67	9.74	96.80
more	22	3.20	100.00
Total	688	100.00	

Table 12 - Change in labour supply after lottery win

To compute the individual income elasticities, equation (10) is used. The individual's monthly non-labour income is calculated by the subtraction of the monthly net income from the monthly net household income. Depending on which group I investigate and which variables I adjust for, I obtain very different results for the mean income elasticity (Table 13).

ϵ^Y	1)	2)	3)	4)
All data *n = 688**	-0.077 (1.475)	-0.088 (0.503)	-0.135 (1.294)	-0.131 (0.175)
Excl. 5th issue *n = 646*	-0.071 (0.75)	-0.087 (0.518)	-0.133 (0.178)	-0.134 (0.177)
Excl. 6th issue *n = 665**	-0.079 (1.496)	-0.09 (0.51)	-0.14 (1.315)	-0.136 (0.171)
Excl. 5th & 6th issue *n = 623*	-0.073 (0.763)	-0.09 (0.526)	-0.138 (0.174)	-0.139 (0.173)

1) Unadjusted data, 2) Only monthly net household income adjusted, 3) Only monthly net income adjusted, 4) Monthly net household income, monthly net income adjusted

*2 observations less for 1) and 3)

Table 13 - Income elasticity means and standard deviations

While the smallest negative income elasticity mean of -0.071 is obtained for the unadjusted data set which excludes participants affected by the fifth issue, the highest negative mean of -0.14 is obtained for the data set which adjusts for the monthly net income and excludes participants affected by the sixth issue. In general, one can observe that the highest negative values are obtained when both the individual's household income and the monthly net income are adjusted. Further adjusting the working

hours does not change the obtained values at all. When comparing the different columns, it seems that particularly the adjustment of the individual's monthly net income plays a crucial role for the obtained mean value. I refrain from using the unadjusted data for my further analysis, since it contains highly unrealistic and false statements about household incomes and monthly net incomes which strongly influence the obtained mean values. This decision must also lead me to the conclusion that I should work with the values in the fourth column as the highly unrealistic and false statements are adjusted in this case. Additionally, including participants who are affected by the sixth issue makes sense, if one assumes that their stated working hours after winning the lottery are higher than their reported desired working hours for the reason that they would change to a more "pleasant" activity for which they would like to increase their working time. Following this reasoning, the third and the fourth row should be excluded, too, resulting in plausible mean income elasticities between -0.131 and -0.134.

However, using equation (10) all individuals whose non-labour income is zero are included in the computation of the mean elasticity with an income elasticity of zero. Even though they are proposed their monthly net household income as a monthly lottery win, the percentage change in non-labour income from zero to the monthly net income is undefined or can be interpreted as infinite. Therefore, an "infinite" percentage increase in non-labour income would induce a comparably infinitesimal percentage change in working hours, so that the working time reaction to a 1% increase in non-labour income would be zero. If the affected 155 observations were nevertheless excluded from the computation of the income elasticity mean the possible mean values for the fourth column would range from -0.169 to -0.183.

5.4.3. Uncompensated wage elasticity

Calculating the obtained values for the elasticity of substitution and the income elasticity into equation (7) yields the uncompensated wage elasticity. For this computation, the number of observations decreases. This is because for the 155 individuals who indicated a non-labour income equal to zero and thus were assigned an income elasticity of zero, the ratio of labour income to non-labour income becomes undefined. This is why the obtained mean income elasticities are of a larger negative magnitude than the ones obtained in the previous chapter. The number of observations further decreases, if the individuals whose elasticities of substitution are not computable are excluded from the sample instead of being attached the value of the 99^{th} percentile of the distribution of the elasticity of substitution. Table 14 shows the obtained estimates for the elasticity of substitution, the income elasticity, the income effect, and the uncompensated wage elasticity when only individuals are included for whom both a value for the elasticity of substitution and a value for the income elasticity are available.

In Chapter 5.4.1. I found that the mean elasticity of substitution approximately increases by 0.06 if the value of the 99th percentile is attached to the individuals whose wage rate is the same below and above the starting point. This also roughly holds for the uncompensated wage elasticity where the value increases by a value between 0.065 and 0.069 depending on the group observed. When the theoretically infinitely high value for the elasticity of substitution is excluded, the uncompensated wage elasticity ranges between -0.159 for the whole data set and -0.166 for the data set which excludes respondents affected by the fifth issue (Table 14, top). When the value is replaced by the value of the 99th percentile, the uncompensated wage elasticity ranges between -0.094 and -0.099 depending on the choice of the observed group (Table 14, bottom). Considering that the elasticities of substitution which cannot be computed would indeed tend to converge to infinity, I assess the obtained uncompensated wage elasticity which includes the values based on the 99th percentile to be more plausible. These values also come closer to the estimate of the uncompensated wage elasticity obtained by Collewet et al. (2018). Moreover, following the reasoning for the income elasticity in Chapter 5.4.2. concerning the individuals affected by the sixth issue, this group should not be excluded. Instead, it seems very reasonable to exclude individuals affected by the fourth and the fifth issue. This leads to the conclusion that a value for the uncompensated wage elasticity -0.096 is most plausible.

1)		ϵ^S	ϵ^Y	Income effect	ϵ^M
All data	*n = 502*	0.088	-0.169	-0.247	-0.159
		(2.165)	(0.184)	(0.233)	(2.174)
Excl. 4th issue	*n = 418*	0.097	-0.179	-0.256	-0.159
		(2.373)	(0.155)	(0.211)	(2.378)
Excl. 5th issue	*n = 464*	0.087	-0.175	-0.252	-0.166
		(2.252)	(0.186)	(0.203)	(2.257)
Excl. 4th & 5th issue	*n = 387*	0.096	-0.186	-0.261	-0.165
		(2.466)	(0.154)	(0.189)	(2.469)
2)					
All data	*n = 533*	0.148	-0.17	-0.242	-0.094
		(2.115)	(0.181)	(0.242)	(2.128)
Excl. 4th issue	*n = 446*	0.162	-0.178	-0.252	-0.09
		(2.311)	(0.153)	(0.208)	(2.317)
Excl. 5th issue	*n = 493*	0.148	-0.176	-0.247	-0.099
		(2.198)	(0.186)	(0.216)	(2.208)
Excl. 4th & 5th issue	*n = 413*	0.16	-0.186	-0.257	-0.096
		(2.399)	(0.152)	(0.187)	(2.405)

1) Excluding respondents whose wage below and above the starting point is the same, 2) Attaching to the respective respondents the value of the 99th percentage of the distribution of the elasticity of substitution

Table 14 - Wage elasticity of labour supply means and standard deviations

When comparing the uncompensated labour supply elasticity of individuals who desire a working time change and those who consider their current working time to be optimal, I find that the average value for the individuals who desire a working time change takes the negative value -0.2 and the median value

for these individuals is -0.167. For individuals who do not want to change their working time the average value for the uncompensated wage elasticity is 0.157 and the median value is zero. It seems plausible that individuals who would like to change their working time show a negative uncompensated wage elasticity because this group mainly consists of individuals who desire a working time reduction. A wage increase would therefore logically used for a decrease in the labour supply. This is confirmed when looking at the individuals who desire a working time increase. As expected this group of individuals shows a positive uncompensated wage elasticity. On the other hand, for the group of individuals who do not desire a working time change, the median value of zero reflects quite well that it is difficult to tell how these individuals would react to an increase in the wage rate.

To investigate the difference in mean uncompensated wage elasticities for men and women, I used the data set excluding individuals affected by the fourth and fifth issue. First I investigated whether the gender of the respondents would significantly influence the uncompensated wage elasticity. But neither the gender nor any other characteristics such as the current working hours, having a family or the age of the individuals showed significant regression coefficients.
When I check for gender specific relationships, I find that for women the current working hours significantly influence the uncompensated wage elasticity. The regression coefficient of -0.032 is statistically significant at the 1% level. The model therefore predicts that for every additional hour of current working time, women would react to a 1% increase in the wage rate with an additional decrease in labour supply of approximately 0.032%. For women, there is a very strong correlation between the working hours and the variable for full or part-time work. Therefore, only one of the two variables can be included in the model, unless instrumental variables are added to the model or other measures are taken. Replacing the variable for the current working hours with the dummy variable for full or part-time work, one obtains a highly significant regression coefficient of -0.377, indicating that full-time workers have lower uncompensated wage elasticities. For men, the model does not show significant regression coefficients for any of the variables.

