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Maria Ziolkowski, BSc

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Alyssa Schneebaum, PhD

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1 Introduction

“Although represented as genderless, sexless, raceless, ageless, and classless, feminists argue that the [...] homo economicus mask[s] a white, healthy, youthfully middle-aged, middleclass, heterosexual MAN. He is pictured in two principle roles – as an impartial judge or legislator reflecting on principles and deliberating about policies and as a self-interested bargainer and contractor wheeling and dealing in the marketplace. It is no accident that politics and commerce are both domains from which women have historically been excluded. It is no accident either that the philosophers who originated these views of the self typically endorsed this exclusion. Deeming women emotional and unprincipled, these thinkers advocated confining women to the domestic sphere where their vices could be neutralized, even transformed into virtues, in the role of submissive wife and nurturant mother.” (Meyers, 2007) [emphasize in original]

Diana Meyers argues, that the model of the homo oeconomicus, as constructed by neoclassical economics, assigns women to the domestic sphere and men to the economic sphere, where they participate in the labour market, take public positions and take decisions for their families. The segregation she describes is rooted in patriarchal social structures, which give men power over women based on their sex or gender. In the next chapters I deeply analyse the similarities between patriarchy and the homo oeconomicus. Before doing so I trace important feminist schools of thoughts, with the aim to position myself in the field. I conduct my research from an Egalitarian feminism perspective, as this approach is able to display structural imbalances best although its inherent duality leads to generalisations and excludes some groups of people from my analysis.

Discrimination can occur in two forms, direct and indirect. Women are facing direct discrimination if they can not participate in something or are not entitled to something based on their gender. Examples for this are voting rights or direct labour market discrimination (for instance, when a women is not employed based on her gender). Indirect discrimination is more difficult to see, it describes norms or regulations, which do not specifically exclude anyone based on their gender, sexual orientation, race, ethnicity, or other discriminatory factors, but are formulated in such a way that they lead to exclusion or unequal treatment. The norm or regulation is not

central but rather its effect. An example for is a company that does not support any maternity leave. (Stiegler, 2005)

Patriarchal structures and norms lead to the indirect discrimination of women, and gender roles are often mirrored in economics. Although some authors argue that economics has a direct influence on societal norms (Davis, 2011), proving this is not the aim of this thesis. Rather I analyse how patriarchy is mirrored in neoclassical economics by using one of its main models, the homo oeconomicus. I argue that some of its assumptions are essential features of neoclassical economics and my results, therefore can be also applied to the school of thoughts in general.

Economics and Feminist theory are both very wide areas of research. It is necessary to set clear boundaries by formulating and following strict definitions of concepts. In order to provide a structural analysis, I form a temporary group of all *women* and use a dual concept of gender. I use the the dilemma of difference (Scott, 2005) as a concept to enable the pointing to differences between men and women without insisting that they are different from each other. I believe it is useful to first understand and fully assess the different outcomes and realities that stem from the duality in gender before thinking about the right approach to change these realities.

The literature on the critique of neoclassical economics is enormous and many researchers have concluded that it is not adequate and should be rejected in general. Nevertheless, it is still persistent. This thesis serves as a general overview of existing critique, which I develop more by adding insights and conducting an analysis from a Feminist perspective. It is of high importance to see how existing structures are justified.

The main assumptions of the homo oeconomicus are: rationality, exogenous preferences, natural market equilibria and symmetric information. I argue that rationality can be defined is a selfish or neutral way and that neoclassical economics uses the selfish definition. Following, altruistic actions are irrational. Exogenous preferences in combination with methodological individualism, which is one of the criteria I define for neoclassical economics, ban the possibility of interpersonal influences on an individual's well-being. Natural market equilibria justify the unfair distribution of unpaid work within households and finally, symmetric information disadvantages women as they have less access to information and communication technologies (Primo and Khan, 2003), as I show in this work. Based on this I deduct that neoclassical economics is less effective in serving as a model for women than it is for men and is therefore, highly biased.

The next chapter gives an overview about feminist theories and I discuss in detail which schools of thoughts I use for my analysis. Additionally, I briefly sketch feminist epistemologies and the connection between feminist theory and economic science. Next, I start my analy-

sis by defining neoclassical economics (including the homo oeconomicus) and contrasting it to mainstream and heterodox economics and patriarchy, which I understand as a system, which disadvantages women based on their sex, gender and/or gender role and which is supported by institutions such as marriage. Following, I discuss the assumptions of the homo oeconomicus individually and how they mirror patriarchal structures, I also use existing empirical results to support my argumentation in this chapter. Before concluding, I review three heterodox models on the decision-making of individuals. The first one states that rationality must not be understood as selfish behaviour (Sen, 1977), the second incorporates interpersonal comparisons and fairness into the utilities of individuals (Akerlof and Yellen, 1988) and the third one includes identities of individuals as a significant factor for well-being (Akerlof and Kranton, 2000).

2 Methodology

This thesis is based on feminist theories and aims to minimize the existing gap between economics and feminist theory. There are different schools of thoughts in gender studies with different epistemological implications. Although Egalitarian feminism can be (and has been) criticized for several reasons, I will use this approach to analyse the homo oeconomicus. A two dimensional analysis is beneficiary as it is able to uncover the imbalances between men and women from a structural perspective.

The research question of this work is formulated as following: how does the neoclassical homo oeconomicus parallel patriarchal structures? The homo oeconomicus is a basic model of the decision-making mechanism of economic agents in neoclassical economics. This research question is relevant although neoclassical economics can not be seen as mainstream (any more) as individual assumptions of it can be found repeatedly even in the newest research, for instance, agents that are maximizing their utility can be found in a number of macroeconomic models, such as the EAGLE model of the European Central bank (Bokan, Gerali, Gomes, Jacquinot and Pisani, 2016). In addition, the model is still widely taught at universities and provides often the basis of economic knowledge. The assumptions I identify for the homo oeconomicus are: rationality, exogenous preferences, symmetric information and the existence of market equilibria. I explain their meaning in the next chapter and provide a detailed analysis from a feminist perspective of each of them. The model is presented as a basic, neutral and comprehensive framework for the decision-making of individuals. Exactly this is the reason why it is important to understand which values are comprised in it. As it is relatively easy to comprehend from an economical perspective, it enables to focus more on the underlying values that are incorporated in it. Although this model is not realistic, men are still better represented by it than women as I show in my analysis. In addition, this opens the door for further research. The aim of this thesis is to present a tool-kit for analysing economics from a feminist perspective. I draw attention to some biases in the economic science and support my arguments with existing empirical research.

Building on economical and feminist framework, I conduct an analysis of every assumption separately as the critiques of the individual assumptions differ from each other. It is difficult, if not impossible, to formulate a pointed and detailed argument against all of them. Nonetheless, I show that all of them favour men and describe male realities better than female. The assumptions can be divided into two areas. Firstly, rationality and exogenous preferences, which are

premises about individuals, and secondly, market equilibria and symmetric information, which are about societies and the independence of individuals. The premise of rationality is connected to exogenous preferences but the assumptions differ as exogenous preferences must be seen as the prerequisite for rationality. A connection also exists between the existence of natural market equilibria and symmetric information, although not as strong as in the first group. The assumptions are interdependent as market equilibria can only establish themselves naturally if there is at least a minimum degree of symmetric information. Moving forward I will explain the interdependencies and connections between the assumptions deeper and also link them to patriarchal structures.

Below I give a brief overview about feminist theory in general, expand my argumentation for egalitarian feminism and close with a description of feminist epistemologies, that are important for this work.

2.1 The Feminist Approach

Feminist theory serves a number of different purposes. Depending on its definition or circumstances it can be a political, social or academic branch of thinking, a combination of all three of those and even more.

Broadly speaking one can differentiate between the First, Second and Third Waves of feminism, which can be referred to as egalitarian, differential and poststructuralist. Each of them has a different understanding of the main concepts, such as sex or gender, and has different goals. Whereas the first wave of feminism was mainly concerned with voting rights for women, the third wave is trying to break the rigid and dichotomous understanding of sex, gender, sexual orientation and many more by using a postmodern and/or poststructuralistic approaches.

Egalitarian Feminism

Starting in the 1950s Egalitarian Feminism is referred to as First Wave Feminism. Its goal is to overcome the suppressive structures of power in order to increase the standing of real existing women and force equal opportunities for both sexes. The term *woman* is hereby defined as a social construct of men, which is needed for the definition of *man*. Women have been constructed by society as an oppositional object to men, which makes them subjects. If the construct women does not exist then men can not be clearly defined or identified due to the lack of a counterpart (Galster, 2004, 47).

A main representative of Egalitarian feminism is Simone de Beauvoir, whose best-known book *The Second Sex* was first published in 1949. This book serves as a representation of the above mentioned ideology (Simone de Beauvoir, 2000, 28). The author acknowledges that there is a significant difference between men and women based on the difference of primary and secondary sex organs, but she strictly negates that this can serve as a justification for the need of constructing sex and gender based on this. By allowing for the distinction, societies are divided into two groups, which in turn leads to the establishment and enforcement of a social order, where men are superior to women. She explicitly distinguishes between the biological differences and the socialised differences and states that women only become women during their lifetime, therefore the unequal treatment for men and women does not stem from sex (Simone de Beauvoir, 2000). The inequalities observed between men and women are not due to the difference in anatomy but rather emerge from socialization. More importantly, the construction of gender produces hierarchies and should be abolished. The dichotomies and connotations with gender that arose within society can not be found in nature as they have been constructed by humans. Women's attachment to nature, weakness, emotions and altruism is not due to biology but because of society, with its inherent patriarchal structures, raises them to behave in a *womanly* way, namely to display weakness and behave altruistically. Whereas women are objectified and valued less, men are respected as subjects. In Simone de Beauvoir's opinion females do not argue against the described social order but rather accept their object status and are not willing to form a solidarity movement; they seem to be more attached to their class, race, religion, sexual orientation, family, and their husbands than to their gender and this is the reason why bonding among women failed to be successful in the past. Throughout the course of centuries, especially in the times of the industrial revolution, women managed to break out of their assigned place in society and positioned themselves next to men, as the second sex and receive "equality in difference" at the most (Simone de Beauvoir, 2000).

Summarizing, as the name already indicates egalitarian feminists focus on the sameness between men and women. They do acknowledge that there are certain differences but in their opinion this has no influence on the behaviour of human beings. What causes the differences in preferences, decision and behaviour are societal norms and conventions, learned reactional and behavioural patterns that we teach to children and which therefore are reproduced throughout generations.

Egalitarian Feminism, especially Simone de Beauvoir, was broadly criticized. Movements such as *Black Feminism* arose in the United States, which goal was to show up that being a

women can mean different things for different people depending on factors such as race, religion, class (see e.g. Hammonds, 2006; Hooks, 2006; Crenshaw, 1991; Collective, 2006). Although the critics are completely valid, it sometimes makes sense to construct *women* as a unit, as this enables the exposure of hierarchies. After a brief overview of the Second and Third Wave I return to this critique and will analyse its validity for my work based on the *Dilemma of Difference* and *Strategic Essentialism*

Differential Feminism

Differential feminism, also called the Second Wave, has doctrines that conflict with egalitarian feminism. We can identify two branches, the French, with representatives such as Julia Kristeva, Luce Irigaray, and Hélène Cixous and a strong focus on Psychoanalysis, and the American, with Carol Gilligan, of differential feminism. The goal in this school of thoughts is to establish a new understanding of already existent knowledge.

Its representatives formulate a very strong essentialist idea of *femininity* and one of the core points is the difference between men and women. Instead of deconstructing the division between sexes they call for a new value-free social hierarchy with equal subjects. Kristeva (1989) defines femininity as something elusive, which can not be described by our limited language; Cixous (2013) pleads for the introduction of the so called *écriture féminine*, through which only women can write themselves and describe femininity; Irigaray (1980) constructs femininity as the difference between men and women, where the female identity has been derived from men's identity. As soon as the male and female will become totally equal, women can stop defining their own identity based on men and will finally be able to turn away from their object status and become subjects on their own.

Moving on to the American approach I want to emphasize the psychologist, Carol Gilligan. She conducted a study on morality of men and women and thereby constructed a *female moral voice*, which is opposed to *the male voice*. She shows that the moral understanding differentiates between the moral of responsibility and the imperative of moral, which can be observed in women, and the male imperative of moral, which focuses on respecting others and their lives and self-fulfilment (Gilligan, 2006).

The main difference between egalitarian feminism and differential feminism is that the first one sees gender differences as constructed, whereas the second one naturalised them. Both strings do acknowledge that we can observe different outcomes related to differences in gender but see the reason for this in something else.

Poststructuralist Feminism

The youngest school of thoughts beyond these three is poststructuralist feminism, which emerged from postmodern and poststructuralism theories, also referred to as Third Wave Feminism. Postmodern and Poststructuralist sciences arose when modern theories could not explain the complex reality (any more) and are defined apart from totalitarian and one-dimensional explanations. The universality of subjects in being criticized. Former feminist movements have been described as racists and classist and the Third Wave has emerged as a critique of them. It is an answer to more subtle forms of sexism, racism, homophobia and classism (Pinterics, 2001).

In the center of the poststructural theories is the questioning and relativity of existing biological and social knowledge. This is often done by the method of deconstruction¹, which can be seen as opposed to hermeneutic approaches and draws attention to the fact that the meaning of a text lies in what has not been said and is formed through the immanent differences in texts (Villa, 2010, 148). Gender theory mainly uses this to deconstruct gender, and criticizes its binary and implicit heteronormativity², which is responsible for the oppressive structures within societies and requires clear borders between men and women; humans are not able to define themselves but are defined through their sexual desires. Social hierarchies are thus created and differentiated by sexual individualisation based on gender, class and race relations regulated in a heteronormative way (Wagenknecht, 2007, 27).

In contrast to Egalitarian Feminism, not only gender is seen as constructed but also sex (Wetterer, 2010, 126); nature and culture – sex and gender – are equal. Nature can not exist without culture and sex not without gender. The naturalization of sex is questioned by Poststructuralist feminist researchers, in their opinion sex is created in the daily life through two mechanisms, either through phallocentrism, meaning primary genitals, or through the interactive production of sex, where somebody's action makes others presume her primary genitals; the biological difference between men and women is misused for the maintenance of hierarchies within societies.

¹Deconstruction as such has been especially shaped by the French philosopher Jacques Derrida in the late 1960s and refers critically to Structuralism or Psychoanalysis (among others). He generated the word *différance* in 1972, which refers to the French verb *différer* and means differ, different from something or somebody. Through the limitations of our language everything needs to be part of a dichotomy and differ from something else, otherwise we are not able to address it; thus everything which we produce through our language is exhibited to the *différance* – the dependence on the differentiation of something else. Deconstruction tries to disconnect language from the *différance* and give everything a meaning that is determined by itself and independent of the other. Exemplified this means that women and men should not be seen as opposite to each other but rather receive an individual meaning (Derrida, 2016).

²The term heteronormativity relates to heterosexuality as the dominant form of gender relation, which shapes the subjectivity, the lifestyle, the symbolic order, and the organisational structure of society (Wagenknecht, 2007, 17).

Poststructuralist feminists are concerned with the reconstruction of processes which lead to the differentiation between sexes, there is an implicit mimic relationship between sex and gender which has been established as one of the roots of the differentiation (Wetterer, 2010, 126). Researchers concentrate on social processes and structures of power and control that lead to the binary order within societies. The aim is to ultimately deconstruct gender and sex by rejecting the classification of humans in men or women.

A main representative of Poststructuralist feminism is Judith Butler. She defines language, the discourse and the symbolic-discursive order as the place where gender is constructed. She develops the heterosexual matrix, which includes sex, gender, sexual practice and sexual desire. The researcher states, that sex and gender are socially constructed categories and both have to be enforced through performative actions of the individuals; only through a constant repetition and production of the body gender and sex can be produced and become visible for others.

“If the immutable character of sex is contested, perhaps this construct called ‘sex’ is as culturally constructed as gender; indeed, perhaps it was always already gender, with the consequence that the distinction between sex and gender turns out to be no distinction at all” (Butler, 2006, 357) [emphasize in original].

The heterosexual matrix is in equilibrium if sex and gender match, and are contrary to sexual practice and desire, which also match (Butler, 1991).

All three waves of feminist movements are very different, and demand different things. Women nowadays are facing different difficulties than 100 years ago. I believe that is important to understand the ideas and their criticism in order to be able to decide which approach suits the chosen topic best.

2.1.1 The Dilemma of Difference and Strategic Essentialism

The Dilemma of Difference describes a phenomenon, that deals with the inherent impossibility of assuming that women and men are equal and at the same time showing that women are being suppressed by societal conditions as egalitarian feminism does not allow for differentiation based on sex and/or gender.

Joan Scott (2005) displays this problematic setting through the example of the French Parité-movement in the 1980s. This feminist movement demanded a quota for voted political posts in order to reduce the inequality between men and women in politics since “the absence of women in elective office was both symptom and cause of the problem” (Scott, 2005, 51) as such

a representation could not reflect the diversity of the population. The monopolization of power led to the forcing of interests of special groups.

Instead of arguing that women would be the better representatives, the movement requested more diversification and justified this by guaranteeing an overall broader perspective because women and men face different life circumstances and are sensible to different things. A main problem in their opinion was that by that time France constructed abstract individuals, that supposed to be neutral, but actually they were constructed as males. The same holds for the homo oeconomicus; as I show this economic figure is presumable neutral but incorporates typically male characteristics.

To overcome the contradiction in their claims and their demands, paritarists referred to duality instead of difference, which was universal and naturally given, but its meaning was socially and culturally constructed as difference. Duality can therefore reflect differences in a value free manner.