When it comes to the comparison of the mean uncompensated wage elasticities for men and women, I find that as expected the male uncompensated wage elasticity is smaller on average. Using only the obtained elasticities after the attaching the value for the 99^{th} percentile of the distribution of the elasticity of substitution to the individuals in question, the mean uncompensated wage elasticity for women takes the value 0.057 and is thus even slightly smaller than the expected elasticity of 0.1. For men it takes the value -0.249 and is therefore significantly smaller than the expected elasticity of -0.15. Therefore, my null hypothesis concerning the mean of the male uncompensated wage elasticity is rejected by the single sample t-test. However, as demonstrated in Table 15 by the example of the data set containing all observations but the ones affected by the fourth issue, the null hypothesis concerning the mean of the

female uncompensated wage elasticity is not always rejected. Whether it is rejected crucially depends on the group observed.

One-sample t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
unc~omen	206	.0573259	.0420284	.6032212	-.0255374	.1401893

mean = mean(uncompwomen) t = -1.0154
Ho: mean = 0.1 degrees of freedom = 205

Ha: mean < 0.1 Ha: mean != 0.1 Ha: mean > 0.1
Pr(T < t) = 0.1556 Pr(|T| > |t|) = 0.3111 Pr(T > t) = 0.8444

One-sample t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
unc~pmen	207	-.2489976	.2321582	3.340175	-.7067084	.2087131

mean = mean(uncompmen) t = 5.3886
Ho: mean = -1.5 degrees of freedom = 206

Ha: mean < -1.5 Ha: mean != -1.5 Ha: mean > -1.5
Pr(T < t) = 1.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 0.0000

Table 15 - t-tests for men (top) and women (bottom)

In the literature, authors often make an additional difference between married and unmarried men or women. In the present survey respondents were not specifically asked about their marital status but were asked to indicate if it applied to them that they have a spouse *or* partner. I find that on average men who have a spouse or partner show the strongest negative uncompensated wage elasticities with a mean of -0324. However, due to some large negative and large positive observations, the standard deviation for partnered men is relatively high with a value of 3.67. For single men, the mean is clearly smaller with a value of 0.065. The highest mean elasticities can be observed for single women whose mean value is 0.221. Finally, the mean elasticities for women who have a partner settle around zero with a mean value of 0.02. While the obtained estimates for single men and women are in line with the findings in the literature, the estimates for both men and women with partners are substantially smaller than what the literature suggests.

5.5. Relation between wage compensations and labour supply elasticities

It seems reasonable to draw a connection between the implications of wage compensations and labour supply elasticities. In this chapter I elaborate how they are related and what assumptions influence their relationship.

The question for the desired working time has shown that only 27.3% of the participants could potentially be at an optimum, because they do not desire to change their working time. However, once a participant has indicated that no working time change is desired, the respective participant is not asked

about the required income thereupon. This means that, even though the participant's working hours are optimal, one does not know whether this also holds for the participant's monthly net income.
The finding that at least 72.7% of the participants are not at their optimum indicates that one should refrain from using graphs which assume the individual's starting point to be at an optimum. Instead, the obtained wage compensations for the respective 72.7% are helpful when drawing graphs and making implications about substitution and income effects. These obtained estimates for the wage compensation point at the true optimum of the individuals, because for the computation of the wage compensation the participants indicated their desired working time and the according required income.

Figure 19 shows an exemplary graph for the case of a desired working time reduction. The individual is not at an optimum initially (Point A) where he/she works approximately 113 hours per month. The desired working time of approximately 77 hours per month together with the required income give the individual's optimal allocation of labour supply and income. Depending on the required wage compensation, wc_i^r, the individual's required wage rate is higher or lower than initially. A wage compensation $0 < wc_i^r < 1$ is required by roughly two thirds of the participants who desire a working time reduction. Such an exemplary required wage compensation is shown by point X, where the individual's required income is smaller than the initial income, but the required wage rate is higher than the initial one. A required wage compensation $wc_i^r = 1$, which is required by approximately 23% of the participants who desire a working time reduction, would be shown by the grey dot above point X and a required wage compensation $wc_i^r = 0$ would be shown by the grey dot below point X.
For the case of desired wage compensations $0 < wc_i^r < 1$, the theoretical approach chosen for the graph would always imply both a positive substitution and a negative income effect. Even though the arrow

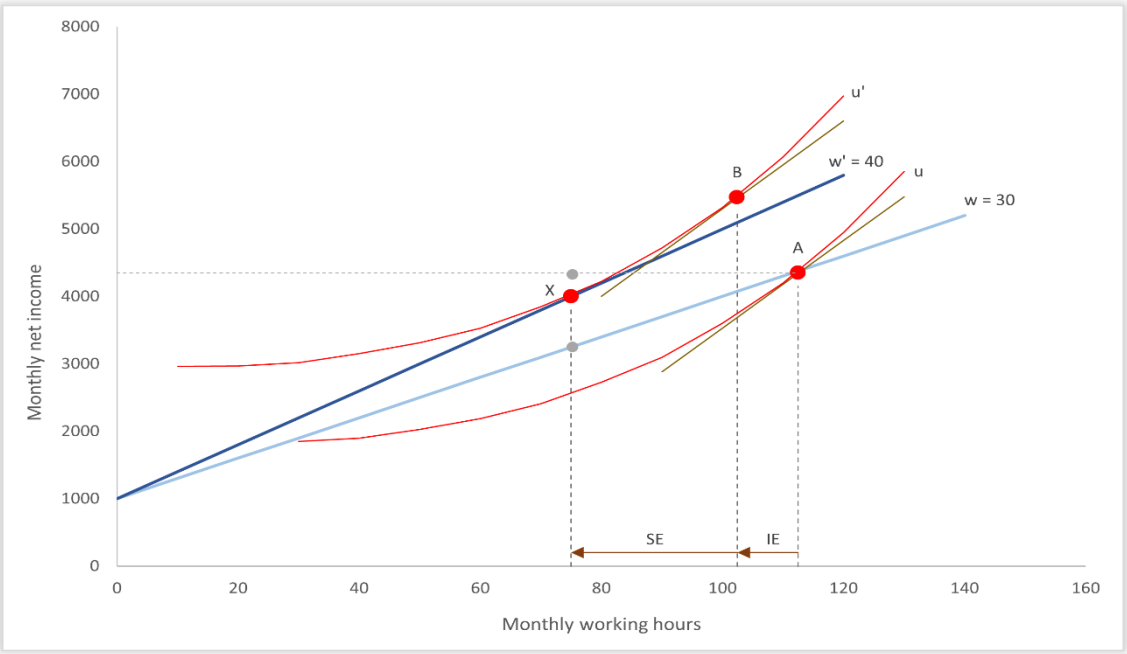

Figure 19 – Working time decrease: Wage compensation and substitution and income effect

showing the substitution effect points to the left, the substitution effect would be positive. This is because when moving from point B to point X, both the marginal rate of substitution (i.e. the wage rate) and the labour supply decrease. The income effect is usually expected to be negative as leisure is considered a normal good.

When comparing the implied substitution and income effects to those obtained in my sample, I find that for the group of participants who desire a wage compensation $0 < wc_i^r < 1$ the average income effect is approximately -0.32 and the median income effect is -0.3. Thus, the income effect takes the expected negative value. The average substitution effect lies between -0.01 and 0.15 depending on whether an outlier with the value of -44.42 is excluded or not. The median substitution effect takes the value 0.1. This is also in accordance with the usual assumption that the substitution effect is expected to be positive as a wage increase induces work to have a higher reward, and it is therefore also in accordance with the modelling seen in Figure 19, in which a wage decreases induces work to have a lower reward for the individuals. In general, I find an average income effect of -0.27 and a median income effect of -0.25 for the participants who desire a working time reduction. The average substitution effect lies between 0.12 and 0.16 and the median substitution effect is 0.09.

The magnitudes of the two effects show that the true location of point B in Figure 19 should be closer to point X than to point A. The income effect is probably larger also due to the multiplication of the income elasticity with the mechanical effect wH^*/Y_0. It seems reasonable to expect this term to take a value larger than or equal to one for individuals who have high weekly working hours. And indeed their median value of the term takes the value 1.21.

Figure 20 shows an exemplary graph for the case of desired working time increases. The individual is not at an optimum initially (Point A), because he/she only works 27 hours per month but would like to work 72 hours per month. In order to increase the working time, he/she would accept a lower wage rate but not a lower monthly net income. Therefore, point X is an exemplary point for a required wage compensation $0 < wc_i^i < 1$, which is required by approximately 60% of the participants who desire a working time increase. A bit less than one third of the participants who desire a working time increase require a wage compensation $wc_i^i > 1$. This would be reflected by points above the upper grey dot which represents a wage compensation $wc_i^i = 1$. A required wage compensation $wc_i^i = 0$ would be shown by the grey dot below point X.

For the case of desired wage compensations $0 < wc_i^i < 1$ the theoretical approach chosen for the graph would always imply a comparably large positive substitution effect and an income effect close to zero. Indeed, for desired working time increases the group which requires a wage compensation $0 < wc_i^i < 1$ shows an average substitution of 0.32 and a median substitution effect of 0.15. However, the average income effect takes the value 0.05 and is thus small and positive. But when looking at the median, the income effect takes the expected small and negative value -0.06. When taking the median as reference value, these findings are in line with what would be expected from the illustration in Figure 20.

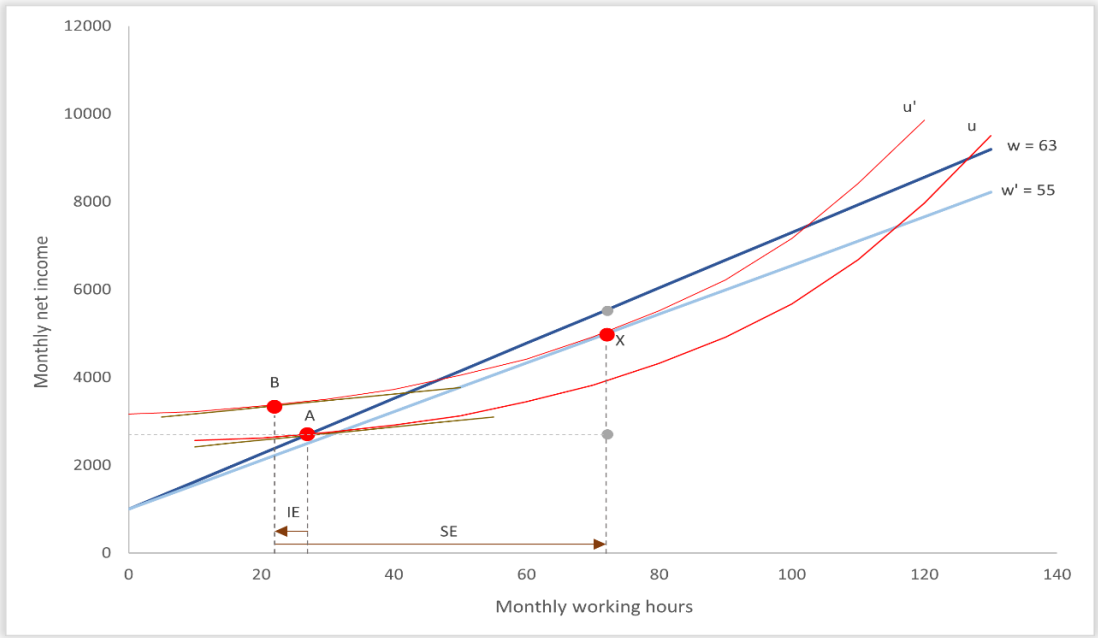

Figure 20 – Working time increase: Wage compensation and substitution and income effect

In general, for the participants who desire a working time increase I find an average income effect of -0.02 and a median income effect of -0.06. The average substitution effect is 0.4 and the median substitution effect is 0.08.

The values of the two effects show that the true location of point B in Figure 20 could be slightly left to point A or slightly right to point A. In this case the size of the income effect should be reduced by the multiplication of the income elasticity with the mechanical effect wH^*/Y_0. This is because for individuals who have low weekly working hours it is more likely for the non-labour income to exceed the labour income. And indeed their median value of the term takes the value 0.81.

The uncompensated wage elasticity can be derived from equations (5) and (6) and is defined as the percentage reaction in labour supply to a percentage change in the wage rate:

$$\epsilon^M = \frac{dH^*/H^*}{dw/w} \tag{10}$$

When drawing a connection between the uncompensated wage elasticity and the required wage compensation, according to neoclassical theory the uncompensated wage elasticity should be negative in the range of working time reductions whenever the required wage compensation is larger than zero (Figure 21, red area on the top left). In this case a positive percentage change in the wage rate comes with a negative percentage change in labour supply. For this to happen, the expected positive substitution effect would have to be of a smaller magnitude than the negative income effect.

When the required wage compensation in the range of working time reductions is smaller than zero, a negative percentage change in the wage rate comes with a negative change in labour supply, inducing the uncompensated wage elasticity to be positive (Figure 21, green area on the bottom left). The expected positive substitution effect would now have to be accompanied by a positive income effect or a negative income effect of a smaller magnitude than the substitution effect.

In the range of working time increases the uncompensated wage elasticity would be negative for required wage compensations smaller than one, because a negative percentage change in the wage rate would lead to a positive percentage change in labour supply (Figure 21, red area on the bottom right). The negative uncompensated wage elasticity would consist of an expected positive substitution effect and a negative income effect which is of a larger magnitude.

When the required wage compensation is larger than one, a positive percentage change in the wage rate causes a positive percentage change in labour supply, indicating a positive uncompensated wage elasticity (Figure 21, green area on the top right). Therefore, the expected positive substitution effect would have to be accompanied by either a positive income effect or a negative income effect of a smaller magnitude.

Figure 21 – Relation between uncompensated wage elasticity and required wage compensation

Along the line of the wage rate the individuals would receive no wage compensation, since the monthly net income and the monthly working hours decrease or increase by the same percentage. Along this line the uncompensated wage elasticity is not defined, since the wage rate does not change, and one would thus have to divide by zero.

When comparing the theoretical framework to the obtained average and median values in my sample, I find that independent of the required wage compensation, the average and median values for the uncompensated wage elasticity are negative in the range of working time reductions and positive in the range of working time increases.

Again, a possible explanation is that the computed required wage compensation is constructed using desired working hours and non-optimal starting points, while the uncompensated wage elasticity is a construct which relies on both an optimal starting point and an optimal ending point. Another reason might be that for the computation of the uncompensated wage elasticity the individuals are not explicitly asked how they would react in terms of working time to a certain change in the wage rate. Instead, the inverse logic applies: for the computation of the substitution effect they are asked what change in the wage rate they would require as a reaction to a given change in their labour supply. Additionally, the computation relies on two separate calculations of the substitution and the income effect which are both based on hypothetical questions.

However, when the required wage compensations implied by the individual's indicated required incomes as answers to proposed working hours are investigated, the theoretical framework holds at least for increases of the wage rate. Individuals who have a negative uncompensated wage elasticity and thus would reduce their working time as a result of a wage increase should show an average wage compensation $\overline{wc}^r > 0$. And indeed an average value $\overline{wc}^r > 1$ is obtained for this group. And as expected, individuals who have a positive uncompensated wage elasticity and thus would increase their working time as a result of a wage increase show an average wage compensation $\overline{wc}^i > 1$.

A perfect connection between the required wage compensation and the uncompensated wage elasticity can probably only be made in theory, since the required wage compensation usually changes for every combination of working hours and income, while the uncompensated wage elasticity is based on several such combinations and recognises validity over a broader range of working hours and incomes.

6. Discussion

This section provides an overview of the most important findings and describes what they imply in relation to the introduced theoretical models. Additionally, the practical relevance of the findings as well as their limitations are presented. And finally, future prospects are provided, including research approaches that were not investigated in this paper but would deliver important additional results.

This paper has shown that a vast majority of 72.2% of Austrian workers desire to change their working time. From this finding one can infer that for the use of theoretical models of labour-leisure choice, it is crucial not to assume that individuals are usually at an optimum initially. This becomes obvious in chapter 5.5. where I show that the obtained estimates for labour supply elasticities are partly different

from what would be implied by the theoretical framework used in equations (5) to (8), which relies on optimal starting points. Most of the individuals who desire a working time change would like to reduce their working time. It is a positive sign for both labour unions and supporters of the degrowth movement that a total of 60.6% of the workers would most likely support working time reductions. Labour unions can thus be sure that indeed they are representing most of the employees when they demand a reduction of the working time. And degrowth economists and sociologists are confirmed that most of the workers are willing to support their transformation of the labour market at least with regard to the working time. However, the average desired working time is 33.15 hours per week and therefore exceeds the weekly working times of 20 to 30 hours often promoted by supporters of the degrowth movement (Paech, 2012; Stratmann-Mertens, 2011). But depending on whether one takes the bivariate or the multivariate regression model for the statistically highly significant influence of the current working time on the desired working time change, the model predicts that individuals require working time reductions once their weekly working time exceeds 28 hours or 20 hours, respectively. Finally, this paper shows that the choice of a statutory working week of 40 hours indeed is not optimal, since the particular group of individuals who work 40 hours per week desire a weekly working time of 33.8 hours on average.