Paritarists did recognize that humans are born as men and women -- a dual construct -- but rejected the view that either of this dual construction had a meaning attached to it.

“They thus posited a distinction between anatomical dualism and sexual difference: the one was an abstraction – the assertion of the neutrality, the essential meaninglessness, of sexed bodies; the other was substantive, it designated the social cultural, and psychical attempt to establish meaning” (Scott, 2005, 57).

This sophisticated approach allowed them to argue both: in favour of the quota and that women are equal to men.

Another concept I refer to is *Strategic Essentialism*.

Egalitarian feminism was widely criticized within feminist circles; movements such as *Black Feminism*, *Chiquita Feminism*, and an intersectional³ perspective was demanded. In the 1980s Alice Walker coined the term *Womanism*, in order to point to the differences between white and black women in the USA. Accordingly, feminism for black women was not an accurate term since it did not include the struggles, which black women were facing because of discrimination. Typically white women are part of the problem and thus cooperation between whites and blacks

³With the term intersectionality I refer here to the concept of Kimberle Crenshaw (1981), where she describes the interaction of different factors: gender, class, sexual orientation, religion and ethnicity and states that all of them can lead to discrimination, but the different effects cannot be added up. If two or more factors, which would lead to discrimination come together, their interdependencies have to be explored. It is not sufficient to say that black women have to face racial and sexist discrimination, since they are facing a certain kind of discrimination. An intersectional perspective therefore might create barriers for structural analysis given that the biography of every person is individual and cannot be compared to others.

was not desirable. Black feminism on the opposite challenges the false universality of feminism, the assumed whiteness in it is abandoned (Collins, 1996).

An intersectional perspective reveals that the experience of gender is different among groups, women are not a homogeneous category but differ in a great manner. Based of cultural differences, class, ethnicity, religion or sexual orientation the gender role of women might completely differ. Nevertheless intersectionality also has disadvantages. If splitting up women into different groups or recognizing that every women is different, structures of power are disguised; if we are not able to say that women are suppressed by men nothing can be changed about it. Therefore, some generalizations seem to be always necessary in order to reveal hierarchies and structural imbalances. I argue here for a “strategic essentialism” (Landry and MacLean, 1996). Although it is important to note that different groups and minorities are negatively affected by patriarchy, it is very useful to form a single group out of all women, according to their gender and therefore disclose the hierarchies of power within our societies. As gender is a factor that is inscribed everywhere, a focus on an intersectional perspective sometimes might lead to an analytical reduction, where not all structures of power can be revealed (Michalitsch, 2013a, 434). Different standpoints (of women) are fully valid but it also make it impossible to illustrate structural differences.

In order to prevent these difficulties I will form a temporary group of all women to expose patriarchy within neoclassical economics, regardless of their other factors. Nonetheless, one has to keep in mind that this is a simplification of the problem. The critique of feminists that has been brought up by the above mentioned groups (among others) is still valid and pinpoints important issues. I do not question or disagree that individual women experiences differ in a great manner. Nonetheless, I do not find it helpful to use different dimension in my analysis, at least for now. I want to analyse structures in a one dimensional setting here, only taking gender into account. For further analysis a multidimensional analysis surely would be not only interesting but also helpful.

The addition of the gender-dimension to models which do not have any dimension and do not allow for considering different individuals is a huge step forward in my opinion. What becomes crucial here is not to forget that limitations in the predicting power arise by the assumption of a homogeneous group of women. Revealing patriarchy shows the suppression of women on average but not all women are suppressed to the same extent as this differs based on race, religion, sexual orientation and many others. Some have to face sexism more and some less, others suffer from racism or other discrimination more than from sexism. This is visible by various studies, gender

pay gaps differ among countries, such as the percentage of women who participate on the paid labour market, some countries and cultures accept homosexual relationships or marriage others do not. Depending on the circumstances and their environment women face different realities and possibilities but taking every single biography into account is beyond the scope of this thesis. Building on this argumentation I will analyse the homo oeconomicus from a binary perspective, namely man and women only.

2.1.2 The Feminist Epistemologies and Feminist Economics

In this thesis I conduct an analysis of the assumptions of the homo oeconomicus by using feminist methodology. I show that the assumptions are biased and represent typical male behaviour, although the homo oeconomicus is considered value-free and gender neutral. Before doing this I will sketch the feminist critique of the economic science, especially neoclassical economics. This enables me to show that my research question is important and that it is necessary to analyse economics from a specifically feminist view in order to uncover gender biases.

“Feminist theory raises questions about the adequacy of economic practice not because economics is in general too objective, but because it is not objective enough. Various value-laden and partial- and, in particular, masculine-gendered-perspectives on subject, model, method and pedagogy have heretofore been mistakenly perceived as value free and impartial in economics, as in other scientific disciplines” (Nelson, 1995, 132).

Although sciences such as economics tend to position themselves as value-free and objective, many (feminist) economists have already argued that this it is value-laden. It is not a natural science, where controlled experiments conducted in a laboratory might lead to unbiased results. Objectivity is almost impossible to achieve, as the assumptions, the research topic, methods and other factors might already lead to biases. In economics, researchers typically position themselves outside of the research field and therefore might ignore or not see the impact their presence causes. An example for this are econometrical studies, although these are based on concepts such as statistical significance or demand a high number of observation to deliver valid results, data selection can lead to biases. It is important to take the assumptions that have been made by researchers into account, especially when the results are interpreted. Donna Haraway (1988) develops the concept of “situated knowledge” as feminist objectivity. In her opinion all knowledge is socially constructed and by acknowledging this feminists are able to achieve a

better understanding of the world and do better science as they are not blinded by a presumably objective perspective.

“The moral is simple: only partial perspective promises objective vision. All Western cultural narratives about objectivity are allegories of the ideologies governing the relations of what we call mind and body, distance and responsibility. Feminist objectivity is about limited location and situated knowledge, not about transcendence and splitting of subject and object. It allows us to become answerable for what we learn how to see.” (Haraway, 1988, 583)

As I show later, one of the main topics in economics is the allocation of goods. Feminist economists investigate the social contracts behind the distribution of goods among other topics. They are concerned with human beings, their behaviour, their choices and institutions. Its research questions take into account social structures and are value laden.

In the opinion of Nelson (1995), it is necessary to reform the way economics is taught in order to be able to perform a different, more open and interdisciplinary approach to this science. She highlights the need for critical, analytical and creative thinking when confronted with economic problems. In addition, the power hierarchy between professors and students should be abandoned and replaced by a dialogue between the two groups. These changes might lead to a new understanding of mainstream economics and the incorporation of new research methods.

Rudolph (1986) suggests that neoclassical theories serve as a mechanism for controlling human behaviour in order to confirm and enforce the existing social and economical order. If the assumption is true, that behaviour is based on value-free economic laws then the existing status is reinforced and justified. Following her argumentation one could suggest that neoclassical economics serves as an justification of patriarchal structures since economic analysis are regarded as valid and the societal system we live in is patriarchal. Similarly Michalitsch (2013b, 47) conducts in application of Michel Foucault’s theories that economics can be seen as tool for dictating a specific truth and exercising power and hierarchical structures, therefore economic theory has the power to form subjects and rule over them.

In this context the gender dualism also plays a significant role since economics still is a men dominated science⁴ assigned to use ‘softer’, qualitative methods, whereas men tend to use

⁴We can observe the *Glass Ceiling Effect* at Austrian Universities, although in total women are overrepresented with 55,09% of the total staff their share minimizes the higher ranked the position is, within the scientific staff women only built 43,22% and of the professors only 21,88% in 2014 at the Vienna University of Business and Economics. Researchers also refer to this as the *Vertical Segregation* or *Leaky Pipeline*. Additionally horizontal

quantitative methods. Julie Nelson argues to see advantages and disadvantages in both methods and pleads for a combination of them in order to enable a flexible, contextualized, humanistic, strong, logical, scientific, and precise research method that is not limited to mathematics any more. Alternative views on economic models have simply been cut off by posing that they are too “psychological” or too “soft” in the past from the mainstream theory. This seems to be a fitting example for male bias, characteristics that are associated with men, are also associated with “good economics” or “proper economics” (Nelson, 1995).

A feminist analysis of human behaviour tends to be more inclusive and suggests “that there should not be just one economic model, but rather many economic models, depending on the usefulness of various modelling techniques in the various applications” (Nelson, 1995, 137). Through the process of formalization, accompanied by objectification socially constructed differences become naturalised and patriarchal suppression justified – gender becomes sex (Michalitsch, 2000). Depending on the prism people are looking through they see different realities. Neoclassical economics is only allowing for a highly narrow understanding of valid science and thus ignoring other realities.

The dominant opinion in feminist scholarship is that male (but not only male) has not been consciously strengthened but rather that the androcentristic bias occur through the existent structures of power based on factors such as gender. Thus also the research interests and the results are not objective but rather occur always in the interest of somebody. Since the economic science is mostly dominated by the *white, western man* it suits the interests of this group. Coming back to the topic of patriarchy, one could conclude that since patriarchy is the dominant system in which we operate, mainstream economics serves the interests of patriarchal structures and reinforces them. As Rubin (1975) has pointed out patriarchal structures have been there long before the economics science existed.

Opening up the discipline might lead to scientists who “ask new questions, obtain new observations, suggest new explanations, uncover and correct the flaws produced by androcentric bias” (Seiz, 1992, 23).

Concluding, this research paper aims to identify and assess the presence of patriarchal structures in neoclassical economics. I argue that the social norms that are inscribed in and result from patriarchy are inherent in the model of the *homo oeconomicus* and influence and bias not only the assumptions but also the outcomes of neoclassical economics.

segregation becomes visible, where women tend to be overrepresented in research fields such as Marketing or Human Resources, whereas men dominate Finance or Statistics (Lydtin, 2014). The division at the University of Vienna in the department of Business and Economics is even much more shocking, where women make up only 6.5% of the professors in 2014 (Hosner et al., 2015).

In my analytical approach clear definitions of concepts are essential. Following Kromphardt (1982, 904), I see theories as a set of linked definitions, application conditions and hypotheses, where hypotheses are statements regarding a part of reality, which are empirically significant. A detailed study of the four assumptions which are the basis of the homo oeconomicus – rationality, exogenous preferences, symmetric information and the existence of natural market equilibria – enables me to point to epistemological similarities between patriarchy and neoclassical economics. Resulting the interlacement between the two narratives becomes clearly visible. In addition, I support my analytical arguments by pointing to existing empirical research on the different positioning of men and women in the economic sphere, which includes the labour markets and households.

3 Underlying Concepts

As many feminist economists have correctly pointed out there is a strong relationship between patriarchy and neoclassical economics, where the model of the homo oeconomicus should be seen as a very trenchant manifestation of neoclassical economics. I believe that an extensive analysis of the homo oeconomicus can lead to a critical assessment of economic assumptions in general. It is beyond the scope of this thesis to outline all the different mechanisms which apply to specific assumptions but the following chapters exemplify how patriarchal social structures are mirrored in economic assumptions. By outlining this for the four assumptions of the homo oeconomicus, the reader should be able to translate some of the insight to other economic branches. In the last section I discuss alternative models on the decision-making process of individuals to show how this translation of my previous insights can happen to non-neoclassical, heterodox models.

This chapter highlights the most important features of patriarchy and neoclassical economics and provides the basis for answering my research question. Starting with patriarchy I will show that its understanding is not limited to family relations or to sex. This mechanism exercises its power through numerous channels and institutions. The same holds for neoclassical economics. Although it is very much connected to methodological individualism it must not be reduced to it. My understanding of patriarchy is as a societal system, where men dominate women, without limitations to sex. It goes way beyond households and influences a broad spectrum of areas. Men and women are both negatively affected by patriarchal structures. I refer to neoclassical economics as grounded on: rationality, preferences, equilibria and methodological individualism, which relates the school of thoughts significantly to the homo oeconomicus, with certain limitations as I show below.

Patriarchy gives men power over women. The homo oeconomicus portrays human beings as fully independent figures and neglects social structures, which are mostly patriarchal. In the previous chapter, I make the case for feminist economics and the analysis of not only economic assumptions and models but also outcomes from a gender perspective. Neglecting women in economic theory might disadvantage them in reality as analyses based on biased assumptions prevent us from seeing gender-stereotypical arrangements, which ultimately leads to disadvantages for women in the private and public sphere (England, 2003). Economic policies might have a different impact on individuals based on factors such as gender as a result of structural differences, for instance, the stereotypical division of paid and unpaid labour. In order to assess

the mentioned differences a gender-impact assessment is necessary (Himmelweit, 2002).

This thesis does not aim to show if and how economic theories influence real individuals, but certainly specific values are transmitted through science. The homo oeconomicus is portrayed as an independent and rational individual, which does not show any emotions and therefore is always able to follow the best decision. If women are the opposite, it follows that they are not able to make correct – rational – decisions from an economic perspective. Through learning these principles, students might subconsciously believe that this is the ideal behaviour. A meta-analysis of game theoretical experiments concludes that economics students show unethical and anti-social behaviour to a greater extent on average compared to students of other subjects. The indoctrination hypothesis states that this is (at least partly) due to the theories they learn at university but the results for this are mixed (Wörsdörfer, 2014). Following, the possibility of value transmission through economic principles must not be neglected.

Below I continue with a definition and explanation of patriarchy and neoclassical economics, elaborate in a detailed way on some of the above mentioned arguments and conclude with a brief overview of mainstream and heterodox economics in order to differentiate and distinguish them clearly from neoclassical theories.

3.1 Patriarchy

In my thesis I adopt a broad understanding of patriarchy in order to cover the full spectrum of its influence on society and how the dominant position of men within society remains prevalent. After I define patriarchy and give a fragmental overview of its presence in the academic discourse, I point to the links between the anthropological concept and the economic science in general.

The Oxford English Dictionary offers two relevant definitions of the term patriarchy:

- “A form of social organization in which the father or oldest male is the head of the family, and descent and relationship are reckoned through the male line; government or rule by a man or men.
- The predominance of men in positions of power and influence in society, with cultural values and norms favouring men (Dictionary, n.d.a).”

The two definition are closely linked; the first one establishes and describes the framework of a patriarchal society, whereas the second one focuses more on the outcomes of such an order. It is interesting that neither the origin of patriarchy is mention nor women; patriarchy is described as a natural concept which enables subjects, men, to exercise power. Especially from a

feminist point of view it is necessary to expand the definition in a substantial manner and most importantly include women in it. Once crucial point of a patriarchal societal structure is that men rule over *women*. In order to overcome this, women have to be accepted as subjects as the egalitarian school of thoughts demands. It must become clear that females are being oppressed and controlled by males and that the “predominance of men in positions of power” comes at the expense of women and should not be phrased in such a neutral way as it has been done in the above definition.

Eva Cyba (2008) highlights structural resemblances in discrimination and inequality among individuals. In her view patriarchy is responsible for these as it is an influential organisational form. Only by acknowledging its existence, exclusion of certain groups from the ruling class becomes visible. As I have mentioned above, this means that women have to be included in the definition of a social system as they are clearly part of it. The author focuses on the relationship between men and women, in contrast to the definitions of the *Oxford Dictionary*. Men might have a specific interest in maintaining the status quo but the active role of women should not be overseen. Females are not objects and actively participate in shaping social structures through reifying social norms in the same extent as men do (Cyba, 2008, 19ff.).

Building on Gayle Rubin’s (1975) text, I argue that it is correct that women are also partly responsible for the maintenance of patriarchy but social relationship systems such as kinship systems⁵ and institutions which objectify women and deduct power from them play a significant role and might even disable women in fighting patriarchal norms. One of these systems is marriage. Starting from a cultural perspective the author refers to patriarchy as a “sex/gender system”, which is defined as “the set of arrangements by which a society transforms biological sexuality into products of human activity, and in which these transformed sexual needs are satisfied” (Rubin, 1975, 159).

The researcher grounds her theory on Claude Lévi-Strauss, who sees the exchange of women between men as the essence of kinship systems as marriage serves as a gift exchange mechanism. The gift exchange is limited by the incest taboo⁶, which ensures that the marriage takes place outside the own family, results in a new (or stronger) connection to another family and ensures

⁵The author uses the anthropological meaning of kinship system, where its understanding is not limited to biological relatives. It is a system of categories and statuses which go beyond actual genetic relationships and serves as an idiom of social interaction, organizing economics, and all kind of activities, including political, ceremonial and sexual (Rubin, 1975, 169).

⁶The term taboo originates in the Polynesian word *tapu*, the original meaning appears to be very ambivalent in English, on the one hand it could be translated with *sacred* or *holy* and on the other hand *dangerous*, *prohibited* or *impure*. The Polynesian opposite could be translated with *usual* or *accessible for everyone*. Accordingly it describes prohibitions, that are not related to God and do not need any justification; it is like an unwritten law within societies. Punishments for breaking taboos are not necessary as such behaviour will revenge itself (Freud, 1999, 24ff.).

the building of alliances. Although women participate in the gift exchange they do not have access to the alliances, as they are seen as an object.

According to Gayle Rubin's ideas, the oppression of women is clearly rooted in social structures where gender is the significant category, besides the fact that gender norms are based on biological factors. "The traffic in women" is independent of the division of labour since it differentiates among cultures but the status of women as exchangeable goods does not. Gender is created by the *sameness-taboo*, where biological differences are exacerbated and which ensures the division of labour. This taboo also sustains the heterosexual marriage. "At the most general level, the social organization of sex rests upon gender, obligatory heterosexuality, and the constraint of female sexuality" (Rubin, 1975, 179). It is noticeable that through the exacerbation of differences between sexes, the recognition of sameness is minimized and gender identities are built upon it. It is important to note that not only women are the victim of patriarchy but also men as their role in society is also determined in a very specific way.