The second problem investigated in this paper was the required wage compensation of Austrian workers, a crucial information for the implementation of models for working time reductions proposed by labour unions. The paper showed that 70% of the workers who desire working time reductions are willing to decrease their working time without receiving a full wage compensation. However, most of the workers require smaller percentage changes in their monthly net income than percentage changes in their working time for working time reductions. The median accepted loss of income amounts to 28% of the percentage desired working time reduction. When only investigating the group of workers who require *some* wage compensation, the values of the required wage compensation between $wc_i^r > 0$ and $wc_i^r < 1$ are normally distributed with most of the individuals requiring a wage compensation $0.33 < wc_i^r \leq 0.66$. A total of 38.4% of the individuals who desire working time decreases would accept a wage compensation $wc_i^r \leq 0.5$, meaning that they would accept a percentage income decrease of exactly or less than half the magnitude of their percentage working time decrease. All these individuals would quite certainly be in accordance with the working time models proposed by labour unions and the party SPÖ. This is because the model proposed by the labour union GPA suggests a 20% working time decrease together with a 10% income decrease, which equals a wage compensation $wc_i^r = 0.5$. The SPÖ suggests an even higher wage compensation since a working time decrease of 20% is accompanied by a 5.1% decrease in monthly net income, which equals a wage compensation $wc_i^r = 0.745$. Approximately 60.9% of the individuals would accept a percentage income decrease which is larger than one fourth of the magnitude of the percentage working time decrease. When looking closer at the group of individuals who desire working time decreases larger than 20%, an even larger share of 67.6% would accept a percentage income decrease which is larger than one fourth of the

magnitude of the percentage working time decrease. Even though one has to bear in mind that the participants were asked about their desired working time reduction and not proposed a working time model, the results suggest that a majority of individuals who would like to reduce their working time, would not oppose the model proposed by the SPÖ.

An important finding in this context is that workers with high incomes are rather willing to accept larger income losses than workers with low incomes. For the top 25% of the income distribution in my sample I find a predicted required wage compensation $wc_i^r = 0.5$, while for the bottom 25% I find a predicted required wage compensation $wc_i^r = 0.627$. Furthermore, individuals with high household incomes are predicted to be willing to accept higher income losses when decreasing their working time. In the development of working time models one could consider these facts in order to distribute the financial burden among individuals according to their labour and non-labour incomes. The findings also support the idea of degrowth economists such as Passadakis and Schmelzer (2011), who suggest working time reductions with full wage compensations only for low-income groups.

Due to the small number of individuals who desire working time increases, reliable statements about this group are difficult to make. But if the data were to be seen as reliable, surprisingly two thirds of these individuals would accept a lower wage rate than their initial one. However, this does not mean that they would accept a decrease in their monthly net income. Out of the individuals who require at least a full wage compensation, i.e. $wc_i^i \geq 1$, slightly more than half are part-time workers. Additionally, individuals who consider themselves the main earners in their household are rather willing to increase their working time at lower wage rates.

This paper confirms the assumption of the neoclassical model of labour-leisure choice that the individuals' median indifference curves between working time and leisure time are convex both in levels and in changes. The paper also showed that an additional hour of work has got a net worth of 13.76 euros to the individuals. This value indicates that working time increases should at least be compensated with an hourly wage of 13.76 euros for the average individual to be happy with the working time increase.

The final problem analysed in this paper was the uncompensated wage elasticity and its decomposition in a substitution effect and an income effect. As has been shown in chapter 2.5., empirically labour supply elasticities are found to be very small. These findings were supported by the estimates obtained in this paper. In a first step, the substitution elasticity and the income elasticity were computed separately. With a value between 0.158 and 0.17 the substitution elasticity is found to be small and positive. The substitution elasticity defines the percentage change in working hours as a reaction to a one-percent change in the wage rate, holding the individual's utility constant. In other words, on average an individual who works 40 hours a week at an hourly wage of 20 euros would be as happy with an hourly wage of 22 euros (10% increase) and a weekly working time of 40.63 to 40.68 hours (1.58% to

1.7% increase). These values seem plausible since the substitution elasticity describes the individual's reaction to an increase in the opportunity costs for leisure as the wage rate increases. However, individuals can hardly be obligated to hold their utility constant when deciding about their working time change as a reaction to a change in the wage rate. Therefore, for the total reaction to a change in a wage rate the income elasticity is used as a second component. The income elasticity defines the percentage change in working hours as a reaction a one-percent change in non-labour income. Hence, it reflects the idea that following an increase in the wage rate, the same amount of consumption can be afforded with a reduced working time. The estimate for the income elasticity takes a value between -0.131 and -0.134, indicating that a one-percent increase in non-labour income would be followed by a decrease in working time by -0.131% to -0.134%. That is, an individual who works 40 hours per week and whose non-labour income amounts to 1000 euros would decide to only work 39.46 to 39.48 hours per week (1.31% to 1.34% decrease) if non-labour income increased to 1100 euros (10% increase). The findings that the magnitude of the negative income elasticity is very small and that only 8% of the individuals stated they would quit work after winning a lottery can be taken as a good sign for degrowth economists who intend to combine working time reductions with an unconditional basic income (e.g. Spangenberg, 2014). Considering that the median proposed monthly lottery win of 3500 euros is significantly higher than the suggested unconditional basic incomes of approximately 1000 euros, the number of individuals who would quit work or decrease their working times might even be smaller.

Even though the substitution elasticity is of a larger magnitude than the income elasticity, this does not hold for the comparison between substitution effect and income effect. This is because the ratio of labour income to non-labour income enters the computation of the income effect. Using all available data for the computation of the uncompensated wage elasticity, the obtained estimate for the income effect takes the value -0.257 and is thus of a larger magnitude than the value 0.16 which is obtained for the substitution effect. The uncompensated wage elasticity is the individual's percentage reaction in labour supply to a one-percent increase in the wage rate. It embeds both the substitution and the income effect so that the individual is not obligated to hold utility constant. This paper finds an uncompensated wage elasticity of -0.096, indicating that on average a one-percent increase in the wage rate would lead to a 0.096% decrease in the working time. This value shows that labour supply is very inelastic. The great variation in the estimates found in previous studies makes it difficult to evaluate the reliability of the estimate obtained in this paper. But independent of the exact magnitude of the estimate for the uncompensated wage elasticity, most papers usually find very small mean uncompensated wage elasticities, both positive and negative. With regard to labour market policies, one can therefore conclude that changes in the wage rate would not lead to noteworthy changes in labour supply. Changes in the net wage rate might result from increases in income tax rates. For politicians it is therefore important to understand that an increase in the income tax rate (e.g. for distribution purposes) would not threaten the operation of the labour market. For employers it is important to understand that neither increases nor

decreases in the wage rates of their employees would lead to noteworthy changes in their labour supply, provided that employees are free in their decision about labour supply. But both politicians and employers need to consider further factors that may influence the individuals' decisions about labour supply. Such factors could be the development of prices in the country or the migration to other jobs or countries.

The mean elasticities estimated in the literature are usually slightly positive due to the high estimated elasticities for women. While this paper could not find a statistically significant influence of the individual's gender on the obtained uncompensated wage elasticity, on average the female uncompensated wage elasticity indeed is larger than the male uncompensated wage elasticity. However, the female average value of 0.057 is not large enough to lift the overall average uncompensated wage elasticity above zero. The comparably large negative male mean value of -0.249 induces it to take a small negative value. The obtained estimates suggest that women would hardly react at all to a one-percent increase in the wage rate since on average their labour supply would increase by 0.057%. On the other hand, men would react with a 0.249% decrease to a one-percent increase in the wage rate. Possible reasons why men prefer to use wage increases for working time decreases could be that not only their average weekly working hours are higher than those of women but also their average monthly net income are higher (2579 euros for men and 1926 euros for women). Approximately 91.6% of the men work full-time, while only 70% of the women work full-time. Additionally, 84.8% of the men consider themselves the main earners of the household, while this applies to only 60.9% of the women. Therefore, more men than women might think that they do not rely on somebody else's income and can thus freely decide how to handle their own income. But it is crucial to distinguish between partnered individuals and single individuals. For both genders the obtained estimates are smaller for individuals who stated that they have a partner. While partnered women show a mean uncompensated wage elasticity of 0.02, the mean value for single women takes the value 0.221. The mean uncompensated wage elasticity for partnered men is responsible for the overall male uncompensated wage elasticity to be negative. This is because partnered men show a mean of -0.324, while the mean of 0.065 for single men is even slightly positive. Probably the mean values for partnered individuals are smaller than those of single individuals for the same logic that applies to main earners. Single individuals do not receive an additional income through their partner's work. Therefore, they only rely on their own income, which does not allow them as easily to decrease their working time.
Interestingly, neither the individual's age nor the presence of a family seem to influence the estimates for the uncompensated wage elasticity.