Kinship systems are the root of patriarchal structures and psychoanalysis enables the reproduction of them. "In this sense, psychoanalysis⁷ has often become more than a theory of the mechanisms of the reproduction of sexual arrangements; it has been one of those mechanisms" (Rubin, 1975, 184).

Cyba (2008, 17) refers to patriarchy as a universal theory, which describes men's domination over women, where the local and historical dimensions also have to be taken into account as has been done by Gayle Rubin. Walby (1990, 20) describes it as "a system of social structures and social practices in which men dominate, oppress and exploit women".

Although the definitions differ from each other and Eva Cyba and Sylvia Walby do not specify exactly what "social structures" and "social practices" patriarchy is built on, they are in general very similar. They emphasize the fact that patriarchy is not naturally given; the power that one specific group has over the other is socially constructed, justified by social norms and reproduced by institutions. Catharine MacKinnon states that "[f]eminism has unmasked maleness as a form of power that is both omnipotent and non-existent, an unreal thing with very real consequences" (MacKinnon, 1982, 543). Once again this refers to the fact that male power is established and only becomes true when the difference between men and women is visible, or in other words is formed without a real existing basis. Based on biological differences women

⁷Psychoanalysis has been widely criticized by feminist and gay movements since it is transforming moral law into scientific law, in it also sex roles are naturalised and females are positioned as the submissive sex. It played an especially significant role in the french differential feminist movement, where the authors labelled some of their writings as a critique or a new way of thinking about the classical Freudian psychoanalysis (see e.g. Kristeva, 1989).

are constructed as the opposite of men.

Since women are not men and men are the superior sex, sameness between them can not be enforced. Following, maleness is not naturally given, it is non-existent as well and the male domination is justified by the constructed differences, which are build on sexuality. Concluding, sexuality is the main mechanism that establishes and supports patriarchy.

“Under the rubric of feminism, woman’s situation has been explained as a consequence of biology or of reproduction and mothering, social organizations of biology; as caused by the marriage law or, as extensions, by the patriarchal family, becoming society as a ‘patriarchy’; or as caused by artificial gender roles and their attendant attitudes” (MacKinnon, 1982, 528f.) [emphasize in original].

Becker-Schmidt (1993) gives an overview over the feminist discourse and establishes a broad and explicit definition of patriarchy. She states that patriarchy is grounded on the biological reproduction, heterosexuality as the dominant social norm, the structures of power within families, where the husband is controlling his wife’s work, the division of labour, sexuality, and politics. In short, patriarchy is grounded on the assumptions that women are disadvantaged by the fact that they are women and based on the sex of human beings. From an egalitarian feminism perspective, where there is no actual difference between men and women, it can be concluded that women are disadvantaged because men decide to suppress them. Although as established earlier women are also responsible for reifying patriarchal structures, coming back to Gayle Rubin’s explanation it was the male head of the family who decided on the husband of his daughters, just to name one example.

In order to examine how patriarchal social structures can be found in the assumptions of the homo oeconomicus it is necessary to have a clear definition of patriarchy. For my purposes it is crucial to examine different definitions very carefully and understand what they are referring to and which purpose they serve, all definitions I have mentioned above are correct and suit their function. Patriarchy defined for an economical analysis will be different from a definition for historical or anthropological research but this does not mean that they contradict each other, rather they highlight different aspects.

I will use a broad interpretation of the concept, without any limitations regarding sex, gender or gender role. So I understand patriarchy a system, where a certain group – men – systematically dominates a different group – women – based on certain factors. In addition, I adopt a very inclusive understanding of men and women here and include sex, gender and gender role. The factors which lead to power asymmetries can include biological reproduction,

heterosexuality, the division of labour or many more. The existence and maintenance of the power structures is based on specific institutions, such as patriarchal marriage, which again are shaped by humans. Nevertheless, it is important to note that patriarchy should not be limited to these factors, it is a fluid concept that changes over time.

Patriarchy does not only disadvantage women on average, but also has negative consequences for man as the freedom of choice is limited and behaviour and choices are connected to values. It is important to uncover the mechanisms that manifest patriarchal structures in real lives of individuals. This is the main purpose of this thesis, I am trying to increase visibility for value transmission in economics and for the justification of the status quo. If economic models influence society and some of them use any of the homo oeconomicus assumptions then we can expect the reproduction or enforcement of patriarchal structures as I will show later.

Defining and pinpointing to the exact transmission mechanisms is difficult as they are change over time and are also highly dependent on cultures, the meaning of marriage and women's rights to choose their husband can not be compared in Europe and in Sub-Saharan regions, where forced marriages are spread to a much higher extent than in the first region Walker (2012). Nevertheless, the definitions above serve as a good starting point and are sufficient for my purpose.

3.2 Economics

The discipline of economics is grounded on Political Economy⁸. Adam Smith and John Stuart Mill are often seen as the founding fathers of political economy, which then became economics in its modern understanding.

“It [political economy] makes entire abstraction of every other human passion or motive; expect those which may be regarded as perpetually antagonizing principles to the desire of wealth, namely, aversion to labour and desire of the present enjoyment of costly indulgences” (Williams, 1976, 41).

John Stuart Mill limits the research topics of political economy to wealth-related topics in this sentence. Nevertheless, the author sees the mentioned limitation as a first step since “[i]n order to judge how he will act under the variety of desires and aversions which are concurrently operating upon him, we must know how he would act under the exclusive influence of each

⁸*Economy* originates from the Greek word *econom*, where *eco* means house and *nom* law. It was used as a synonym for household management, later it received a wider meaning, especially in combination with the term *politique* and meant public administration. In the 18th century the term almost exclusively referred to wealth while household issues were excluded (Groenewegen, 2008, 476ff.)

one in particular” (Williams, 1976, 42). His aim is to examine human behaviour, especially decision-making processes under the influence of monetary factors, always keeping in mind that this should be only a first step.

The Wealth of Nations written by Adam Smith marks the rise of classical economics for a huge number of scholars. In his book the author emphasizes the meaning of *the invisible hand* and therefore describes natural market equilibria for the first time, as far as we are aware. Market equilibria are shaped by aggregate demand and supply and will determine the equilibrium price and amount of goods that should be produced in his opinion. This is consistent with neoclassical economics but has been challenged by newer economic schools of thoughts, such as New Keynesian economics, where prices are sticky and not able to adjust to changes in demand and supply instantaneously. According to Adam Smith state interventions, such as price or amount guidelines, are inefficient and should be avoided. In short, a competitive free market leads to the best allocation of resources and following is most efficient. Through the course of the last centuries classical economics translated to neoclassical economics, where basic ideas remain the same, and the school of thoughts is focusing on rationality, market equilibria and growth. Compared to classical economics, neoclassical economics has a wide range of mathematical arguments in it and focuses on utility and profit maximization concepts, whereas classical economics focuses on value and distribution. An example of the distinction between the two theories are the values of goods, classical economics emphasizes its production costs, whereas neoclassical examines the utility, which an individual gains through the consumption of the good. (Backhouse and Backhouse, 2002) Nowadays individual choices in markets or rational choice are in the center of analysis and are seen as “true economics” (Nelson, 1995, 137). Political Theory has been turned into a discipline, where “quality in method is identified primarily with mathematical rigour” (Nelson, 1995, 138).

“Economics is a social science that uses mathematical tools. It is a social science because it deals with the behaviour of people. It uses mathematical tools because ideas and theories and models and empirical evidence about people’s economic behaviour are expressed mathematically” (Olney, 2009, 3).

Definitions of economics, such as the above stated can be found in numerous textbooks; it seems that in most cases the understanding of economics is limited to neoclassical economics. As I will show later economics is not only about mathematical equations and statistics. Of course this is a highly relevant part of it but the interpretation of mathematical results and the questioning of made assumptions are at least equally important for the discipline.

As one can see already individualism plays a significant role, especially in microeconomics, which also often serves as a foundation for macroeconomic models. Following Hausman (2008), I will distinguish between three varieties of individualism and two views of human nature. Individualism can either be ontological – where only mental states and physical objects are real in contrast to cultures or institutions –, explanatory or ethical. Human nature can be regarded to as rational or self-interested. Explanatory individualism is often used synonymously with methodological individualism, since this is a central term in my definition of neoclassical economics I will discuss it deeper than the other varieties of individualism. Economists who believe in the principles of this understanding of individualism assume that the fundamental explanatory principles or laws should only be based on the preferences, beliefs, and choices of individual human beings, never on institutions or the influence of society on individuals. Situations can evolve from social entities, but these are still explained and justified by the preferences of individuals. The existence of a natural market equilibrium enables that the preferences of single human beings are summed up and preferences of a whole community can be assessed. Nevertheless this approach neglects power structures and hierarchies between individuals as others never play a role in any analysis.

Economic theory is typically concerned with markets, especially with the production, distribution and consumption of goods and services. The interactions between economic agents and markets are typically not in the focus of attention for neoclassical economics.

The assumption about the existence of a natural market equilibrium, enables a together-thinking of theories on the micro and macro level (Vilks, 1991, 4). This thesis refers mainly to microeconomics since it is about the decision-making process of individuals in neoclassical economic theory. According to the dominant narrative, the homo oeconomicus is delivering explanations for the behaviour of customers, firms and markets (Nicholson and Snyder, 2009, 3).

A common characteristic of the above mentioned definitions, is the exclusion of the private sphere, the households and the in it involved unpaid care-work. Individuals are referred to as customers — demand — or firms — supply, families have found their way into mainstream as late as in the 1960s⁹.

My thesis deals with the homo oeconomicus, a typically microeconomic model, as it analyses the decision-making of individuals and focuses on an individualistic approach. Although the vast

⁹Gary Becker and Jacob Mincer founded the so-called *New Home Economics*, where the allocation of time, women's labour supply and division of labour in households among others were recognized for the first time as being factors in the economic analysis (Becker, 1960; Mincer, 1962).

majority of scholars would agree that the homo oeconomicus as such is not a realistic model of human decision-making it has been very persistent and its origins can be traced back to the late 19th century. Although it is academically not highly relevant any more, it is often the first thing students learn in economics and some of the assumptions are still used new models therefore, I find it important to examine what the underlying assumptions exactly mean and how they treat gender differences. As I show the homo oeconomicus represents typically male connotated values and neglects female preferences. Following, it is a good example of the manifestation and representation of patriarchal values and structures in science.

Neoclassical Economics

Neoclassical economics has no unique meaning or strict definition, various economists define this school of thoughts in a differently (Vilks, 1991, 1). In the following paragraphs I will elaborate on a few existing definitions and then build my own definition, which I will use in the thesis.

According to Dequech (2007) neoclassical economics is characterised by the emphasizes on rationality and the usage of utility functions (as opposed to value concepts, which was done in classical economics) as a criterion of rationality, the existence of equilibria, and certainty. Although modern neoclassical theory has diverged partly from the strict assumption of the homo oeconomicus, the assumptions can be still partly found in the school of thoughts. As an example Real Business Cycle models can be found, which are characterised by representative and equal households with utility maximizing behaviour, equilibria in markets, rational agents but imperfect information, which leads to fluctuations in markets (Romer, 2012, 189ff.). Following, the assumptions of the homo oeconomicus do not define neoclassical economics, the homo oeconomicus is rather one of many neoclassical models, which is the main subject of my analysis.

In order to highlight the development of the school of thoughts I will discuss and contrast two definitions, which have been published over 20 years apart from each other.

Vilks (1991, 75) suggests seven axioms, where axioms are defined as language rules that are universally valid, which taken together result in his definition of neoclassical economics:

1. The Axiom of Rationality: if individuals take a certain action at a certain point in time, there is no other action that seems better and possible to them, this does not include the assumption that individuals carefully think about their decision or that preferences are static.

2. The Axiom of Subjective Options for Action: if individuals take a certain action at a certain point in time, they think it is possible at that moment.
3. The Axiom of Objective Options for Action: if certain actions are taken given a certain situation, these actions are objectively possible in the given situation.
4. The Axiom of the Existence of Situation and Action: given a situation every individual will take a certain action, where doing nothing also classifies as an action.
5. The Axiom of Situation Certainty: the decision about an action of individuals is determined by the situation they are in, in addition the situation also determines the objective and subjective possible actions.
6. The Axiom of Inclusion: a situation is a situation and an action is an action and these have to be differentiated.
7. The Axiom of Dynamics: if a condition has been satisfied and immediately afterwards a situation occurs, the situations might be a result of the condition.

In the opinion of the researcher a model, which does not fulfil the above stated seven axioms, will be rejected in neoclassical economics (Vilks, 1991, 75).

Arnsperger and Varoufakis (2006) offer a different definition of neoclassical economics, which relies on only three axioms. In their view these are responsible for the discursive success of neoclassical economics within the social sciences and are the deep cause of its theoretical failure and therefore make it harder to establish a pluralist debate on the underlying axioms.

Firstly, the authors address methodological individualism¹⁰ since analyses are conducted on an individual level and then the findings on single individuals aggregated in order to get the big macroeconomic picture. Through the emphasize on the individual level a strict separation of structure and agency occurs and the influence of institutions and societies is neglected.

Secondly, they point to methodological instrumentalism. Human behaviour in neoclassical economics is always driven by the desire to maximize preference-satisfaction; preferences originally have been seen as exogenous variables and were not subject of a deeper analysis but newer neoclassical economics dropped the assumptions that preferences are solely exogenous and they can be determined within models. Nevertheless, the instrumentalist factor remained.

¹⁰Arrow (1994, 1) defines methodological individualism the following: “[i]n the usual versions of economic theory, each individual makes decisions to consume different commodities, to work at one job or another, to choose production methods, to save, and to invest. In one way or another, these decisions interact to produce an outcome which determines the workings of the economy, the allocation of resources in short. It seems commonly to be assumed that the individual decisions then form a complete set of explanatory variable”.

Thirdly, methodological equilibration enables the process of aggregating an analysis on an individual level to a macroeconomic level. Since neoclassical analysis is not able to guarantee the existence of equilibria, it simply presumes them and conducts analysis on the stableness of these equilibria instead of investigating their existence. The existence of multiple equilibria, where agents might be indifferent between them is also possible.

The authors argue that neoclassical economics is reproducing itself through a series of metamorphoses, where the new models are more complex, expand in scope and move into new areas. Nevertheless all of them are grounded on the above mentioned axioms and therefore classify as neoclassical models. The authoritarian dynamics of neoclassical economics are thus explained by the invisibility of the axioms to most people. As they are not recognized as such, they can not be questioned. In addition, since all economics is built on these axioms, it might be hard for a researcher to question them since this will affect his or her career path (Arnsperger and Varoufakis, 2006).

Arnis Vilks' definition very broad, therefore, newer economics, which is not neoclassical might categorize as such according to the definition. Interestingly Arnsperger and Varoufakis (2006) classify all mainstream economics as neoclassical but we have to take into account that this paper has been published 10 years ago and especially the recent crisis 07/08 has led to an increase in momentum for heterodox economics.

Before contrasting the definitions, I turn to the similarities, which might serve as hints for the core elements of neoclassical economics. The Axiom of rationality and methodological equilibration both describe utility maximization, one of the main assumptions of the homo oeconomicus. Arnis Vilks notes that preferences do not have to be static and thus, can be seen as endogenous variables. Additionally, I would include the axiom of subjective options for actions in this group, as individuals who are deciding on actions that seem impossible to them would classify as irrational in my opinion. The other five axioms of Arnis Vilks seem to be built on logic and, as said before, refer to most of the economic discipline. The axiom of inclusion, for instance, is true in New Keynesian economics as well, which surely is very different from neoclassical economics as it relies on government intervention in the case of market failures (Backhouse and Backhouse, 2002) and neoclassical economics favours laissez-faire institutions. One of the most central points for me in defining neoclassical economics is methodological individualism, as mentioned by Christian Arnsperger and Yanis Varoufakis, which also plays a role in their third axiom, methodological equilibration.

The two definitions are highly different, where the first one focuses on logic and the second on

the connection between individuals and institutions, states or societies. I believe an important conclusion that can be derived here, is how mainstream neoclassical economics used to be a few decades ago. It was almost uncontested and remains the main school of thoughts taught at universities (Lee, 2007) while research and journals have moved forward and publish a broad spectrum of different schools of thoughts (Colander, Holt and Rosser, 2004).

For the purpose of this master thesis, I base my definition of neoclassical economics on rationality, preferences and market equilibria, leaning on the definition of Christian Arnsperger and Yanis Varoufakis, as these are also three of the four assumptions of the homo oeconomicus model, which is the main subject of this thesis. The last criterion for my definition is methodological individualism. Nevertheless, one should keep in mind that the usage of these concepts is not exclusive to neoclassical economics, as stated above rationality is assumed in a great number of models, outside of the neoclassical theory. Also the understanding of rationality has changed and is still changing, as I will argue in detail later neoclassical economics does not assume rationality to be selfish any more¹¹. but there are still technical limitations in incorporating altruistic preferences in the utility function of individuals mainly due to methodological individualism.

As the concept of rationality plays an important part in the definition and is connected to methodological instrumentalism as the decisions of individuals, which lead to the best utility outcome are assumed to be rational. At this point I do not refer to egoism and altruism yet as it is not substantial for the definition of neoclassical economics in my opinion. It is sufficient to define the meaning of rationality more explicitly and return to selfishness when analysing the assumptions of the homo oeconomicus.

According to the Oxford English Dictionary, rationality is “[t]he quality or condition of possessing reason; the ability to exercise reason” (Dictionary, n.d.b). This means that every behaviour is rational as long as the individual can justify it and it is in accordance to his or her preferences. Rational behaviour can range from donating money or goods to exploiting of others. There is a link between the Arnis Vilks’ axiom regarding rationality and Christian Arnsperger’s and Yanis Varoufakis’ axiom concerning methodological instrumentalism. In a nutshell, one can say that individuals are driven by the desire to maximize their utilities, which are dependent on their individual preferences and the relation between them. Human beings, who act and decide in accordance with their preferences are therefore rational as per the definition presented above.

Heterodox economics has not abolished the concept of rationality as such but its usage differs in a great manner. Institutionalist economist, for instance, which should be classified as

¹¹For a overview on a historical overview on the definition of rationality and distinction of self-interested and self-less preferences (see e.g. Starbatty, 1999)

heterodox, as they put institutions in the center of their research and not individuals due to the strong connection between societies and individuals. Backhouse and Backhouse (2002), also use preferences as an explanation for the decision-making of individuals. In contrast to neoclassical economics, preferences are shaped by social interaction, institutions and interpersonal relationships. In addition, efficiency is not assumed and in some specifications, inefficiencies might occur based on power imbalances. Recalling the discussion on patriarchy I present earlier, makes it easy to conclude that marriage could serve an institution, where men display their power over women and become the patriarch of the family. By neglecting relationships and dependencies between individuals neoclassical economics does not take power structures into account.

Concluding, other schools of thoughts can be negatively defined based on the definition of neoclassical economics, rationality, preferences, equilibria and individualism from a methodological perspective. In the course of this thesis, the assumptions which will be analysed are narrowed to selfishness as equilibria, rationality, exogenous preferences and symmetric information is added, as I will analyse only the model of the homo oeconomicus, which has stricter assumptions and not the whole neoclassical approach. Exogenous preferences automatically require methodological individualism as hierarchies, relationships and institutions can be taken into account through endogenous and flexible preferences.

Davis (2011, 1) states “that individuality is a fundamental preoccupation of contemporary human society”, I agree that this is the case in neoclassical economics but definitely not of all economic theories. If recognizing that humanity’s individual needs, desires and limitations are dependent on social structures and institutions, individuality can not be seen as the basis for all analysis. Human societies are also concerned with the interaction of individuals and the structures that lie behind these interactions. Individuals influence institutions, which again influence individuals, it is a circle which can not be reflected by using methodological individualism.

Following Arrow (1994), it is important to point out that even in neoclassical economics it is well accepted that the behaviour of individual’s is not only denoted by their own choice. He successfully points out that markets are a place where interaction leads to the development of prices. In the most basic model suppliers will lower or raise their prices according to the amount which is bought by the customers, as long as the amount and price will not reach its natural equilibrium. “More generally, individual behaviour is always mediated by social relations. These are as much a part of the description of reality as is individual behaviour” (Arrow, 1994, 5).

This is the reason why methodological individualism might lead us to wrong paths for analyses. If preferences are shaped by social institutions, and decision-making by preferences, it is

absolutely necessary to take social institutions into account when examining preferences and not rely on the analysis of individuals neglecting social structures.

From a feminist perspective it is necessary to understand and investigate the causes for women's oppression, which is shaped by relationships (Rubin, 1975, 157). Within a neoclassical perspective, especially with a focus on methodological individualism it seems to be very difficult, if not impossible, to do so. Folbre (1994, 22) emphasizes the role of institutions in the decision-making processes of individuals and demands explanations of cultural norms. Social institutions shape individual's preferences and therefore are able to enforce discrimination or justify patriarchal norms. Unequal opportunities and unequal outcomes based on gender are invisible within the neoclassical framework. This thesis aims to show based on the example of one neoclassical model, how this happens and why the mentioned inequalities can not become visible within the *homo oeconomicus*.

Mainstream Economics

Mainstream economics is defined by the ideas and approaches that match the ones in leading academic institutions, organizations and journals (Dequech, 2007, 281). 20-30 years ago neoclassical economics was classified as mainstream by a number of researchers (see e.g. Kanth, 1997). Today the definition of mainstream that relies solely of neoclassical assumptions is not complete any more. The Noble price is one of the most prestigious research awards in a number of areas, in Economics it has been rewarded to contributions in Behavioural Economics, Game Theory, Economics Governance and Uncertainty (just to name a few) in recent years Riksbank (n.d.). Where all of these research areas must not be classified as neoclassical. A huge number of central banks, state governments and international organizations rely on New Keynesian assumptions Kiley (2016). Both of these facts, indicate that the definition of mainstream has broadened significantly in recent years. Nevertheless, academic teaching seems to be still lagging behind.

Elsner (2012, XVIII) refers to mainstream economics as "mostly based on the relatively simplistic core model of the optimal, equilibrating, and stable market economy". According to him economic pedagogy appears to be especially resistant to heterodox adoptions while research has already changed to a certain degree. According to Daniel Hausman & Michael McPherson two theses underlie mainstream economics, namely, that human beings are rational and the embedded generalization about preferences, which states that individuals always strive for more (Hausman, 2008, 235ff.), which are in line with the definition of neoclassical economics. Lawson (2006) points to the emphasize mainstream economics is putting on mathematical models and

equations nowadays. Following he defines the mainstream conception of proper economics as relying on and allowing only for “certain mathematical-deductive forms of reasoning” (Lawson, 2006, 492).

Over the past decades the understanding of rationality, the limitations of econometric studies and the taking into account the meaning of institutions has changed, nevertheless the changes occur within a framework of formalistic modelling, which is representative for mainstream economics.

“The insistence on mathematical-deductive modelling prevails in all cases; the essential feature of the recent and current mainstream remains intact” (Lawson, 2006, 491).

In fact, according to the authors mainstream economics rather relies on orthodox methodology than on neoclassical axioms, such as the existence of a market equilibrium. Nevertheless the emphasize on certain mathematical methods include the restriction of economic analyses to methodological individualism since the social domain can only be constituted by isolated individuals (Lawson, 2006). Although neoclassical economics is still very important, not fulfilling its assumptions does not position other theories automatically outside the mainstream.

In order to close the gap between the mentioned purpose and interpretation I argue that rigour mathematical tools are not sufficient. Only rejecting the axiom of methodological individualism and allowing for a broader perspective on economic research areas, including the usage of different tools, we can find answers to the opposed questions (Rubinstein, 1995, 12).

I define neoclassical economics as part of the mainstream, next to other important schools of thoughts. Also, what is considered mainstream is often changing in times of economic disturbances, which is the case since the subprime and governmental debt crises 10 years ago. Therefore, the definition of mainstream remains fluent.

Heterodox Economics

The term *heterodox* has been used starting from the 1930s to 1980s to mark economic theory or economists that were in some form dissent relative to mainstream economics within the institutionalist literature. In the late 1980s also Marxian and Post Keynesian theories were subsumed under this term. As the opposition to mainstream economics grew and new theories emerged the term began to cover all of the theories opposite of the mainstream by 1999 (Lee, 2008, 2f.).

“[H]eterodoxy serves, in the first instance, as an umbrella term to cover the coming together of, sometimes long-standing, *separate* heterodox projects or traditions” (Lawson, 2006, 484) [emphasize in original].

Definitions can be formulated in a negative or positive way. Where the first describes a definition which highlights the opposition towards something; heterodox economics is defined as opposite to orthodox theories. The common criterion of heterodoxy is the differentiation from mainstream. A positive approach focuses on common paradigms, ideas or methodologies.

Lawson (2006) defines heterodox economics based on three common commonalities: recurring fairly abstract tradition-specific themes and emphases, a multiplicity of attempts applied on the tradition-specific themes and the development of methodological principles, which following serve as alternatives to those of the mainstream, and a recognition that generating agreement is difficult, and thus the acceptance that the only commonality might be the opposition to the mainstream. This is a positive definition as it does heterodox economics is not defined as opposed to something else.

Since heterodox economics is often pleading for the usage of a method-mix, it can not be seen as mainstream economics (Colander et al., 2004, 492). It can be defined as “a rejection of the view that formalistic methods are everywhere and always appropriate” (Lawson, 2006, 492). Additionally, heterodox economics displays a tendency to reject methodological individualism, it is concerned with interdependent social realities and investigates social structures and hierarchies (Lawson, 2006).

According to Colander, Holt and Rosser (2004) mainstream economics has changed and allows for a broader perspective, the axioms of rationality, selfishness and equilibrium have become weaker as heterodox economics is slowly making its way into mainstream.

“Standard classifications tend to miss the diversity that exists within the profession, and the many new ideas that are being tried out. They miss the important insight that one can be part of the mainstream and yet not necessarily hold ‘orthodox’ ideas. Standard classifications also emphasize a fairly narrow orthodox core of the profession and convey a picture of all conventional economists accepting this core. The reality is more complicated; conventional economists often hold a variety of views simultaneously. If the variance of views increases, while the core remains relatively unchanged, the static characterization of the profession will not change, but its dynamic characterization will” (Colander, Holt and Rosser, 2004, 487)[emphasize in original].

Some feminist economists argue that traditional neoclassical models have developed into “neoclassical institutionalist models” (Folbre, 1994, 24), where the main difference between the two is an expanded understanding of individual agents. According to this a household also classifies as one individual, as it has a common utility function and there is no differentiation between household members. In addition, norms and preferences have turned from exogenously given factors to partially endogenous computable factors, where the exchange, bargaining and coordination does not only take place in the market sphere but also in and through social institutions. Consequently, the author states that the acceptance of neoclassical institutionalist models, which recognize that markets do not function efficiently and that inequalities based on factors such as gender and race are perpetuated, has widened.

“A theory that takes individual agents as the starting point (whether they are perfectly rational, imperfectly rational, or simply purposeful) cannot explain how they come to want what they want or whether they are able to get what they want. The purposeful choices of one generation influence the next generation’s desires and capacities. Individuals are born into social structures that shape their sense of identity and pursue their interest” (Folbre, 1994, 28f.).

As stated before, heterodox approaches also can be categorized as mainstream, therefore it is useful to contrast them to neoclassical economics, as I have defined it above in order to point again to the limitations of this approach. According to Davis (2011), heterodox economic theories differ strongly from neoclassical theory in their conception of individuals since they see them as embedded in their historical social structure and not individualistic and completely independent.

“Indeed many would argue that the embedded individual conception is not a conception of individuals at all, but rather a proposal to ignore individuals, in order to focus on groups, classes, movements, historical forces, history, and so on” (Davis, 2011, 17).

Heterodoxy is not concerned with predictions of economic development per se, but rather with explaining the actual social provisioning process. Finding answers to this research agenda involves the investigation of human agency in a cultural context, social processes in a historical context, and the meaning of certain terms, such as markets or state (Lee, 2008). Heterodox economic theory is not dependent on the mainstream but found its way into it as its limitations have been abolished.

Concluding, heterodox economics refers to individuals as human beings attached to institutions and dependent on others and it is impossible to conduct an economic analysis without taking agency into account in its framework. Emphasize should be put on the beginning of the analysis; as heterodox economists start their analysis from an aggregated point of view and not from the individual level as neoclassical economists. Neoclassical theory is therefore a bottom up approach, whereas heterodox theory is top down. Next to this main characteristic a difference in methods also can help to distinguish between the two.

4 The Homo Oeconomicus

After the detailed description of the concepts and framework that I am using for this master thesis, I focus now on the answering the actual research question and show how patriarchal structures are mirrored in the assumptions of the homo oeconomicus and how they are connected with neoclassical economics. As I show the existence of preferences and rationality are also used by heterodox economics but as this school of thought does not necessarily rely on methodological individualism, I understand them differently. Following, their implications in terms of power structures and gender equality are also different.

Economic models aim to describe the world. In order to do so economists need to include human beings into models as individuals are a part of the world and are responsible for what is happening on it. As neoclassical economics enables only an individualistic analysis, it is not able to display interpersonal relations and their influence on decision-making. If we think of goods markets, price and produces quantity are solely determined by supply and demand within this framework. According to the demand, entrepreneurs decide on the quantity they produce and ask for the market-clearing price. State or institutional regulation is not necessary as markets are able to function efficiently on their own, there is no concept of fairness and questions regarding the necessity of certain goods are neglected. As I discuss in the last chapter Akerlof and Yellen (1990) show that fairness might be also a considerable factor for wage determination. A neoclassical framework does not allow for such considerations.

The homo oeconomicus is one of the most important concepts in neoclassical economics and serves often as the explanation for the decisions made by individuals. The model thus, can be seen as the core of neoclassical economics (Maier, 1993, 558). From a feminist point of view it is important to understand what the assumptions made here mean and how human beings are modelled. It is possible to identify numerous bias in them. On the one hand, paid labour and budgetary matters are historically strongly connected to men and egoistic and utility maximizing behaviour is justified as they are *market participants*. On the other hand, women are responsible for care work and are expected to be altruistic (Michalitsch, 2000). As the human being in neoclassical economics is called the *economic* person, this can serve as a hint of unequal gender representation within the science.

The model itself has already been identified numerous times as problematic as it is being “criticized on both empirical and normative grounds” (Zsolnai, 2002, 2). Next to the below

analysis, I will present some outcomes from Game Theory in the last chapter that explicitly disprove the rationality assumption. Nevertheless, the homo oeconomicus is still used and is very prominent in economics classrooms. This might be due to the fact that this particular model is easy to include, whereas other models about human beings tend to be far more complex and more difficult to use, which again is not very surprising since human beings are in fact very complex and human behaviour is very hard to foresee. It serves as an idea of human's decisions and is an underlying assumption in a great number of economic models which include individuals in their analysis. Not to forget to mention that most economists take this particular view of the individuals as given, and do not elaborate on this further (Davis, 2011, 2). The simplicity of the homo oeconomicus can be easily seen, as I offer alternatives with far more complex utility function in the last chapter.

Decision-making of individuals is explained by the individual's private tastes and desires, and they are able to discriminate their options according to marginalist principles, which can also account for the determination of prices (Davis, 2011, 25f.). Nicholson and Snyder (2009, 3) state in the first pages of their textbook for microeconomic theory that "even though these models often make heroic abstractions from the complexities of the real world, they nonetheless capture essential features that are common to all economic activities". Furthermore the authors note:

"Although, as we will show, all these assumptions are unrealistic, and all have won widespread acceptance as good starting places for developing economic models. There seem to be two reasons for this acceptance. First, the optimization assumption is useful for generating precise, solvable models, primarily because such models can draw on a variety of mathematical techniques suitable for optimization problems. [...] A second reason for this popularity of optimization models concerns their apparent empirical validity, [...] [they] seem to be fairly good at explaining reality" Nicholson and Snyder (2009, 7).

It remains to be noted that the homo oeconomicus is not supposed to be a real person, rather it embodies some central assumptions about the decision-making and preferences of individuals. A central claim in mainstream behavioural analysis is the optimization assumption, which states that individuals always try to maximize their output and minimize their input. When testing this principle for compatibility with our personal lives, one quickly comes to the conclusion that human behaviour might not be solely explainable in this way (Starbatty, 1999, 2).

In microeconomics the behaviour of so-called economic agents is analysed or predicted; they

are usually classified in consumers or firms. In a very simplified version consumers are deciding on the goods and the amount they consume while firms decide on the combination of inputs and technology in order to produce goods. The goal of both groups is very different, consumers want to buy at the cheapest price and firms want to sell at the highest price, “[t]he classification of the set of economic agents into consumers and firms reflects the basic conceptual distinction between the activities of production and consumption” (Gravelle, 2004, 5). Since the distinction between producers and consumers tends to be difficult, the neoclassical doctrine states that consumers also are producers to a certain degree and vice versa. This happens to be especially useful when classifying time as a resource and explains why the consumption of certain goods is positively correlated with the income of individuals.

Although the model has been adapted by numerous economic scholars, the main assumption, namely the assumption of (1) rationality, remains the same (Hayden, 1988, 11). Furthermore, three other characteristics of our world are determined: (2) exogenous preferences, (3) symmetric information, and the existence of a (4) natural market equilibrium (Weber, 1994, 5).

The economic subject is seen as a separative individual; there is no space for interactions with other subjects in the model, such as the family or friends. The homo oeconomicus is therefore completely independent of others. Affiliations to social groups, classes or even races are not displayed in microeconomics (Michalitsch, 2000, 9f.). As a result of this there is little interest from neoclassical research concerning activities that do not take place in the capitalistic market system, which is characterised by a monetary component, where everything that has no attached value. As per this definition, unpaid care-work or natural resources are not part of the capitalistic market system. The segregation of the private and public sphere leads to neglecting and ignoring of unpaid work, such as household activities or unpaid care-work with children or elder people (Ortner, 2006, 26). The private sphere is being successfully excluded from most scientific researches and demonstrates sexism in economics (Rudolph, 1986, 135). Drivers such as well-being, the protection of the environment, sustainability, just to name a few, are not taken into account. The well-being of every individual is therefore solely determined by utility, which is mostly driven by consumptions and not by any interactions with other human beings (Michalitsch, 2002, 14).

The homo oeconomicus is in practice constructed as an autonomous individual, the importance of social relationships is neglected and their influence on the preferences of individuals minimized or faded-out. This is not gender biased per se but because the economy is shaped by such assumptions, the individuals, who are more similar to the homo oeconomicus get rewarded

(Seiz, 1992). In contrast to the theoretical neutrality of economic agents, the characteristics that determine them seem to be purely associated with men (Haidinger and Knittler, 2013, 60). It is not only a stereotype of men, but even more the stereotype of western, white men that serves as the general human being in economics (Habermann, 2010, 152).