The obtained results show that it should not be difficult for labour unions to convince workers of working time reductions that come with full wage compensation, since most workers would even accept a decrease in their income if they could reduce their working time. On the other hand, only few workers

would accept a working time reduction without wage compensation, a condition which would most likely be demanded by employers' associations and the Economic Chamber. This paper has shown that a compromise such as the one suggested by the GPA could be implementable and in the interest of all labour market participants. For labour unions it could be particularly interesting to investigate what desired working times and required wage compensations would look like depending on the individual's employment relationship or affiliation to a collective bargaining agreement.
Regardless of the exact measures taken, all institutions will have to take into consideration two relevant developments which will severely influence the future labour market design. On the one hand, young generations with different ideas of working time and work life in general will join the labour market. And on the other hand, greener and more sustainable economic action is becoming more popular, respected, and required. A potential decrease in industrial production may lead to decreases in the overall working time and to shift in work activities.
Some of the obtained results are subject to limitations which arise due to the sample compilation, lacking background information about the participants understanding of some questions, or the nature of the utilised formulas. These shortcomings will be discussed in the following paragraphs.

One major issue that occurs in surveys related to labour market topics is a sample selection bias. This bias results from the exclusion of unemployed individuals from the study. For the purpose of this study only individuals who have already made the decision to participate in the labour market were asked, because for all of the investigated problems the information about both the initial working hours and the initial monthly net income were indispensable. Usually these individuals have a stronger taste for work (Killingsworth, 1983). Therefore, statements made in this paper do not ensure generality for the Austrian population but are limited to the Austrian working population.

For the interpretation of desired working times and required wage compensations, it could have been important to either provide some background information to the participants or to gain such information. If provided, the participants should have been informed what the new leisure time could be used for and that a change in the working time is considered to take place in the same job under the same conditions. If not provided, one should have asked for the intended use of the new leisure time and potential changes in the job activity that the individual thought of when changing the working time. If this information had been made available, the possibly implausible combinations of desired working times and required monthly net incomes discussed in chapter 4.4.1. (issues one and two) could have been explained or ruled out for certain.

As mentioned in previous chapters already, all results which are solely related to the group of individuals who desire a working time increase can only give a broad idea of what the true results for the Austrian working population would look like. This is due to the small number of participants who desire a

working time increase. However, when the group of individuals who desire a working time increase and the group of individuals who desire a working time reduction were investigated separately, usually only the results for the desired working time reductions were relevant for present labour market policies.

Finally, both the equations for the computation of the substitution and the income effect brought some minor difficulties. The substitution elasticity could not be computed for individuals who required the same wage rate for the segments below and above their starting point. Usually their elasticity of substitution would have been infinite. But since replacing their elasticity estimates with an infinitely high value would have rendered the mean elasticities to be infinitely high, the only reasonable way to handle these individuals was to assess them a value which equals the 99^{th} percentile of the distribution of observed elasticities of substitution. As a result, the obtained mean elasticity of substitution is not completely reliable. For the computation of the income elasticity, all individuals with an indicated non-labour income of zero were assigned an income elasticity of zero. Zero can be a reasonable value, when taking into consideration that an increase in non-labour income from zero to any number can be interpreted as infinite. This "infinite" percentage increase in non-labour income would then induce a comparably infinitesimal percentage change in working hours, which can essentially be interpreted as zero. However, this computation is not very accurate, and the obtained estimates differ from the estimates obtained when the affected 155 observations would be excluded from the computation.

For future work it may be interesting to elaborate the relation between the required wage compensation and labour supply elasticities in more detail. I have shown that a relation exists in theory and that the expected relations hold for most parts, even if one refrains from assuming optimality of the individual's starting point. But I still face some difficulties which could not be investigated further, since a more thorough analysis would have gone beyond the scope of this paper.

7. Conclusion

The purpose of this paper was to investigate the attitudes of Austrian workers towards labour supply and both labour and non-labour income. Therefore, a study was conducted in which the participants first were supposed to indicate their desired working hours together with their required incomes. This way I was not only able to make statements about desired working hours of the Austrian working population, but I could also compute the required wage compensations for the indicated desired working time changes. In a second step the participants were asked to make hypothetical trade-offs between income and leisure. The answers to these hypothetical trade-offs allowed me to compute labour supply elasticities and thus to make statements about their reactions to changes in the wage rate or in their non-labour income.

60.6% of the workers indicated that they would like to reduce their working time while only 12.1% stated that they would desire a working time increase. This paper therefore shows that the current working time is not optimal for a vast majority of Austrian workers. Given that the average desired working time for those who work the statutory 40 hours per week is 33.8 hours, a new design of statutory working hours may be in the worker's interest. Overall, the average desired weekly working time obtained for the sample is 33.15 hours.

Due to the low number of individuals who desire a working time increase, only the statements about the group of individuals who desire a working time reduction are considered representative. Inside this group a total of approximately 70% would accept a decrease in their monthly net income in order to reduce their working time. At the same time 93% out of these 70% would require a wage increase and therefore *some* wage compensation. For the whole group of individuals who desire a working time reduction, the median accepted loss of income amounts to 28% of the percentage desired working time reduction. Additionally, workers with high incomes are rather willing to accept larger income losses than workers with low incomes.

This paper finds that the negative average income effect of -0.257 dominates the positive average substitution effect of 0.16, resulting in an average uncompensated wage elasticity of -0.096. However, for 28.6% of the participants the uncompensated wage elasticity takes a positive value. In general, reactions to changes in the wage rate seem to be minimal. The average reaction of men with an uncompensated wage elasticity of -0.249 is not only stronger than the reaction of women, but unlike the positive female value of 0.057 it is also negative. Interestingly, also the reactions to a lottery win, which would amount to the individual's household income and would be disbursed each month, are not very strong. Only 8% of the participants state that they would quit their work, while 79% would reduce their working time and approximately 13% would keep or increase their working time.

On the one hand, this paper showed that political measures which are directed at working time reductions would be supported by a large majority of Austrian workers. This still holds if these working time reductions come with reductions in monthly net incomes. On the other hand, disregarding other influences on the individuals' decisions about labour supply, the small labour supply elasticities show that both tax increases by political actors and the change of wages by employers would not lead to remarkable changes in the worker's labour supply.

References

25.611 Arbeitnehmer mehr in Kurzarbeit als in der Vorwoche. (2021). https://www.derstandard.at/story/2000123414512/25-611-arbeitnehmer-mehr-in-kurzarbeit-als-in-der-vorwoche

4-Tage-Woche in Österreich? - Aktuelle Studie bestätigt Vorteile der Arbeitszeitverkürzung für Belegschaft und Unternehmer. (2019). https://www.oegb.at/cms/S06/S06_500.0.a/1342606970025/4-tage-woche-in-oesterreich?d=Touch

Ahn, T. (2016). Reduction of working time: Does it lead to a healthy lifestyle? *Health Economics*, *25*(8), 969–983.

Arellano, M., & Meghir, C. (1992). Female Labour Supply and On-the-Job Search: An Empirical Model Estimated Using Complementary Data Sets. *The Review of Economic Studies*, *59*(3), 537–557.

Bachmayr-Heyda, A. (2020, August 6). Wenn Vier mitmachen, kriegt ein Fünfter einen Job – 90 Prozent des Gehalts für 4-Tage-Woche. *Kontrast.At*. https://kontrast.at/90-fuer-80-4-tage-woche/

Ballard, C. L., Shoven, J. B., & Whalley, J. (1985). General Equilibrium Computations of the Marginal Welfare Costs of Taxes in the United States. *The American Economic Review*, *75*(1), 128–138.

Bargain, O., Orsini, K., & Peichl, A. (2014). Comparing Labor Supply Elasticities in Europe and the United States. *Journal of Human Resources*, *49*(3), 723–838.

Bargain, O., & Peichl, A. (2016). Own-wage labor supply elasticities: variation across time and estimation methods. *IZA Journal of Labor Economics*, *5*(1), 1–31.

Başlevent, C., & Kirmanoğlu, H. (2014). No Title. *Social Indicators Research*, *118*(1), 33–43.

Bessho, S., & Hayashi, M. (2005). Economic studies of taxation in Japan: The case of personal income taxes. *Journal of Asian Economics*, *16*(6), 956–972.

Bloemen, H. G. (2008). Job Search, Hours Restrictions, and Desired Hours of Work. *Journal of Labor Economics*, *26*(1), 137–179.

Blundell, R., & MaCurdy, T. (1999). Labor Supply: A Review of Alternative Approaches. *Handbook of Labor Economics*, *3*, 1559–1695.

Blundell, R., & Walker, I. (1982). Modelling the Joint Determination of Household Labour Supplies and Commodity Demands. *The Economic Journal*, *92*(366), 351–364.

Blundell, R., & Walker, I. (1983). Limited dependent variables in demand analysis: an application to modelling family labour supply and commodity demand behaviour. *I26*.

Borjas, G. J. (2016). *Labor economics* (Seventh ed). McGraw-Hill Education.

Bosch, G. (2002). Working time reductions, employment consequences and lessons from Europe. In *Working Time: international trends, theory and policy perspectives*. London and New York: Routledge.

Bosch, G., & Lehndorff, S. (2001). Working-time reduction and employment: experiences in Europe and economic policy recommendations. *Cambridge Journal of Economics*, *25*(2), 209–243.

Brown, C. V., Levin, E. J., Rosa, P. J., Ruffell, P. J., & Ulph, D. T. (1983). *Direct taxation and short run labour supply*. H. M. Treasury Project, Working Papers Nos. 1 to 12, Department of Economics, University of Stirling.

Burda, M. C. (2013). *Macroeconomics : a European text* (6. ed..). Oxford Univ. Press.

Buschoff, K. S., & Rückert, J. (1998). *Teilzeitbeschäftigte in Europa: Arbeitsbedingungen, Familienkontext, Motive und subjektive Bewertungen* (Issue FS III 98-404). Wissenschaftszentrum Berlin für Sozialforschung (WZB).

Claesson, A. (2020). Finland Is Rallying Around a Six-Hour Workday — And So Should We. *Jacobin*. https://jacobinmag.com/2020/09/finland-six-hour-workday-working-hours-covid

Collewet, M., Borghans, L., & Seegers, P. (2018). *Measuring income-leisure preferences using hypothetical questions*.

Contensou, F., & Vranceanu, R. (2000). *Working time. Theory and Policy Implications*. Edward Elgar, Cheltenham, UK.

Douglas, P. H. (1934). *Theory of wages*. MacMillan Company, New York.

dpa. (2020). *DIW-Chef: Vier-Tage-Woche bei Verzicht auf vollen Lohnausgleich*. https://www.wiwo.de/unternehmen/marcel-fratzscher-diw-chef-vier-tage-woche-bei-verzicht-auf-vollen-lohnausgleich/26103610.html

Elder, T., Haider, S. J., & Orr, C. (2020). *The Evolution of the Wage Elasticity of Labor Supply over Time*.

Ennser-Jedenastik, L., & Windisch, F. (2020). *Kürzer arbeiten auch nach der Krise?* https://viecer.univie.ac.at/corona-blog/corona-blog-beitraege/blog71/

Evers, M., Mooij, R., & Vuuren, D. (2008). The wage elasticity of labour supply: A synthesis of empirical estimates. *Economist*, *156*(1), 25–43.

Feenstra, R. C., Inklaar, R., & Timmer, M. P. (2015). The Next Generation of the Penn World Table. *American Economic Review*, *105*(10), 3150–3182, availabe for dowload at www.ggdc.net/pw.

Giattino, C., Ortiz-Ospina, E., & Roser, M. (2013). Working Hours. *Published Online at OurWorldinData.Org*.

GPA-djp. (2020). *Aktuelle Umfrage: Zwei Drittel für Arbeitszeitmodell „90 für 80“*.

Graafland, J., Mooij, R., Nibbelink, A., & Nieuwenhuis, A. (2001). MIMICing tax policies and the labour market. In *International Marketing Review*.

Howington, J. (2018). *Survey Explores Varying Attitudes of Millennials and Older Workers about Key Workplace Issues*.

Huberman, M., & Minns, C. (2007). The times they are not changin': Days and hours of work in Old and New Worlds, 1870–2000. *Explorations in Economic History*, *44*(4), 538–567.

Jackson, T. (2009). *Prosperity without growth: Economics for a finite planet*. London (Earthscan) 2009.

Jevons, W. S. (1879). *The Theory of Political Economy*. London: Macmillan.

Karlsböck, T. (2020). *Trotz Corona: Jeder Zweite wünscht sich jetzt 30-Stunden-Woche*. https://www.karriere.at/blog/umfrage-30-stunden-woche.html

Kassam, A. (2021). Spain to launch trial of four-day working week. *The Guardian: International Edition*. https://libraryguides.vu.edu.au/apa-referencing/7newspapers

Keane, M. P. (2011). Labor supply and taxes: A survey. *Journal of Economic Literature*, *49*(4), 961–1075.

Killingsworth, M. R. (1983). Second-generation studies of static labor supply models: methodology and empirical results. In *Labor Supply* (pp. 130–206). Cambridge University Press.

Kimball, M., & Shapiro, M. (2008). Labor Supply: Are the Income and Substitution Effects Both Large or Both Small? In *National Bureau of Economic Research Working Paper Series* (No. 14208).

Kittel, B., Kritzinger, S., Boomgaarden, H., Prainsack, B., Eberl, J.-M., Kalleitner, F., Lebernegg, N., Partheymüller, J., Plescia, C., Schiestl, D., & Schlogl, L. (2020). *Austrian Corona Panel Project - Welle 12: Fragebogen "Corona-Krise."* https://viecer.univie.ac.at/fileadmin/user_upload/z_viecer/W12_Fragebogen_Corona-Krise_V20200702.pdf

Lackinger, F.-J. (2020). *Die Geschichte der österreichischen Gewerkschaftsbewegung seit 1945*. https://epaper.apa.at/epaper-voegb/issue.act?issueId=687407

Latouche, S. (2015). *Es reicht!* oekom Verlag.

Lee, S., McCann, D., & Messenger, J. C. (2007). *Working time around the world: Trends in working hours, laws and policies in a global comparative perspective*. Routledge.

Lettink, A. (2019). *No, Millennials will NOT be 75% of the Workforce in 2025 (or ever)!* https://www.linkedin.com/pulse/millennials-75-workforce-2025-ever-anita-lettink/

Marshall, A. (1920). *Principles of Economics (Eighth Edition)*. London: Macmillan.

Merz, J. (2002). Time and Economic Well–Being—A Panel Analysis of Desired versus Actual Working Hours. *Review of Income and Wealth*, *48*(3), 317–346.

Mooi, E., & Sarstedt, M. (2011). *A Concise Guide to Market Research : The Process, Data, and Methods Using IBM SPSS Statistics*. Springer-Verlag Berlin Heidelberg.

Paech, N. (2012). *Befreiung vom Überfluss : Auf dem Weg in die Postwachstumsökonomie*. München: oekom Verlag.

Paradisi, M. (2016). *Economics 2450A: Public Economics Section 1-2: Uncompensated and Compensated Elasticities; Static and Dynamic Labor Supply*.

Passadakis, A., & Schmelzer, M. (2011). Investitionskontrolle und Finanzmarktregulierung in einer Postwachstumsökonomie. In *Ausgewachsen. Ökologische Gerechtigkeit, Soziale Rechte. Gutes Leben, Hamburg*.

Paul, K. (2019, November 4). Microsoft Japan tested a four-day work week and productivity jumped by 40%. *The Guardian: International Edition*. https://www.theguardian.com/technology/2019/nov/04/microsoft-japan-four-day-work-week-productivity

Pencavel, J. (1986). Labor supply of men: A survey. *Handbook of Labor Economics*, *1*, 3–102.

Pencavel, J. (2002). A Cohort Analysis of the Association between Work Hours and Wages among Men. *The Journal of Human Resources*, *37*(2), 251–274.

Priewe, J. (1984). *Zur Kritik konkurrierender Arbeitsmarkt- und Beschäftigungstheorien und ihrer politischen Implikationen*. Frankfurt u.a.

Reuter, N. (2000). *Ökonomik der" Langen Frist": zur Evolution der Wachstumsgrundlagen in Industriegesellschaften*. Metropolis-Verlag.

Schiemann, C., & Wilmsen, F. (2017). *Umsetzungsmöglichkeiten postwachstumsökonomischer Suffizienz- und Subsistenzansätze in der urbanen Praxis?* (Issues 1–2017). Beiträge zur Wirtschaftsgeographie und Regionalentwicklung.

Sensible Fragen - Wie man die Antwortbereitschaft von Befragten erhöht. (n.d.). https://www.intervista.ch/sensible-fragen

Sesselmeier, W., & Blauermel, G. (1998). *Arbeitsmarkttheorien : ein Überblick*. Heidelberg: Physica-Verl.

Spangenberg, J. H. (2014). Institutional change for strong sustainable consumption: sustainable consumption and the degrowth economy. *Sustainability: Science, Practice and Policy*, *10*(1), 62–77.

Spiegelaere, S. de, & Piasna, A. (2017). *The why and how of working time reduction*. European Trade Union Institute.

Splendid Research. (2018). *Das bedingunslose Grundeinkommen. Eine repräsentativen Umfrage unter 1.024 Deutschen zu Ihrer Meinung zum bedingungslosen Grundeinkommen*. Hamburg: Splendid Research.

Spurgeon, A. (2003). Working time: Its impact on safety and health. In *Working time: Its impact on safety and health*. ILO and Korean Occupational Safety and Health Research Institute.