Keeping in mind the doctrines of the First Wave Feminism, I want to point out that the problem mentioned above is two-fold. Firstly, the classification of male and female characteristics based on sex or gender is not appropriate. One can not assume that women are born more emotional, altruistic or dependent, whereas men are rational, independent and mathematically rigorous. According to Egalitarian Feminism the differences in preferences, which can be observed in reality, stem from socialization. Women are taught to rely on others and it is forbidden for men to show any emotions. Eventually these learned behaviours become reality and males become mathematicians and females nurses based on their preferences or talents. It is necessary to acknowledge that everyone is exposed to social norms and pressures and confronted with values on a daily basis. Secondly, male behaviour and attributes must not be seen as ideal. Women must not start ignoring their emotional side, much more the itemisation of characteristics must be abolished and the ancient model of egoistic economic agents should be replaced by “a conception of human behaviour that can encompass both autonomy and dependence, individuation and relation, reason and emotion, as they are manifested in economic agents of either sexes” (Nelson, 1995, 136).

Nicholson and Snyder (2009, 4) argue in a basic microeconomic textbook that:

“[the homo oeconomicus model] ignores the personal motivations of the firm’s managers and does not consider conflicts among them. It assumes that profits are the only relevant goal for the firm; other possible goals, such as obtaining power or prestige, are treated as unimportant”.

Although in theory there is the possibility of including other drivers, such as altruism, solidarity or fairness, into the utility function of individuals it turns out that most neoclassical literature “ignore[s] all motives other than narrow self-interest” (Robert Frank and Edward Cartwright, 2013, XXV). The well-being of every individual is therefore solely determined by utility, which is mostly driven by consumption and not by the interaction with other human beings (Michalitsch, 2002, 14). This fact also matches the methodological individualism approach mainly used in neoclassical economics. The existence of selfless, altruistic behaviour is mostly excluded from most mainstream analysis.

Feminist scholars refer to male bias in neoclassical economics, or engendering economics

when addressing the exclusion of female connected activities or personal traits. Habermann (2010, 153) shows up two ways of solving male biases within orthodox economics:

1. Women have to be recognized and accepted as *rational human beings*, this would make them part of the economic sphere but does not solve the inherent issues. The preference and higher valuing of *male* traits would remain highly problematic and also the focus on utility maximization as the only goal would remain unquestioned. Given that we already know that this is not the only motive behind human decision making the mentioned approach would not lead to a significant improvement in the explanatory power of economic models. Also, it would continue discriminating against people with different values.
2. A change of model assumptions and/or definitions, it appears that the understanding of rationality is very narrow. If the definition of it could be changed from purely selfish behaviour to something that includes emotions, caring about others and other values this would most likely lead to reducing the existing gender hierarchies.

Julie Nelson is supportive of the mentioned critique of the first possibility by stating that the “[h]omo oeconomicus may not be a good description of women, but neither is he a good description of men” (Nelson, 1995, 136). In her view including women in the analysis would not solve the biases in orthodox economics at all. Instead the author demands a completely different model (as mentioned in the second option). The homo oeconomicus is not able to represent human decision-making processes, whether man’s or woman’s. However, the model is very resilient to changes and is still widely accepted. Although numerous alternatives (of which I will discuss a few in the last chapter) have been developed, they are not finding their way into the undergraduate classes or mainstream economic research.

It remains to be stressed that neoclassical economics does not exclude women explicitly, in theory they are also assumed to be rational agents but empirical studies show that their decisions are less explainable by the assumption of selfishness. It is a form of indirect discrimination. According to it they should not be willing to sacrifice their careers in favour of unpaid care work, just to name one example. Of course, men’s decisions are also not well explainable but it is women who are on average more concerned with so-called altruism and the well-being of others according to their actions.

Rationality is not a new research topic and has been prominently discussed in the academic discourse. Especially throughout the last decades its meaning and understanding (and also the meaning of selfishness) has radically changed, at least in theory. One example, where this becomes visible is that the utility function is not limited to selfishness any more, anything

can become part of it and the definition of rationality is fulfilled as long as individuals act in accordance to their own utility function. One model which incorporates this has been developed by Amartya Sen, which will be discussed in the last section of this thesis. Furthermore, Robert Frank and Edward Cartwright (2013, 223ff.) illustrate these developments in their textbook by using examples such as voting, donating money, and concerns about fairness. If decisions to vote, donate or promote fairness are truly selfless is not the subject of my discussion here, nevertheless, one should ask herself how society reacts to such acts and keep this question in mind.

To facilitate the understanding of the above paragraph I will give an example: in accordance to the new developments in the understanding of rationality utility functions of individuals can contain parental leave once their children are born; parents might want to stay at home with the newborns because they want to build a strong relationship with the new family member, because they love it and want to take care of it, because society forces them to do so, or all of the mentioned reasons. Empirical evidence suggests that society reacts differently to family relations depending on the gender of the individuals. Two phenomena are found, the first one is the so-called *Motherhood Penalty*, and the other one is the so-called *Fatherhood Premium*. According to these, men receive a reward for having children and women are punished. These two effects contribute to the Family Wage Gaps¹².

Based on all of these arguments I believe that even within neoclassical economics, structures for Friederike Habermann's second option are sufficiently provided and are just waiting to be used. But this is not sufficient, the population has to start using the existing framework and most importantly a value shift is necessary. Younger generations of men tend to be more willing to spend time with their own children, conduct unpaid care work and even demand equality of sexes everything they do that is not stereotypically their responsibility, whereas society expects women to do everything at once, have a job and contribute to the family budget, take care of children and elder people and keep the house clean, just to name a few. We all have experienced situations where teachers and other mothers are extremely impressed if a father brings his

¹²In a study on the basis of the EU-Silc data Eva Cukrowska-Torzewska & Anna Lovasz have determined that in Western European countries, and thus also in Austria, the Gender Pay Gap is mostly driven by the fatherhood wage premium and gender wage gaps among childless women; thus the motherhood wage gap appears to be relatively small. The authors reason this be the family-friendly policies, which facilitate the combination of working and mothering. In contrast in CEE countries, except for Slovenia, the Motherhood penalty appears to be higher and plays a serves as an important explanatory variable for the overall Gender Pay Gap, this is reasoned by long lasting maternity leaves as the states explicitly support women as the primary care-givers for children. A third group in Europe are the Southern countries, where the Gender Pay Gap tends to be low due to the small percentage of working women, and the high positive fatherhood premium. Concluding, the motherhood penalty tends to be higher if states do not issue supportive policies for working mothers, on the contrary the fatherhood premium tends to be lower if such policies are widely implemented within the state (Cukrowska-Torzewska and Lovasz, 2016).

children once in a while to school. Instead of idolizing him we should be much more questioning why he only does it once a month and the mother the other nineteen times.

So although there has been some changes in the understanding of rationality and men and women are equal in theory, the changes in the understanding of it are not compatible with methodological individualism, which is an important characteristic of neoclassical economics. Within its framework an altruistic understanding of rationality does not work. Only by abolishing methodological individualism, others-regarding preferences can successfully enter utility functions. Concluding, emotionality and rationality might not be seen as opposite any more but the first is still clearly valued higher than the other and both are attached to a certain gender. The overcoming of the existent structures certainly takes time but can not happen when they are not recognised and their implications in other areas are neglected.

4.1 Uncovering neoclassical assumptions

The premise of methodological individualism in neoclassical economics is responsible for separative individuals and androcentric bias within its assumptions. In particular three biases can be identified, which result from this: the impossibility of interpersonal utility comparison, exogenous and unchangeable preferences, and selfish actors in markets, in the sense that they are concerned only with their own utility function (England, 1993). Neoclassical theory suggests that the latter assumption about selfish individuals is only valid in the market place as within their families, humans suddenly turn into altruists, as outlined by Gary Becker in his *Rotten Kid Theorem* (Becker, 1974).

The exacerbation of selfishness in the markets and the exacerbation of altruism within families both mirror patriarchal structures. The contrast between selfishness and altruism, which with depending on the sphere (public versus private) is being justified by neoclassical economics as summarizing all household members to one individual with a common utility function, instead of individual utilities for every family member (Hausman, 2008, 226). This method disables to see who is giving up his or her own utility for the well-being of other family members.

In the opinion of England (2003) the above mentioned assumptions qualify as androcentric since they are built on the existing suppressive patriarchal structure, which draws through most societies and they serve the interest of men since the unequal position of men and women within families and the labour market is disguised. In general she points to two important areas in feminist theory concerning economics: the exclusion of women of certain areas and the depreciation of work (paid and unpaid) that is typically performed by women or even its

exclusion from the economic sphere.

These problems are tackled by Friederike Habermann; she proposes two different ways of including women in the homo oeconomicus model. The first system is as a solution to the exclusion of women in her eyes and the second a solution to the hierarchy between or even dichotomous relationship between selfishness and altruism in economics. Nevertheless, attempts to do so have already been done and we are still confronted by a visible discrimination of women (as can be proven by numerous gender gaps, which are cited throughout this thesis). Therefore it seems to be crucial to stop treating the symptoms only but also understand the underlying issues and work towards a substantial solution for the unequal representation of men and women within the economic discipline.

Instead of questioning why women are more willing to sacrifice their own well-being for other individuals and what this means for the economy and society as a whole, utility functions are treated as black boxes, which content is revealed by choices of individuals (Kahneman and Thaler, 1991). If women decide to leave for maternity leave and therefore suffer from lower wages in the future this is legitimatised as clearly they must have preferences for spending time with their own children. So a revisited understanding of rationality found a new explanation for inequality instead of actually changing anything by departing from the self-interested standard of rationality (Robert Frank and Edward Cartwright, 2013). Once again this seems to be a very clever tactic as women become part of the model without and thereby unfairness and patriarchal structures are even justified *because women choose to do so*. One big issue, which can not be resolved due to technical restrictions is that the comparison of utility functions between individuals is impossible¹³. It would be a huge step forward if economic research could show the difference in average utilities based on various groups, such as men and women.

For further analysis it is necessary to specify the explicit assumptions on which the homo oeconomicus is based. I want to present the standard academic approach and therefore will use the below textbooks. Throughout the following chapters I will refer to them without further citations¹⁴:

- Gravelle, Hugh & Rees, Ray (2004): Microeconomics.
- Bofinger, Peter (2015): Grundzüge der Volkswirtschaftslehre. Eine Einführung in die Wirtschaft von Märkten.

¹³Although there are some attempts to do so, which can be often found under the buzzword cardinal utility and are typically done in game theory.

¹⁴I chose these particular textbooks since they served as a basis in my Bachelor's Degree in Economics at the Vienna University of Business and Economics in various classes, therefore I find them representative for teaching.

- Pindyck, Robert & Rubinfeld, Daniel (2009): Mikroökonomie.
- Snyder, Christopher & Nicholson, Walter (2009): Microeconomic Theory. Basic Principles and Extensions.

The main assumptions of the homo oeconomicus are that agents are rational, have exogenous preferences, have symmetric information and that natural market equilibria exist. These four premises enable economists to develop neat, more complex models as serve as a simplification of reality. A model is always a simplification of the real world but it is crucial to understand what impact is caused by doing so. We have to take this into account when interpreting results and critically assess if the results would be different without the assumptions. The models which are only valid with absurd and inaccurate assumptions are weak and sometimes even pointless.

Below I consider each of the assumptions individually, link them to inherent patriarchal structures and explicitly show how these structures are mirrored in them. Furthermore, I point to the limitations of the assumptions and why neoclassical boundaries do not allow their usage in a way that would be more inclusive for women.

4.1.1 Rationality

As Robert Frank and Edward Cartwright (2013) point out there are two different understandings of rationality within Economic Theory:

- the present-aim standard: this approach describes rational behaviour as such being efficient in the pursuit of whatever aims the individual has at the given moment; whether the aim itself is productive or self-destroying or whatever else it could be, is not central to the analysis.
- the self-interest standard: this approach assumes that the interest of individual's are congruent with their narrow material interest; activities such as anonymous donating would be classified as irrational as the only plausible reasons for donations are recognition within the community or bragging but both are not valid if nobody knows about them.

The two mentioned approaches are very different from each other, the first one is able to justify all sorts of behaviour if a valid reason for it is provided, whereas the second approach labels a huge amount of behaviour as irrational. In the past decades economics has experienced a paradigm shift. In its purest form the homo oeconomicus was supposed to represent selfishness and pure self-interested individuals (second approach). As an answer to a great amount of criticism, the assumption of rationality has been weakened. The present-aim standard has been

implemented instead of the self-interest standard. As numerous scholars have pointed out, the utility of a person can include other people's utility and therefore justify altruistic behaviour within this framework. It declares almost every behaviour to be rational since it can be justified by the black box of preferences. "Because [the approach] allows us to explain everything, we end up explaining nothing" (Robert Frank and Edward Cartwright, 2013, 222). The author also states that the present-aim standard enables a better understanding of human decision making therefore scholars weakened their initial egoistic assumption. Although nowadays most scientists agree that individuals are not purely selfish, the relaxed assumptions has not yet been translated to neoclassical economics. As I show altruism can not be implemented in neoclassical economics as preferences of individuals are limited to egoisms due to methodological individualism.

Another theory worth mentioning in this context is the theory of instrumentally rational individuals, which are described in the theory of choice. In it individuals decide for the set of actions which best satisfy the individual's needs, without paying attention to them or judging them. Human wants are hereby seen as objective functions by the current mainstream (Davis, 2011, 27). Deductively we can say that the current mainstream uses the present-aim standard in theory, this is possible as the mainstream is not restricted by methodological individualism (any more) and following can take interdependencies between human beings into account.

Depending on how time intense and satisfactory altruistic activities are, and therefore how much opportunity costs arise by performing them (as this time could be used to do paid work and finance consumption), the individual decides on the optimal choice on the allocation of his or her time on fulfilling paid or unpaid work (Robert Frank and Edward Cartwright, 2013).

In general, economics sees rationality as relying on four explanatory premises:

- The economic agent classifies all alternatives as feasible or not feasible, and rejects the second category in further decision taking activities.
- He or she is able to take into account whatever information is available and worth collecting to assess the consequences of his or her decisions, in economics this condition is called symmetric information. Where symmetric does not mean that all the information is available, it only describes a situation where all agents are confronted with the same level of certainty/uncertainty and no-one has an advantage (no insider information).
- He or she ranks all possible alternatives in order to the individual preferences, where the alternatives can be better, worse or indifferent to each other and have to fulfil the

conditions of completeness¹⁵, transitivity¹⁶, continuity¹⁷, and non-satiation¹⁸.

- He or she always chooses the alternative which is highest in his or her individual ordering.

The stated premises are independent of selfishness, without any limitations regarding individualism, rationality can therefore, be implemented in mainstream economics, with different effects on the representation of men and women. Akerlof and Yellen (1990), for instance, show that rational behaviour can be dependent on fairness considerations.

Rationality enables the implementation of the utility concept, which states that economic agents are able to rank all possibilities in the order of their desire and attach a mathematical value to it, which is expressed by the utility function. Utility functions of different individuals are not comparable to each other, thus one cannot assess if individual a has more utility than individual b and compare their well-beings. It is also impossible to examine how much additional utility a certain outcome produces than a different one, in the sense of comparing them numerically. It is only possible to state that one allocation of goods is better than a different one without taking into account if it is slightly better or 100 times better because utilities in neoclassical economics lack a scale (which also has implications for the comparison of the overall well-being between men and women).

Utility of an individual j can be denoted as following:

$$Utility = U_j(x_1, x_2, \dots, x_n) \quad (4.1)$$

Where x can describe goods, services, time, friendships or many other variables. In theory it can even denote the joy that parents have when their child masters his or her first steps.

“One need not take on position on whether [...] activities are selfish or selfless because economists doubt people would undertake them if they were against their own best interest, broadly conceived” (Nicholson and Snyder, 2009, 110).

¹⁵The property of completeness means that agents can rank all available outcomes in either, preferred, not preferred or indifferent. Given the assumption that only two goods, A and B, are available, the individual can decide if: “A is preferred to B”, “B is preferred to A” or “A and B are substitutes and equally preferable”. Though it is not possible to choose two of the above mentioned statements. In addition, it is assumed that individuals are always able to make a decision.

¹⁶When expanding the above mentioned model to three goods, A, B and C, transitivity, also referred to as consistency, states that if A is more preferred than B and B is more preferred to C, A has to be consequently more preferred than C.

¹⁷Continuity states that outcomes similar to each other have to be evaluated similarly.

¹⁸Non-satiation describes the phenomenon that consumers are never satisfied with the amount of goods they have but always strive for more, this implies that there is no such thing as *bads*, namely goods that are bad, e.g. pollution.

As Nicholson and Snyder (2009) point out, neoclassical economics positions itself as value free and not interested in the distinction between selfish and altruistic behaviour, the authors refer to the present-aim standard of economics. Although I argue that altruistic behaviour can not be assumed within the neoclassical framework, I discuss two possibilities that are discussed in the literature. The first one would be the inclusion of the utility function of somebody else, which is contrary to methodological individualism and therefore can not be done in neoclassical economics. And the second would be the inclusion of specific variables, such as donating money, for instance, which ultimately must be classified as selfish as well because the individuals gains utility from this but follows the present-aim standard and not the self-interest standard¹⁹.

Altruism can be included into the utility function of an individual by adding the utility of a different individual into the first one. Therefore the person is not independent any more on others and automatically hierarchies and other structures of power are significant for the utility of the individual (England, 2003). Below I contrast the utility function of an egoistic individual and an altruistic, as per the first possibility of including altruistic preferences.

A strongly simplified utility function of a selfish individual e can take this form:

$$U_e = U_e(c, l) \tag{4.2}$$

Where U denotes the overall utility, which is a function of c , the overall consumption, and l leisure time. One can see that the overall utility, well-being or happiness, if one wants to call it that way, is a function of consumption and leisure time. No other variables would matter in this case to the agent. Depending on how exactly the function looks like (the slope indicates the marginal rate of substitution, which determines how much of one good the individual is willing to give up in order to increase leisure at a specific point on the utility curve) the individual will be willing to work more (less) at the expense of leisure in order to increase (decrease) consumption. As he or she has to work to finance his or her consumption.