Statista. (2020). *Erwerbspersonen in Österreich bis 2019 Veröffentlicht von Martin Mohr, 11.11.2020 Im Jahr 2019 gab es in Österreich durchschnittlich rund 4,6 Millionen Erwerbspersonen. Damit erreichte die Erwerbsbevölkerung einen neuen Höchststand, nachdem sie schon in d*. https://de.statista.com/statistik/daten/studie/697366/umfrage/erwerbspersonen-in-oesterreich/#professional

Statistik Austria. (2020a). *Ergebnisse im Überblick: Nettomonatseinkommen unselbständig Erwerbstätiger*. https://www.statistik.at/web_de/statistiken/menschen_und_gesellschaft/soziales/personen-einkommen/nettomonatseinkommen/index.html

Statistik Austria. (2020b). *Erwerbstätige nach Alter und Geschlecht seit 1994*. https://www.statistik.at/web_de/statistiken/menschen_und_gesellschaft/arbeitsmarkt/erwerbstaetige/index.html

Stratmann-Mertens, E. (2011). Übergang zu einer Gleichgewichtsökonomie. In *Ausgewachsen. Ökologische Gerechtigkeit, Soziale Rechte. Gutes Leben, Hamburg*.

Stuth, R. (2019). *Ergebnisse der ver.di Arbeitszeitbefragung im öffentlichen Dienst*. https://www.verdi.de/++file++5da727552193fb09e194d185/download/ver.di_Ergebnisbericht_AZ.pdf

Winroth, C. (2017). 6-Hour Working Day: the Swedish Story. *EuroCité*. https://eurocite.eu/wp-content/uploads/2017/04/Winroth-6-hour-working-day-Sweden.pdf

Wirl, W., & Pfefferle, R. (2018). *Der Einfluss ausgewählter Faktoren auf die Einstellung der ÖsterreicherInnen zu einem bedingungslosen Grundeinkommen*.

Wolter, U. (2018). *Wer mehr verdient, arbeitet auch mehr*. https://www.personalwirtschaft.de/der-job-hr/arbeitswelt/artikel/die-meisten-ueberstunden-in-deutschland-machen-die-chefs.html

Zerbes, J. (2020, June 26). 95 % Gehalt für 1 Tag weniger Arbeit: SPÖ will freiwillige 4-Tage-Woche. *Kontrast.At*. https://kontrast.at/95-gehalt-fuer-1-tag-weniger-arbeit-spoe-will-freiwillige-4-tage-woche/

Zinn, K. G. (2014). Vom Industriekapitalismus zum Neofeudalismus. *Überlegungen Zu Einer Zukunft Auslaufenden Wirtschaftswachstums. Jena: Manuskript*.

Appendix A. Abstract (English)

This Master's thesis examines the preferences of the Austrian working population with regard to working hours and wage compensation. In view of current discussions about the 4-day week and a resource-efficient economy, information about these preferences is highly relevant for the future design of labour markets. In this context, the desired working hours and the wage compensation required for the hypothetical change in working hours were researched with the help of a survey. The required wage compensation, on which only little research has been done so far, can be represented as a numerical value by using a formula developed for this work. A second part of the survey helps to determine labour supply elasticities by formulating hypothetical questions. The results show that more than 60 percent of the Austrian working population would like to see a reduction in working hours. Of this group, in turn, a large majority is willing to give up parts of their income in order to decrease their working time accordingly. The accepted percentage loss of income amounts to a median of 28 percent of the percentage desired reduction in working hours. The examination of labour supply elasticities show that on average the negative income effect dominates the positive substitution effect, so that the average uncompensated wage elasticity is -0.096.

Appendix B. Abstract (German)

Die vorliegende Masterarbeit untersucht die Präferenzen der österreichischen Erwerbstätigen bezüglich Arbeitszeit und Lohnausgleich. Angesichts aktueller Diskussionen über die 4-Tage Woche und ressourcenschonendem Wirtschaft ist die Auskunft über diese Präferenzen ist von hoher Relevanz für die zukünftige Gestaltung von Arbeitsmärkten. In diesem Zusammenhang wurde einerseits mithilfe einer Umfrage die gewünschte Arbeitszeit sowie der für die hypothetische Veränderung der Arbeitszeit geforderte Lohnausgleich erforscht. Letzterer ist bislang sehr unerforscht und kann durch die Verwendung einer für diese Arbeit entwickelten Formel als Zahlenwert dargestellt werden. Ein zweiter Teil der Umfrage hilft durch die Formulierung hypothetischer Fragen bei der Ermittlung der Arbeitsangebotselastizitäten. Die Ergebnisse zeigen, dass sich mehr als 60 Prozent der österreichischen Erwerbstätigen eine Arbeitszeitreduzierung wünschen. Von dieser Gruppe ist wiederum eine große Mehrheit dazu bereit auf Teile ihres Einkommens zu verzichten, um die Arbeitszeit entsprechend zu reduzieren. Der akzeptierte prozentuelle Einkommensverlust beträgt im Median 28 Prozent des Prozentsatzes der gewünschten Arbeitszeitverkürzung. Die Untersuchungen zur Arbeitsangebotselastizität zeigen, dass im Durchschnitt der negative Einkommenseffekt den positiven Substitutionseffekt dominiert, sodass die durchschnittliche Arbeitsangebotselastizität -0.096 beträgt.

Appendix C. German full version of the survey

Survey for a fictional participant who has a labour income of 1000€ per month, a non-labour income of 0€ per month and thus a household income of 1000€ per month. The fictional participant works 30 hours per week and desires a working time reduction of 10 hours.

Welches Geschlecht haben Sie?

- ○ Weiblich
- ○ Männlich
- ○ Divers

Wie alt sind Sie?

Alter: ____

Wo wohnen Sie?

- ○ Wien
- ○ Niederösterreich
- ○ Burgenland
- ○ Steiermark
- ○ Kärnten
- ○ Oberösterreich
- ○ Salzburg
- ○ Tirol
- ○ Vorarlberg

Was ist der höchste Schul- oder Bildungsabschluss, den Sie erreicht haben?

- ○ Pflichtschule
- ○ Lehre, BMS
- ○ AHS, BHS, Kolleg
- ○ Bachelor
- ○ Magister, Master, Diplomingenieur, Fachhochschule
- ○ Doktor, PhD

Sind Sie der Hauptverdiener/die Hauptverdienerin in Ihrem Haushalt?

- ○ Ja
- ○ Nein

Bitte wählen Sie alle Personen aus, mit denen Sie gemeinsam im Haushalt leben. Leben Sie aktuell in Ihrem Haushalt ...?

- ☐ ...mit Ehepartner/in oder mit Lebensgefährten/in zusammen
- ☐ ...mit Kindern 0-2 Jahre
- ☐ ...mit Kindern 3-5 Jahre
- ☐ ...mit Kindern 6-14 Jahre
- ☐ ...mit Kindern älter als 14 Jahre
- ☐ Mit keinem der genannten

Welche der folgenden Aspekte treffen auf Ihre derzeitige berufliche Situation zu? Bitte wählen Sie alles Zutreffende aus.

- [ ] Ich bin im Home-Office
- [ ] Ich bin im Abbau Zeitausgleich und Urlaub
- [ ] Ich habe eine Stundenaufstockung
- [ ] Ich habe Kurzarbeit
- [ ] Keine der genannten Aspekte

Arbeiten Sie Vollzeit oder Teilzeit?

- ○ Vollzeit
- ○ Teilzeit

Im Rahmen eines Projekts für wissenschaftliche Zwecke möchten wir die Einkommensverteilung in der Bevölkerung abschätzen. Uns ist bewusst, dass es sich bei diesem Thema um eine sehr private Angabe handelt. Ihre Angaben sind jedoch sehr wichtig, daher bitten wir Sie, diese Frage wahrheitsgetreu zu beantworten. Wir möchten Sie darauf hinweisen, dass Ihre Angaben anonym ausgewertet werden und keine Rückschlüsse auf Ihre Person möglich sind.

Wie hoch ist Ihr persönliches monatliches Nettoeinkommen derzeit? Bitte rechnen Sie Überstunden mit ein, nicht aber den 13./14. Bezug.

Nettoeinkommen: _____ €

Wie viel Geld steht Ihrem Haushalt derzeit monatlich netto zur Verfügung? Wenn Sie es nicht genau wissen, genügt Ihre beste Schätzung.

Zum monatlichen Netto-Haushaltseinkommen zählen neben Ihrem Einkommen außerdem Kapitalerträge wie Zinszahlungen oder Dividenden, Einkommen des Ehepartners, staatliche Transfers, Erträge aus Anlagen, Erträge aus Vermietung und Verpachtung.