The graph 4.1 is an illustration of a preference curve based on such a utility function; the y-axis determines the level of consumption and the x-axis the level of leisure. The utility function describes the relationship between the two variables for the individual, every point on the utility curve has the same level of utility, so the points A and B denote the same level of happiness for e and indicate how much leisure he or she is willing to give up for additional consumption.

Women are often connected with altruistic behaviour. One method of including altruism into

¹⁹A discussion of the presumable possibility of including altruism in the economic discourse can be found in Tietzel (1981).

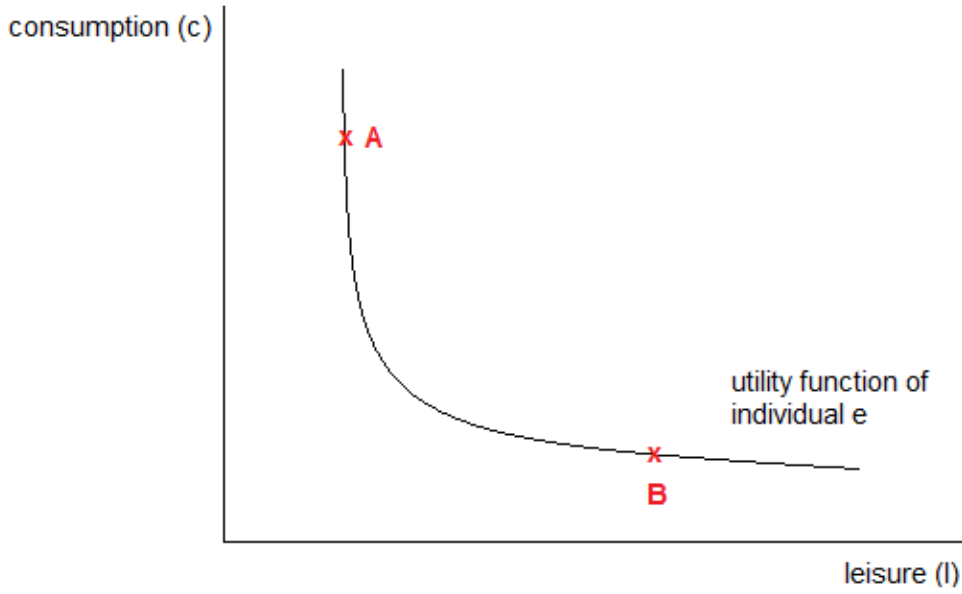


Figure 4.1: The utility curve of an egoistic individual

the utility function indicated by the literature is to include the utility of a different individual into the utility function of somebody else. In a simplified version this would lead to the following utility function of an altruistic individual a :

$$U_a = f(c, U_e) \quad (4.3)$$

Instead of valuing leisure time this person values the utility of e , the egoistic individual discussed above. This utility is also easy to represent in form of a graph as it still only includes two variables.

Now the variable that determines the x-axis is the utility of the egoist agent and the altruist is willing to give up some of his or her own consumption to make the egoist happier as this also leads to an increase in the well-being of the altruist.

Neoclassical economics relies on the assumption of methodological individualism, which from my perspective, does not allow examinations of structures and interdependencies between individuals (Hodgson, 2007). Following, it is not possible to acknowledge that other individuals can influence the well-being of a person within the neoclassical framework. Although it might be true that rationality is not limited to selfishness in neoclassical economics any more, it is not possible to include any others-related variables into the utility function of an individuals because of the research methodology.

Also, interpersonal comparisons of utilities are impossible since they have no scale as I

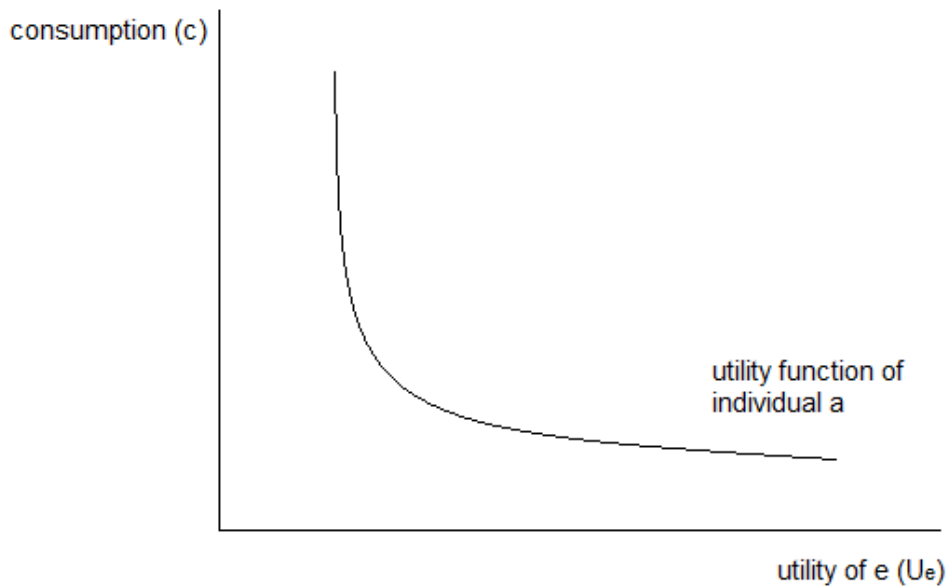


Figure 4.2: The utility curve of an altruistic individual

established before. It follows naturally that including the utility of somebody else into somebody's utility is therefore impossible. Agent a could not determine how many units of time or goods he or she is willing to sacrifice for the good of the different person as he or she can not know how much this means to e . As it is also not possible to insert somebody's else utility as an exogenous variable because the value attached to it has no meaning for anybody other than the person whose utility function it is, this would simply lead to biased results. The marginal rate of substitution determines the optimal allocation, which is necessary for finding the equilibrium. If we implement the utility of e into a 's utility, the marginal rate of substitution would be a biased number and lead to wrong results. The only possibility which therefore, remains is to include altruism as such, as mentioned in the previous section in form of specific variables as volunteering, for instance.

Kirchgässner (2014) states that the “motivational assumption might range from benevolent, altruistic behaviour to malevolent, extremely egoistic behaviour and even to behaviour with the intent to harm others” (Kirchgässner, 2014, 1192). Although self-interest is the most common assumed motivation in economics, further he notes that: “self-interest is not generally valid; people behave — at least in some situations — also other-regardingly” (Kirchgässner, 2014, 1193). In neoclassical economic theory, preferences are exogenous and even more importantly unknown.

“[T]he economic approach I refer to does not assume that individuals are motivated

solely by selfishness or material gain. It is a method of analysis, not an assumption about particular motivations. Along with other, I have tried to pry economists away from narrow assumptions about self-interest. Behaviour is driven by a much richer set of values and preferences” (Becker, 1993, 385).

The above described approach appears to be very simplistic, the motives behind human decision-making remain unquestioned and seem to be even uninteresting. Neglecting differences between preferences of individuals, makes it impossible to recognize the structures that are represented in the choices made by human beings. It even releases the economic discipline from the burden of having to account for inequality and unfairness within the world, as it makes individuals completely self responsible for the outcomes they receive. As no comparison between individuals is possible, it furthermore ignores the possibility that some people are worse off than others. But economics, or political economy, is a science which should also be concerned with the allocation of resources and the distribution of power.

The decision made by individuals, for instance, the ratio between working hours and leisure time is not only determined by utility function but also by the so-called budget constraint. Every economic agent has an infinite number of utility curves, which are also called indifference curves, where each and every point on each on every curve represent the different possible combinations between the significant variables, which are part of the utility function. All the points at one curve lead to the same utility, the individual is indifferent between the combinations. The reaching of a higher utility curve implies higher well-being. Utility maximizing behaviour describes the choice of the specific combination of utility determining factors, that lead to the intersection of the budget constraint and the highest utility curve. Point M in graph 4.3 represents this intersection of the budget constraint and the utility curve, where the marginal rate of substitutions equals the price relation of the goods. Utility function is the highest level of well-being that the individual can obtain given his or her budget constraint.

The goal of economic agent is thus, to reach the highest indifferent curve which intersects with the budget constraint in order to maximize utility. The budget constraint shows all the possible combinations of the factors that drive utility and is determined by the prices of consumption.

“[T]he utility-maximization model predicts many aspects of behaviour even though no one carries around a computer with his or her utility function programmed into it. To be precise, economists assume that people behave as if they made such calculations; thus, the complaint that the calculations cannot possibly be made is largely irrelevant” (Nicholson and Snyder, 2009, 109).

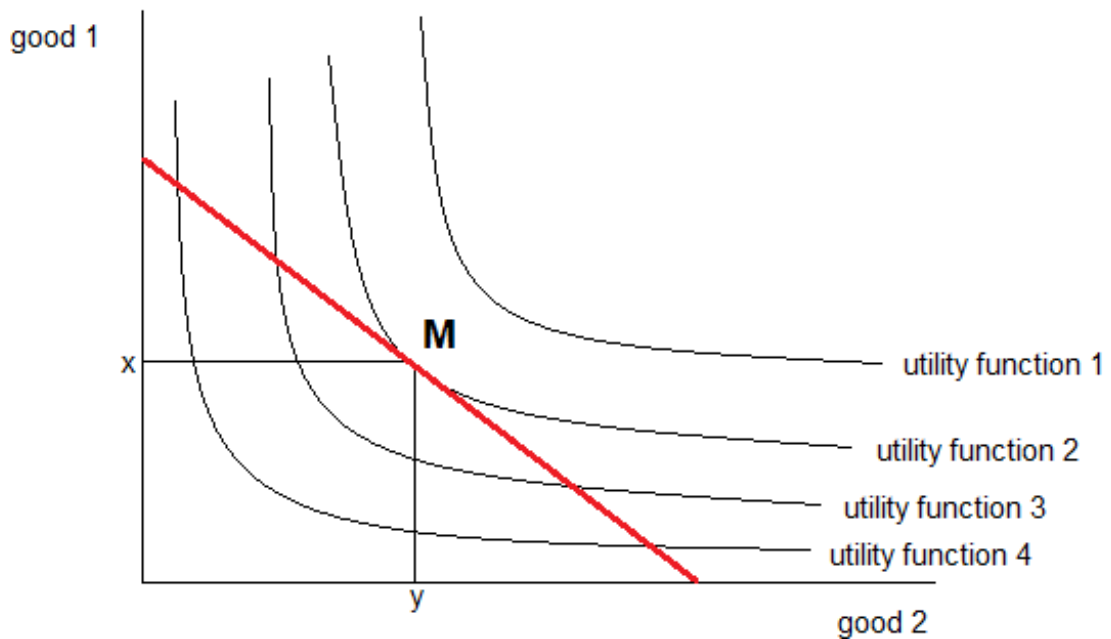


Figure 4.3: The intersection of the budget constraint and the utility curves

The concept of rationality remains crucial since without it predictions on the decisions of individuals would become impossible, however, the definition of rationality can be modified and the assumption of symmetric information can be rejected (this will be covered in detail in the subsection on symmetric information) (Elsner, 2012, 46). It is true that rationality can be modified but not in a neoclassical framework, as I state above.

Summarizing, one can say that rational behaviour leads to utility maximizing in neoclassical theory. The utilities of individuals are not comparable to each other since they do not have an implemented scale and the number attached to certain utility levels, which can easily be assessed by mathematical methods is only significant for interpersonal utility comparison.

It seems that rationality as such is not problematic. It makes sense that economic agents decide based on their values and preferences. This also does not include anybody from the economic sphere. The problem with rationality is that it is constrained by methodological individualism, which makes the implementation of pure altruistic behaviour impossible. Although as I show earlier variables such as donations and volunteering can be included it does not change the fact that agents behave this way because they are ultimately happier, so the choices can be labelled as selfish. Rationality in neoclassical and mainstream models differs significantly, as it is constrained to an individualistic perspective in the first. Patriarchal structures are mirrored in neoclassical models through the assumption of rationality but do not have to be mirrored in the mainstream (although it is still possible). Sen (1977) describes the misunderstanding of

rationality and its reduction to selfishness in a paper that is summarised in the last section of this thesis.

The distinction between egoistic and altruistic behaviour plays a significant role in both assumptions and is therefore represented in both sections. In the section about economics, I already say that exogenous preferences are linked to rationality and can be seen as its basis. Rationality must be understood as decisions that are based on these preferences. Through their exogeneity and methodological individualism, human beings are modelled as fully independent of external influences, neoclassical economics assumes that individuals are following their preferences and therefore takes away responsibility from politics or from other institutions for the well-being of individuals.

4.1.2 Exogenous Preferences

Assuming selfishness might lead to gender biased results and mirrors patriarchal structures within neoclassical models. One way of softening this and making results more accurate and representative of both genders, men and women, could be the inclusion of altruism. The incorporation of other's utility functions is not possible, as I establish.

If selfishness is assumed this leads to gender biased results. The question here is how altruism can be included within the neoclassical framework. Consequently, I am pointing again to the fact that rationality is not excluded in heterodox economics but as neoclassical economics relies on the axiom of methodological individualism it excludes altruism. Since I discuss here preferences, it is beneficial to elaborate why women's preferences seem to be more altruistic than men's on average.

Care-work responsibilities have found their way into the paid labour market, however, there appears to be a certain resilience when it comes to transferring all care-work activities from to household to the market; this is grounded on the assumption that individuals are selfish in markets whereas they behave altruistically in families (Becker, 1974). If care-work becomes paid work its nature would probably change; the motive for performing it could shift from love to money and the activities would become more efficient while neglecting the central social component of them, which is needed in care-work as children tend to develop better and sick people tend to rehabilitate quicker when exposed to caring people (Folbre and Nelson, 2000).

Assuming that the homo oeconomicus is selfish in the market sphere leads us to the result that unpaid care-work should be performed within families in order to guarantee the quality of it. Empirically the greater part of it is done by women, a survey conducted in Austria in 2008/09

suggests that women spend on average 15 hours more per week than men doing unpaid work (Statistik Austria, 2009). If the utility functions in economic models, which are used for policy decisions, exclude altruism, the results might show that care-work should not be outsourced to the market and women the work load of women will not be minimized and the working hours of paid and unpaid work of women will remain higher than the working hours of men.

In the opinion of England (2003) paid and unpaid care-work are dependent on altruism as a reward for such behaviour because of the low (or even missing) wage. I show how this low wages results from the assumption of natural market equilibria in the next section. The dichotomy between money and love is therefore falsified and both factors can be seen as complementary.

We have already seen the typical form of utility functions but this time I want to replace the x s with other variables to facilitate the understanding of the function for the reader.

$$Utility = U_j(c, r) \quad (4.4)$$

Again we are looking at the utility of individual j , which is dependent on consumption c and recognition within the society r . The need of consumption can be fulfilled by working, therefore earning money and ultimately buying good. Recognition within the society can be satisfied by donations (which have to be financed by more paid work) or by time. In this case the individual will decide on the optimal allocation depending on the prices of both and how much one unit of each will contribute to the well being.

Let us assume that the utility function looks like this:

$$U_j = (c^2 + \frac{r^2}{2}) \quad (4.5)$$

Both variables are additive and have different indices, so the individual values them in a different way, if consumption and recognition would have the same price per unit, j would only buy goods as it contributes more to the well-being.

Next I will define prices; one unit of consumption costs 5 money units and recognition can be obtained by 1 money unit, $p_c = 5$ and $p_r = 1$. J possesses 100 money units, $m = 100$, which defines budget constraint.

The agent wants to maximize his or her utility, through maximizing c and j , given the budget constraint:

$$\max u(c, j) \text{ s.t. } p_c * c + p_r * r \leq m \quad (4.6)$$

In order to solve the maximization model we need to build the Lagrangian function and

determine first order conditions.

$$\mathcal{L} = u(c, j) + \lambda(m - p_c * c - p_r * r) \quad (4.7)$$

Using our agent specific utility function and budget constraint we get:

$$\mathcal{L} = c^2 + \frac{r^2}{2} + \lambda(100 - 5 * c - 1 * r) \quad (4.8)$$

The first order conditions for the Lagrangian function are:

$$\begin{cases} \frac{\partial \mathcal{L}_t}{\partial c} - \lambda * p_c = 0 \\ \frac{\partial \mathcal{L}_t}{\partial r} - \lambda * p_r = 0 \\ m - p_c * c - p_r * r = 0 \end{cases} \quad (4.9)$$

$$\begin{cases} 2c - \lambda * 5 = 0 \\ \frac{1}{2}r - \lambda = 0 \\ 100 = 5 * c + 1 * r \end{cases} \quad (4.10)$$

Solving the first two equations for λ gives us the marginal rate of substitution which is $r = 0.8c$ and inserting this into the budget constraint and solving for c and r enables us to derive to $c = 17.24$ and $r = 13.8$.

This means that the individual will spend his or her budget on 17.24 units of consumption and 13.8 units of a good that will lead to a higher recognition within the society.

The above exercise is a typical example of a consumer problem in microeconomic theory. Decision based on it can be identified as rational, based on the predominant narrative in neo-classical theory.

The earlier mentioned critique on the impossibility of utility comparisons is exemplified here. Based on the Gender Pay Gap (Weichselbaumer and Winter-Ebmer, 2005) and the Gender Wealth Gap (Sierminska, Frick and Grabka, 2010), I conclude that there is a substantial difference in disposable income between men and women. Since the utility functions, which are assumed in neoclassical literature are (mostly) based on leisure time and consumption, the utility level of women or the overall well-being must be considerably lower as women on average will have to work more due to lower labour and capital income and still will be able to consume less. The example I state above is different as also recognition places a significant role in the well-being of individuals. Within this framework it is rational for an individual to spend poten-

tial working hours with unpaid labour if this will increase his or her degree of recognition within society. The inequality between sexes is hidden here, as it seems that everyone has the same chances but the outcomes for men and women will differ in a substantial manner. Even more, as the neoclassical branch of economics does not recognise other variables than consumption and leisure in utility functions, individuals, which value other variables highly are not represented by these models.

I want to stress that assumptions about preferences shape the variables that are included in utility functions significantly and are typically assumed to be exogenous. In order to determine inequality in starting conditions and in outcomes based on structural imbalances, it is necessary to examine preferences first. The assumption of exogenous preferences means that they are not subject to explanation or analysis. They are treated as variables outside of the model, which can not be influences and are given. (Fellner, 2014) In order to assess the differences in utility functions of individuals we have to break the above stated exogeneity and think about ways to make preferences more realistic and what variables to include to make them represent women as well. Davis (2011) argues that preferences have been progressively emptied of individual subjectivity over the course of time in order to establish a strong explanatory power and move towards an ordinalist analysis of individual choices. The neoclassical framework requires preferences to be objective and independent of other individuals as it relies on methodological individualism. By assuming preferences to be others-regarding their explanatory power diminishes and they can not serve as an explanation for human decision-making as they currently do (Davis, 2011, 30f.). Moreover, actions of economic agents are seen as solely based on their preferences. The can only be measured by actions, but this does not prove that the actions are based on preferences, this will always remain an assumption. As preferences remain a black box they also do not conflict with actions. The circumstance remains a vicious circle, especially because individuals are not able to verify that they act according to their preferences and furthermore, are not able to quantify them, as it is done in economics.

If assuming that neoclassical economics is right in its assumption about the existence and power of preferences, we can deduct from this that preferences differ strongly among individuals and cultures. Otherwise how could we explain that some people value humanitarian work, their family, money, work, education, travelling or whatever other variable much higher then the others and others do not.

Also, it follows naturally that women prefer, even actively choose, to do more unpaid care-work since this is what we can observe within societies²⁰ but the question remains why should

²⁰According to a time allocation study conducted by Statistik Austria in 2008 and 2009 in Austria females

women be willing to sacrifice their well-being for someone else and men not although neoclassical economics states that preferences are very similar among individuals. The dominant narrative in neoclassical economics, where individuals act according to their preferences leads to the assumption that preferences can be observed by decisions of agents. Based on this premise women choose to earn less, as they choose to work in sectors, where the average wage is lower, choose to work part time more often and negotiate their salaries less often (Geisberger and Glaser, 2014). There are certain mechanisms behind the decisions of individuals that go beyond the free will, our values and needs are shaped by people who surround us. As the First Wave Feminism claims the societal structure and societal norms disadvantage women on average and not biological differences. The assumption of external preferences makes economic agents self responsible for their well-being and releases economics from responsibility and accountability for unequal outcomes. It is a modern camouflage technique, in order to show how it works I first want to differentiate between presumably male and female utility functions. Whatever the reason for this is, it is surely not assessable within the standard neoclassical preference framework, either because the significant variables are not included or because they can not be included. An alternative explanation might be that choices of individuals are also influenced by societal norms and not only preferences. In a patriarchal society women will then be forced to perform more unpaid work without any recognition for it.

Simplified utility functions of men and women might look the following based on the empirical finding that women on average spend more time with unpaid care-work (Statistik Austria, 2009):

$$U_w = f(c, p) \tag{4.11}$$

$$U_m = f(c, l) \tag{4.12}$$

In the first equation U_w denotes a utility function of a woman, which is dependent on c consumption and p parenting, so the women will be able to increase her utility, her well-being, by being a *better* mother and be consuming more, whereas the utility function of a man U_m is a function of consumption and leisure time l . So he will aim to increase his level of free time

older than 10 spend on average 32.1 hours per week performing unpaid work whereas men use 17.6 hours per week for tasks that include housework, child care, elder care and volunteering. This numbers replicate themselves when taking only working individuals into account, where women spend on average 39.0 and men 48.2 hours per week with paid work and 27.0 hours of the unpaid work is done by women versus 16.1 by men. As we can see although the working hours differ only by 9.2 hours on average, the difference in care-work is 10.9 hours per week on average. All in all women report a weekly schedule of 194.6 hours and men 183.6, although a week only has 168 hours (Endbericht der Statistik Austria Zeitverwendung 2008/09).

and of consumption. Let us assume that this is a couple, according to their utility function the father would not spend any time with their children, but rather devote his time to working in a paid job or spend it with free time activities, such as reading, travelling, doing sports or others. On the contrary, the mother will not aim for free time, she will work as well in a paid job but devote her free time to her children. Both will look for the optimal relation between paid work and free time according to their function and to prices of goods.

The extreme difference between the preferences of men and women, facilitates the conclusion I would like to draw here. Given the fact that it is a well-established that leaving the workforce for maternity leave will most likely lead to financial disadvantages and a lower probability of promotions (Correll, Benard and Paik, 2007) does apparently not discourage women from doing so as only around 5% of fathers decide to leave their job for paternity leave in Austria based on data from 2014 (Mikats, 2014). Neoclassical theory states that economic agents have similar preferences, so it is contradictory in itself as agents should then behave in a very similar way, which is not the case. In addition, mainstream models do not take variables such as parenting into account, as I have established already before. We can not explain the decision making of individuals based on the adjustments that are needed for the theories to work, where the uniformity and simplicity are the two most important needs.

What I have shown here is an example of the misuse of neoclassical economics in order to prove that the existing structures of power are grounded on people's choices. Next to this first conclusion, this example also enables to show again how individuals are made self responsible for their well-being. The recognition of the social constructions between one's preferences is a major harassment for patriarchy since it challenges the assumption of sameness among market participants and equal access to resources (Michalitsch, 2002, 14). Preferences can only start being investigated by admitting that they are not shown in decisions, instead it has to be acknowledged that decisions are based on external circumstances or result from a bargain with other members of society. Depending on factors some individuals have more decision power over their lives than others.

If the exogeneity of preferences is rejected, they are dependent on the environment and might change over time. Bisin and Verdier (2001) show that heterogeneity of preferences over the world can result from their endogenous cultural transmission from older to younger generations.

Modern multiple period mainstream models use parameter variables to indicate the change of preferences over time, but this only accounts for changes in the degree not substantial shifts in tastes of individuals. Also, the change is already anticipated. One example of such a utility

function can be found in the overlapping generations model with two periods of time designed by Peter Diamond (1965):

$$U_t = \frac{C_{1t}^{1-\theta}}{1-\theta} + \frac{1}{1+\rho} \frac{C_{2t+1}^{1-\theta}}{1-\theta} \quad (4.13)$$

Where θ is the rate of marginal utility and ρ indicates the time preference of the individual. Following, the overall utility of this individual is dependent on the consumption in period 1 and 2, where the value of ρ will indicate how much consumption he or she is willing to give up in the first period in order to increase the consumption in the second period. If $\rho = -1$ the individual would be indifferent between consuming in both periods. (Diamond, 1965) In this sense, the parameter variables do not account for influences on the utility of individuals.

Daily interactions with other individuals influence the well-being of individuals, a dinner at a restaurant will most likely be higher valued when consumed in good company, friendships with colleagues at work might compensate for relatively a low wages and so forth. “One needs to assume a misleading degree of emotional separation and atomism to deny the possibility of these effects of market exchanges upon tastes” (England, 1993, 44). Neoclassical economics assumes such a degree of separation by relying on exogenous preferences.

Moving on, the choices of different individuals appear to be very different, it does not make any sense in my opinion to continue assuming that preferences are similar, again it is only a simplification, which only takes a certain type of people into account, namely white western men.

Neglecting this for the moment one can identify here again a very sophisticated strategy of neoclassical theory for not having to deal with the inequality between men and women. Simply be assuming preferences as naturally given, research questions about the socialisation of human beings cannot arise. In addition, this assumption makes it possible to exclude any manipulation of individuals or power dependencies and therefore explains human behaviour and changes in it solely by changes in the prices of goods, wages or other capitalistic factors while neglecting the patriarchal structures within societies (Fellner, 2014, 13f.).

I argue, that women are forced to do more unpaid work due to patriarchal structures, which surround us and are also mirrored in the *homo oeconomicus* as the model neglects that the society might have any influence on social structures. Exogenous preferences serve as an entrance point for gender stereotypes into the economic analysis, utility maximization under rationality enables researches not to question the existing structures of power, norms, and interdependencies between individuals and as a conclusion can serve as a confirmation of hegemonic gender relations (Michalitsch, 2002, 13).

Hartmann (1981) points out that the distribution of housework between men and women is able to reflect power relations within household; she summarizes a number of studies conducted in the USA which all show that women on average work more hours per week, regardless if they have a paid job as well or not. Consequently, women suffer from patriarchal structures, without even noticing it.

Becker (1993) even goes further and states that women (should) choose to stay at home and conduct unpaid work, since this division of labour within a household is most efficient. He justifies this by saying that women already have a biological disadvantage on the paid labour market since there exists a possibility that they will be pregnant one day and therefore will have to step out of their paid jobs anyway for a certain period of time. Although he was one of the first economist who even brought the private sphere into economic analysis, he is criticized strongly for his views from feminist scholars. He himself describes his analysis as “the economic approach” on how “the family interprets marriage, divorce, fertility, and relations among family members through the lens of utility-maximizing, forward-looking behaviour” (Becker, 1993, XX). He further sums up that investments in human capital, such as education or on the job trainings are less efficient when invested in women, since they will not work as much as men and declares the gender pay gap therefore as rational (Becker, 1993, 394).

I will not argue if the division of labour is efficient or not, as this is not the right space for this but it is necessary to point out that this is pure sexism, women drop out of the workforce because of constructed norms and because they are taught and it is expected from them to be the primary care-giver to children. Furthermore, work places are designed in such a way that they are often not compatible with children, thereby favouring employees without children. Through elaborating on this biological distinction between men and women he justifies the hegemonic norms in the society but completely ignores that social constructions of gender also have a huge stake in the behaviour of individuals. The oppression and discrimination of women on the paid labour market and following also patriarchal structures are therefore justified and legitimised. Every human being should have the choice to do whatever he or she wants, not only women are disadvantaged by such a view but also men who want to spend time with their children or who want to take the role as the primary care-giver might struggle due to patriarchal, social and institutional norms. Concluding, it should be also pointed out that the author assumes a heteronormative nuclear family, whereas almost half of the children nowadays grow up with divorced parents and new family norms are more frequent than ever (Eurostat, 2015).

So even if, and I want to emphasize here that I strongly disagree with Gary Becker, one

decides that his ideas make a lot of sense, one has to ask himself or herself how many people live in circumstances as the ones he describes. Firstly, Austria allows for same-sex couples, who decides then which part of the couple is discriminated on the labour market and thus stays at home? What if in a different-sex relationship the woman earns more money, then she certainly should do the paid work and the men a bigger spare of the unpaid work, or even all of it but then the division of investment in the human capital of the man and woman was wrong, what should be done about this? What if a women is not able to give birth, will she then not be discriminated or receive higher investments in her human capital? What happens to the people who live a single life? As one can see a lot of questions remain unanswered.

Family as a concept is patriarchal, women are compelled to do care work. The link between the private sphere and nature legitimises male domination over women's labour (Rudolph, 1986, 137). Marriage seems to be the justification of patriarchy within Western society. As I have pointed out in the section about patriarchy it is important to understand how this concept interferes with our everyday life and how it influences our daily behaviour and decisions.

Theoretical approaches, which recognise the division of labour between sexes would therefore be able to display the reality better, additionally, they would enhance the same opportunities for men and women. Unfortunately, they are no alternative in neoclassical theories (Rudolph, 1986, 141).

The model of human behaviour – the homo oeconomicus — is designed to explain and predict decision-making processes of individuals. In contrast, exogenous preferences are not subject of economic analysis in neoclassical economics as they are subjective, so if human behaviour is explained by rationality which again is determined by the individual preferences how can decisions be explained? Following, this idea how can something that is not subject to economics deliver an accurate answer to economic problems. If we state this mathematically this would mean that:

$$b_j = f(r(p_j)) \tag{4.14}$$

Where b_j describes the behaviour – the choices – of an individual j , which are dependant on rationality r , which again is dependent of the p_j , the preferences of the same individual. Following, economists who use the neoclassical approach to answer questions on decision making by assuming the homo oeconomicus are interested in the behaviour of individuals and explain it through their preferences, which are not questioned but assumed as being externally given. As I will show later, among others Amartya Sen (1977), states that the choices which are made by

individuals do not have to reflect their preferences, since their behaviour can not be explained by preferences solely but also is dependent on other factors. By neglecting this economist predict wrong choices of individuals in most cases. Preferences are not only externally given but also unknown as I emphasise earlier. So only by looking at the above equation it should already become clear that we are not able to say anything about the decisions of individuals because the variable that determines the function is unknown and can not be computed. This is the reason why decision-making is mostly determined by consumption and leisure time as the only factors in neoclassical theory.

Coming back to the discussion of egoistic and altruistic preferences Robert Frank and Edward Cartwright (2013, 230) distinguish between simple preferences and strategic preferences, where strategic ones are dependent on other individuals. As already stated their existence is not contradictory to methodological individualism, which is a premise for the classification of economic analysis as neoclassical, since even with strategic preferences the studied object is the individual. If his or her choices are dependant on a change of price or a change of the relationship between him or her and somebody else, this does not have a huge impact on the research method. But still the author does not show how strategic can be incorporated into utility functions.

Denying the endogeneity of tastes and preferences obscures some of the processes that enforce gender inequality, tastes are affected for instance by discrimination. Tastes adopt to situations – thus when girls are raised in with a clear distinction of what is manly and what is womanly their tastes changes according to the stereotypes, the same happens to boys. “The family is seen to form our preferences when we are young, and family members are seen to share money and care for each other, with little regard to narrow self-interest” (England, 2003, 33). Paula England here again refers to the dichotomy which is inherent in economics, the market’s connection with selfishness and family’s with altruism, leading to the exclusion of women from the economic sphere.

Again Gary Becker’s theory of the household is a typical example for gender biases in neoclassical theory; in which the man is seen as the reflection of the homo oeconomicus, whereas the woman tend to work only until they get married and later rely on their husbands in monetary terms. In return women become altruistic individuals that take care of the household and possible children. As a consequence the labour market value of women decreases and investments in human capital, such as education become inefficient (Michalitsch, 2000).

If preferences are not revealed by actions then bargaining also might have a significant

impact on actions. So the decisions of individuals will be also shaped by their bargaining power; if we assume that Gary Becker's theory holds then families will be less willing to invest into the education of girls, which will leave them with less bargaining power as education is often connected to a higher wage. Concluding, the patriarchal structures becomes some kind of self fulfilling prophecy as women earn less (on average) and therefore their incentive to not enter the paid workforce or work less is higher when a family compared to men.

Only by making preferences endogenous and pointing to what led to the development of bargaining power this can become central to economic analysis. The real preferences and not only the decisions which are supposedly based on them might not be revealed through economics which centers around mathematics solely, a method mix, including qualitative interviews, might deliver some highly interesting and precious insights into the individual's decision making process (but again this seems to be an almost impossible task as agents might not know their preferences and will not be able to quantify them on a large scale). Nevertheless, attempts to do so have already penetrated the economic discipline and as a result Behavioural Economics evolved. Instead of trying to improve the *homo oeconomicus*, it might be better to understand that it can never be more than an indication for certain circumstances. An analysis based on this might be useful in assessing if individuals want to buy more of a certain product but it can not or other simple decision but it can not serve as an overall explanation of human behaviour.

In the last paragraphs of this section, I want to emphasize the meaning of choice possibilities. Even if it is true that men and women can choose freely according to their preferences, this does not mean that men and women have the same possibility sets, or that they receive the same outcome from choice, what makes them less or more attractive (one just needs to recall the motherhood penalty and fatherhood premium). Going back to the example of unpaid care-work it is easy to determine who will stay home if a couple decides to split the responsibilities, so that one pursues paid labour solely and the other only unpaid labour. Most likely the couple will decide that the one who receives the higher wage will continue working on the paid market whereas the other stays at home. As one can see here, both might have the same possibility set, as doing labour work or care-work, but the pay-offs differ and therefore limit the theoretical possibility set to only one feasible alternative for women.

England (1993, 2003) states in her work that the impossibility of utility comparison comes from the separative assumption in the *homo oeconomicus* model, the impossibility of experiencing empathy makes it more difficult since the imagining of how one would feel in the position of a different person facilitates comparing utilities. Additionally, if the model allowed for empathy,

scholars would also be able to determine cardinal utility levels and therefore compare the utility of different individuals. As I show the model, and its assumptions do not per se exclude the individual's ability for empathy. Rather neoclassical economics does. Rationality is value-free and does not exclude empathy and sympathy.

A distribution of goods is regarded as pareto optimal if no individual can gain utility without the other(s) being worse off. As interpersonal comparison is impossible it also can not be derived if the gains in utility surpass the losses in utility of the other individual if the distribution is different. This leads to two insights. Firstly, individuals do not want to give up any of their utility for others, unless their utility functions include such a variable, and secondly, state interventions lead to inefficient outcomes since they change the distribution. The above state principle also applies to groups (England, 1993). Consequently, according to the neoclassical doctrine, one can conclude that if wealth is distributed unequally among women and men, with men being much more wealthier, as I have stated elsewhere, nothing should be done about it. If the state would decide to implement measures in order to maximize the utility of all individuals, this is not possible due to the impossibility of interpersonal utility comparison. "The paradigm [impossibility of interpersonal utility comparisons] also implies that virtually all collectivistic redistribution is non-Pareto-optimal" (England, 2003, 41). This outcome of an analysis is only possible if we assume preferences as given and not influenced by society. Therefore once again it is crucial to understand how patriarchy shapes preferences. Only through the domination of men the unequal distribution of goods (which also includes education, wealth etc.) can be justified. Women (and men) are used to the given structures. We have to stop focusing on the outcomes but rather take into account the circumstances that led to the outcomes that we can observe. Only then we can conduct a real and valuable analysis of human decision-making.