Monatliches Netto-Haushaltseinkommen: _____ €

Wie viele Stunden (inklusive Überstunden) arbeiten Sie in Ihrer Haupttätigkeit jetzt pro Woche? Wenn Sie es nicht genau wissen, genügt Ihre beste Schätzung.

_____ Stunden pro Woche

Wenn Sie frei wählen könnten, wie viele Stunden (inklusive Überstunden) würden Sie gerne in Ihrer Haupttätigkeit pro Woche arbeiten?

_____ Stunden pro Woche

Sie haben angegeben, dass Sie 1000 Euro netto im Monat verdienen und gerne 10 Stunden weniger in Ihrer Haupttätigkeit arbeiten würden. Wie hoch müsste Ihr Nettoeinkommen mindestens sein, damit Sie Ihre Arbeitszeit tatsächlich in dem von Ihnen angegebenen Ausmaß reduzieren würden?

Mein monatliches Nettoeinkommen müsste mindestens _____ Euro betragen.

Sie haben zuvor angegeben, dass Sie an Ihrer Hauptarbeitsstelle 30 Stunden pro Woche tatsächlich arbeiten und 1000 Euro netto im Monat verdienen. Die folgenden Fragen beziehen sich auf mögliche Änderungen darin, wie viele Stunden Sie pro Woche tatsächlich arbeiten, und wieviel Sie im Monat netto verdienen. Bitte stellen Sie sich vor, dass diese Änderungen in einer Situation stattfinden, in der vieles andere gleich bleibt, nämlich:

- Sie behalten Ihre heutige Arbeitsstelle und ihr heutiges Arbeitsumfeld.
- Wenn Sie mit einem Partner im gleichen Haushalt leben, dann bleiben seine Wochenstunden und der Verdienst aus seiner Arbeit gleich.
- Sie nehmen keine zusätzliche bezahlte Arbeit an. (Falls Sie derzeit einer bezahlten Nebenerwerbstätigkeit nachgehen, gehen Sie bitte davon aus, dass Ihre Arbeitsstunden und Ihr Verdienst aus dieser Nebentätigkeit gleich bleiben.)
- Der Preis pro Stunde für z.B. Kinderbetreuung oder andere Dienstleistungen, die Sie in Anspruch nehmen, um arbeiten zu können, bleibt gleich.
- Mögliche weitere Einkünfte, die Sie aus anderen Quellen beziehen (z.B. Sozialleistungen, Unterhalt, etc.), bleiben unverändert.

Stellen Sie sich bitte vor, dass sich Ihre tatsächliche Wochenarbeitszeit ändert. Sie müssen **35** Stunden pro Woche arbeiten. Wieviel müssen Sie insgesamt netto im Monat verdienen, damit Sie mit dieser neuen Situation genauso zufrieden sind wie mit Ihrer heutigen Situation?

[ ] Euro netto im Monat

Sie haben zuvor angegeben, dass Sie an Ihrer Hauptarbeitsstelle 30 Stunden pro Woche tatsächlich arbeiten und 1000 Euro netto im Monat verdienen. Die folgenden Fragen beziehen sich auf mögliche Änderungen darin, wie viele Stunden Sie pro Woche tatsächlich arbeiten, und wieviel Sie im Monat netto verdienen. Bitte stellen Sie sich vor, dass diese Änderungen in einer Situation stattfinden, in der vieles andere gleich bleibt, nämlich:

- Sie behalten Ihre heutige Arbeitsstelle und ihr heutiges Arbeitsumfeld.
- Wenn Sie mit einem Partner im gleichen Haushalt leben, dann bleiben seine Wochenstunden und der Verdienst aus seiner Arbeit gleich.
- Sie nehmen keine zusätzliche bezahlte Arbeit an. (Falls Sie derzeit einer bezahlten Nebenerwerbstätigkeit nachgehen, gehen Sie bitte davon aus, dass Ihre Arbeitsstunden und Ihr Verdienst aus dieser Nebentätigkeit gleich bleiben.)
- Der Preis pro Stunde für z.B. Kinderbetreuung oder andere Dienstleistungen, die Sie in Anspruch nehmen, um arbeiten zu können, bleibt gleich.
- Mögliche weitere Einkünfte, die Sie aus anderen Quellen beziehen (z.B. Sozialleistungen, Unterhalt, etc.), bleiben unverändert.

Stellen Sie sich bitte vor, dass sich Ihre tatsächliche Wochenarbeitszeit ändert. Sie müssen **25** Stunden pro Woche arbeiten. Wieviel müssen Sie insgesamt netto im Monat verdienen, damit Sie mit dieser neuen Situation genauso zufrieden sind wie mit Ihrer heutigen Situation?

[ ] Euro netto im Monat

Sie haben zuvor angegeben, dass Sie an Ihrer Hauptarbeitsstelle 30 Stunden pro Woche tatsächlich arbeiten und 1000 Euro netto im Monat verdienen. Die folgenden Fragen beziehen sich auf mögliche Änderungen darin, wie viele Stunden Sie pro Woche tatsächlich arbeiten, und wieviel Sie im Monat netto verdienen. Bitte stellen Sie sich vor, dass diese Änderungen in einer Situation stattfinden, in der vieles andere gleich bleibt, nämlich:

- Sie behalten Ihre heutige Arbeitsstelle und ihr heutiges Arbeitsumfeld.
- Wenn Sie mit einem Partner im gleichen Haushalt leben, dann bleiben seine Wochenstunden und der Verdienst aus seiner Arbeit gleich.
- Sie nehmen keine zusätzliche bezahlte Arbeit an. (Falls Sie derzeit einer bezahlten Nebenerwerbstätigkeit nachgehen, gehen Sie bitte davon aus, dass Ihre Arbeitsstunden und Ihr Verdienst aus dieser Nebentätigkeit gleich bleiben.)
- Der Preis pro Stunde für z.B. Kinderbetreuung oder andere Dienstleistungen, die Sie in Anspruch nehmen, um arbeiten zu können, bleibt gleich.
- Mögliche weitere Einkünfte, die Sie aus anderen Quellen beziehen (z.B. Sozialleistungen, Unterhalt, etc.), bleiben unverändert.

Stellen Sie sich bitte vor, dass sich Ihre tatsächliche Wochenarbeitszeit ändert. Sie müssen **55** Stunden pro Woche arbeiten. Wieviel müssen Sie insgesamt netto im Monat verdienen, damit Sie mit dieser neuen Situation genauso zufrieden sind wie mit Ihrer heutigen Situation?

[ ] Euro netto im Monat

Sie haben zuvor angegeben, dass Sie an Ihrer Hauptarbeitsstelle 30 Stunden pro Woche tatsächlich arbeiten und 1000 Euro netto im Monat verdienen. Die folgenden Fragen beziehen sich auf mögliche Änderungen darin, wie viele Stunden Sie pro Woche tatsächlich arbeiten, und wieviel Sie im Monat netto verdienen. Bitte stellen Sie sich vor, dass diese Änderungen in einer Situation stattfinden, in der vieles andere gleich bleibt, nämlich:

- Sie behalten Ihre heutige Arbeitsstelle und ihr heutiges Arbeitsumfeld.
- Wenn Sie mit einem Partner im gleichen Haushalt leben, dann bleiben seine Wochenstunden und der Verdienst aus seiner Arbeit gleich.
- Sie nehmen keine zusätzliche bezahlte Arbeit an. (Falls Sie derzeit einer bezahlten Nebenerwerbstätigkeit nachgehen, gehen Sie bitte davon aus, dass Ihre Arbeitsstunden und Ihr Verdienst aus dieser Nebentätigkeit gleich bleiben.)
- Der Preis pro Stunde für z.B. Kinderbetreuung oder andere Dienstleistungen, die Sie in Anspruch nehmen, um arbeiten zu können, bleibt gleich.
- Mögliche weitere Einkünfte, die Sie aus anderen Quellen beziehen (z.B. Sozialleistungen, Unterhalt, etc.), bleiben unverändert.

Stellen Sie sich bitte vor, dass sich Ihre tatsächliche Wochenarbeitszeit ändert. Sie müssen **11** Stunden pro Woche arbeiten. Wieviel müssen Sie insgesamt netto im Monat verdienen, damit Sie mit dieser neuen Situation genauso zufrieden sind wie mit Ihrer heutigen Situation?

[ ] Euro netto im Monat

Stellen Sie sich vor, dass Sie im Lotto gewonnen haben, so dass Sie (und Ihr Partner) ab jetzt jeden Monat einen Betrag in Höhe Ihres heutigen monatlichen Haushaltseinkommens (1000 Euro) bekommen werden, so lange Sie (und Ihr Partner) leben. Wenn Sie es sich aussuchen könnten, wie viele Stunden würden Sie dann in der Woche arbeiten?

[ ] Stunden pro Woche