4.1.3 Natural Market Equilibria

The third assumption of the homo oeconomicus in neoclassical economics is the existence of natural market equilibria; it also mirrors patriarchal structures as it justifies the unequal distribution of wages and working hours (both paid and unpaid).

According to it the economy is driven by supply and demand solely; and the most efficient output will occur without any state interventions. In an economy, where the state does not intervene, all individuals have symmetric information and there are no barriers for the entry of new suppliers, the price of a good is totally dependent on the intersection of supply and demand. Also a supplier does not offer a price that is less than the production costs (if such a price is

demanded he or she would exit the market) and furthermore, wants to make a profit to earn money. As long as the business is profitable and consumers are willing to pay the demanded price (higher than the production costs), other suppliers will enter the market and underbid the first producer until the price equals the production costs.

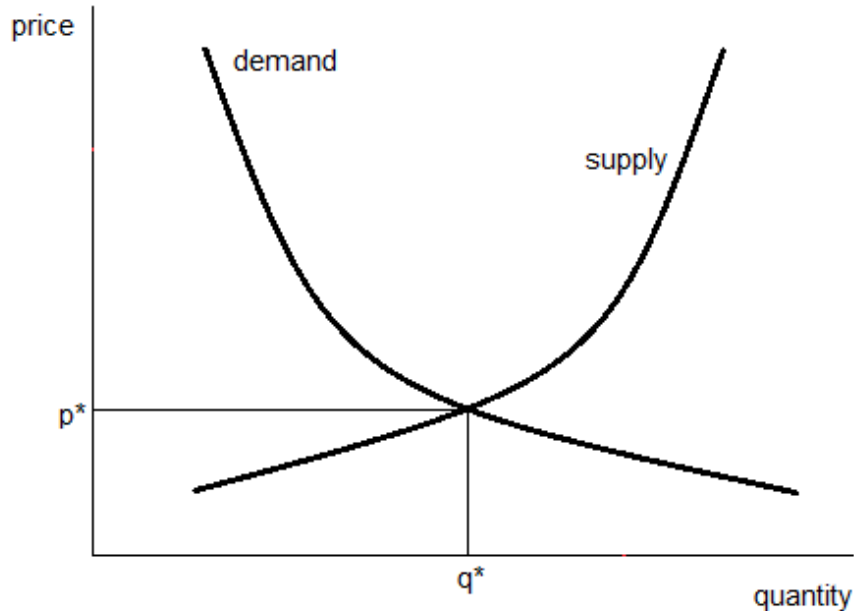


Figure 4.4: The intersection of supply and demand

Graph 4.4 shows the intersection of the supply and demand curve in a goods market, which is the equilibrium; p^* indicates the equilibrium price and q^* the equilibrium quantity, which firms should produce in order to meet demand and maximize profits. If less is produced the price would be higher but firms would be making less profits than in the equilibrium, if it would be lower producers would have to produce more but would also make less profits. In reality there are entry costs, some suppliers have a comparative advantage due to producing large amounts or better technology and advertisement and brand managing play a significant role. However, this does not play a significant role in my analysis about the relationship between natural market equilibria and patriarchal structures, so I will neglect it in this section.

The production costs of unpaid care-work are the opportunity costs of paid labour. One working hour of a person doing care work should be denoted with his or her hourly wage, which he or she could earn on the paid labour market, where the wage is also dependent on the supply of work by employees and the demand of employers. Building on this premise and the Gender Wage Gap, we can assume that the supply curve of unpaid work is below the supply curve of male unpaid labour supply, as the opportunity costs are higher on average. In the equilibrium,

women provide then a higher quantity of working hours than men for the same price, based on the graph 4.4.

This enables me to arrive at my first conclusion in the section, namely that women have a lower bargaining power when it comes to unpaid work as they earn less on average at the labour market.

In addition, women tend to offer unpaid work for free and therefore underbid each other, the supply curve in this scenario is horizontal at the equilibrium price 0. The supply does not react to changes in the demand. Patriarchal societies profit enormously from the inherent socialisation and clearly defined gender roles and women who think that it is their duty to do unpaid work for free, the gender pay gap²¹ drives the opportunity costs of women down and therefore enforces their willingness to stay at home and the socialisation makes them think that they have to do this.

What might be even more interesting in a capitalistic system is the Gender Wealth Gap²², not only women earn less but also have less, which shows that more men are capitalists and more women workers and are therefore more exploited on average.

A third gender gap which has to be mentioned here is the Gender Education Gap, which has reversed in most industrialised countries within the last decades. Boys used to be better educated than girls but nowadays more women finish high school and obtain undergraduate degrees, 23% of women aged between 25 and 34 have a university degree or have other tertiary education and only 19% of men, based on data from 2014 in Austria. Nevertheless, the horizontal segregation is still very strong, two-thirds of the health care students are women, whereas it is not even one-fifth in IT related studies. (OECD, 2017) It appears to be very interesting that although women and girls have caught up enormously in the education compared to their male peers, not only on a vertical but also partly on the horizontal level, the gap between average wages remains very similar.

The equalization of men and women on a monetary basis, as in the wage, can only take place if men are not valued over women. The stereotypes about gender have to be rejected and disciplines such as economics have to reveal what imbalances are hidden through its assumptions, as I have tried to do it here with the assumptions of a natural market equilibrium. The reduction in the Education Gap will probably in the future contribute to the reduction of the Wage Gap

²¹The unadjusted Gender Pay Gap (without correcting for gender differences in the labour market, such as part-time work, or individual characteristics of employed men and women, such as higher work experience) was 25.5% in Austria in 2006, which is almost the highest percentage in the EU (Commission, 2013).

²²A household survey (2008–2011) conducts that single women households are on average 40% less wealthy than men single households in Austria (Mader, Schneebaum, Hollan and Klopff, 2014).

as well.

Neoclassical economic theories suggest that we do not intervene in the so-called price building mechanism; so measures for the promotion of women should not be taken in order to deliver the most efficient outcome. It is due to institutional intervention and the promotion of girls' education that the Education Gap has been decreased. Female role models, for instance teachers, can help decrease the differences in education between girls and boys (Muralidharan and Sheth, 2016).

The intersection between supply and demand, which is the general equilibrium, takes all markets into account. Thus the natural equilibrium only occurs if all markets settle in the mentioned point simultaneously, this is recognized by the general equilibrium theory, which can lead to difficulties. If not settling in the equilibrium, markets produce a *deadweight loss*, which describes the difference between the price that has been paid by the consumer or has been received by the producer and the equilibrium price (Buchanan, 2005). By applying the general equilibrium theory and settling prices according to it, the economy will most probably produce a deadweight loss.

False trading occurs when the equilibrium price change and consumers and producers need to adapt to it, which takes a certain time or some trades that have been settled on a different price.

“[E]ven if one conceded (the completely incorrect argument) that the economy would achieve general equilibrium only if the government would completely butt out, that simply does not mean that we can actually achieve Pareto efficiency now if we proceed on a case-by-case basis. No individual market's output is likely ever to coincide with the output that that market would produce if the whole economy were in general equilibrium” (Buchanan, 2005).

General equilibrium theory relies on the shapes of all demand and supply curves, which are determined by all the endowments, such as wealth, property, talents, education, and so forth, of the economic agents as trading begins. If the distribution of them changes, the equilibrium changes. If policies then try to change the distribution of the endowments, the attempts to do so are inefficient measured against the deadweight loss (Buchanan, 2005). In a highly unequally distributed environment, redistribution always makes somebody worse off even after compensation. As we are facing high inequality among genders, neoclassical theory, in particular, the general equilibrium theory suggests not to enforce redistribution policies in order to avoid inefficiencies and increases of the deadweight loss.

4.1.4 Symmetric Information

The last main assumption of the homo oeconomicus is based on symmetric information, and states that each and every economic agent has all the information necessary for a certain decision and everyone has the same access to and level of information. Even if the information would be available it is not possible to process it, especially in such a complex world as we are living in presently. This assumption is necessary, as otherwise the theoretical efficiency of markets would suffer from a lack of symmetric information. “Markets may not be fully efficient when one side has information that the other side does not” (Nicholson and Snyder, 2009, 578).

If consumers do not compare prices, the regulation of the markets over prices does not lead to their efficiency. One producer could offer the best good for the lowest price but since the market is not efficient, due to the lack of information, he or she will still not sell the highest possible amount. Uncertainty ²³ must not be confused with asymmetric information, as long as both sides, consumer and produce, are exposed to the same level of uncertainty it does not harm the efficiency of markets and therefore does not harm microeconomic models in general.

As stated, the general market equilibrium, can only be reached if all market participants have symmetric information. Building on the criticism established above, perfect information is not simply just there. We also do not need empirical evidence to come to this finding, we simply know from our experience that some people have more information than others, be it that they are more interested, which would not break the assumption of symmetric information as long as the information is available for everyone at zero costs, or much more important because they know things others are not supposed to know. Through the exclusion of women from certain areas, may it be even just networking clubs, they do not have access to the same information as their male peers. Hierarchies are reproduced within social structures and women often do not have access to them. By assuming that every individual has access to the same level of information, neoclassical economics is ignoring unequal endowments of individuals, which lead to unequal outcomes and thus, unequal levels of well-being.

Alternative models do not presume the existence of symmetric information and thus open up some space to allow the recognition of hierarchies among societies. As I have pointed out neoclassical economics requires symmetric information, otherwise its models lose their explana-

²³The term uncertainty “describes a situation in which agents do not know about future states of a system. This can manifest in different ways, as they may not know in which different states the system may be in the future or they may know about the different states, however, without being able to put probabilities on them and on that basis calculate risk (or, it may be a mixture of both). Economic situations are generally characterised by such uncertainty, and increasingly so, the longer the time horizon adopted” (Elsner, 2012, 5).

tory power. In contrast to this Game Theory²⁴ allows for imperfect or asymmetric information (Elsner, 2012, 46).

Also, I want to draw attention to the fact that information is often transmitted through social gatherings, there is many examples for that such as work, old boys clubs, fraternities, sport clubs, conferences among many others. But the access to information is not the same. Nowadays information technologies are probably the most important factor when it comes to information advantages.

One has to keep in mind that the access to information technologies is not the same for everyone. During the last decades we have experienced enormous technological progress, we are surrounded by robots, artificial intelligence and more and more connected to the internet as opposed to the real life. Despite the fact that the people who have access to the internet is increasing regularly, the so called *Digital Divide*²⁵ based on the ability to use ICTs exists (Ghobadi and Ghobadi, 2015). Although the possession gap is declining, therefore, the percentage of people with access to recent technologies is increasing, this does not mean that digital skills do not differ in a great manner (Van Dijk and Hacker, 2003).

In a time where most information is gathered from the internet, the lack of access to it has significant effects on information asymmetries. ICTs (information and communication technologies) are crucial for equality and bear the potential to empower women and promote gender equality but especially in developing countries the access to them is constrained for women not only due to infrastructure but are also limited by specific gender roles.

Although the ICTs related developments have a broad set of consequences, such as changing jobs, generating wealth, transforming societies or values, I want to focus here only on the information aspect of them. I argue that our society is more and more dependent on ICTs and people who have access to them and who can use them in a productive way have an enormous advantage. Nevertheless, as I will show the access is asymmetric and women are on average not using the potential of these technologies as much as their male counterparts. Consequently, women have less access to information and assuming symmetric information, as it is done in the model of the homo oeconomicus disadvantages women even more than men.

There are several reasons why the access to ICTs can be constrained: missing technological

²⁴Game Theory describes a mathematical field which is often used in economics, it analyses preference relations, utilities of individuals and interactive strategic behaviour (Elsner, 2012, 18).

²⁵“[I]t is also becoming clear that the benefits of ICTs are unevenly spread between and within countries, based on differential access to the technologies and the knowledge/skills base needed to derive optimal benefits from them. This difference in the ability of countries, regions, sectors and socio-economic groups to access knowledge through ICTs, and to use them for a range of different purposes, has been coined the “digital divide” or “information poverty”.” [emphasize in original](Primo and Khan, 2003, 17)

infrastructure, connection costs, and missing language or computer literacy skills or gender roles. The first three reasons disadvantage men and women in the same way, but increase the inequalities between the global north and the global south, as countries of the global north have on average a better access to ICTs. The latter reason clearly leads to differences between men and women as women have not been raised to develop an interest or engage in science and technology.

An UNESCO publication shows how important equal access to information is:

“Globally, women’s access to information is a major concern. The United Nations places lack of access to information as the third most important issue facing women globally, after poverty and violence against women. The lack of access and democratic control over communication technology, the stereotyped portrayal of gender roles, and women’s limited access to professional careers and to decision-making in traditionally male spheres all underscore the urgent need for African women to enter into the debate on the development potential and/or impact of ICTs, and to advocate a gender-aware approach. The domination of communication by a small powerful elite, mostly males, who use the existing communication technologies to coordinate and reinforce social/cultural dominance, is a very real threat for women.” (Primo and Khan, 2003, 21)

The access to ICTs is not only dependent on gender but is often limited to higher class, urban-based, white citizens ²⁶.

Furthermore, the UNESCO report written by Primo and Khan (2003) identifies 13 areas which have an impact on the gender digital divide:

1. Socio-cultural and institutional barriers: factors that influence the use or the access of something, in this case ICTs, for certain groups are considered socio-cultural and institutional barriers. This believe can be based on ideology or social market structures. One of the most significant factors is the fear of technology, which is more often experienced by women on average as this is seen as a *male domain*. Furthermore, investments in the education of boys are often seen as more valuable (especially in countries of the global south), where the education also includes knowledge on how to use ICTs. The barriers can be found in institutional and informal settings.

²⁶Whereas over 50% of the population in the USA has access to internet at home, this number drops significantly by 18 percentage points for black and hispanic households (Primo and Khan, 2003, 29).

2. Access, control and effective use: women's ability to use ICTs and to decide how they are used is smaller than men's. This also is influenced by the fact that in developing countries women often live in rural areas, where the technological infrastructure is worse, whereas more men live in urban areas. "[A]s the information revolution develops and accelerates migration to the Internet, those without access will suffer greater exclusion" (Primo and Khan, 2003, 40).
3. Education, training and skills development: while girls in the global south suffer from limited access to basic education, the education gap in Europe has narrowed down to a gap in training for IT occupations.
4. Content and language: as the predominant language used on the Internet is English, people who do not speak or understand it are automatically excluded. The content is based on the biggest user group, which are powerful men from higher social classes living in urban areas in developed countries. This leads to a cultural and a gender bias. Sexism is predominant in media and this also leads to women's low interest in media content.
5. Pornography, trafficking, violence against women and censorship: women are often victims of e-mail harassment, cyber stalking or are confronted with pornographic, sexualised and sexist representation, which diminishes their interest in ICTs and ultimately leads to their self-exclusion. Furthermore, the internet serves as a tool in prostitution and women trafficking.
6. Cost, time and mobility: communication facilities are costly, especially in the global south. As women have on average less income it is harder for them to obtain access to these technologies. Also, as women engage more in unpaid care work they have less free time to spend on the internet or watching TV.
7. Gender segregation in employment: based on gender stereotypes women are less likely to find a higher paying job in new work opportunities, which emerge from the technological revolution. The importance of call centers, where most of the employees are women, became very high and will increase even more in the future. These jobs are typical very precarious as they are decentralised and non-unionised.
8. Indigenous knowledge and intellectual property rights: indigenous knowledge is very hard to protect by industry property laws, following, there is a high risk that it is exploited.

9. ICT Policy and Governance: women's and girl's needs have often been neglected in policy making, a gender sensitive analysis has to detect their needs and implement targets for them.
10. Absence from decision-making structures: women are typically under represented in decision making bodies, which is often treated as a technological area and therefore is male dominated.
11. Privacy, security and surveillance: the internet can be misused as a medium that facilitates surveillance and harassment, the protection of privacy and cyber security is therefore especially crucial for women otherwise their possibility and willingness to use ICTs diminishes.
12. Right to communicate: women should have equal and democratic access to ICTs. the Internet can serve as a platform for diversity but currently it is representing often just one viewpoint, namely the male viewpoint. This leads to a systematic exclusion of female opinions and limits their voices.
13. Women, place-based activism and virtual politics: although the Internet can be a powerful tool in transforming societies and serve as a platform for activism, this can not happen if access rights are not equal. By excluding women from ICTs the interests of certain groups are overrepresented and the societal transformation is biased.

The idea of complete information is idealistic and economists do not believe in its existence, it only serves as a tool to facilitate models and outcomes, also if all individuals do not have access to perfect information, then the results are not gender biased. My main critique of the assumption is that access to information is unequally distributed among gender due to patriarchal structures. In addition due to the horizontal segregation of labour, mostly men control the content of the internet, which makes it less appealing to women (Primo and Khan, 2003).

Patriarchal societies operate in specific norms, it is the male member of the family who decides over women, in countries of the global south, where access to ICTs is limited it is the male member of the family who decides who can spend how much time on the internet and how it can be used. It is him who decides which program is watched on TV and how many calls can be done per month. The internet is a way of controlling human beings, the content is biased and decided by a certain type of people. Not all interests are equally represented, which leads to a lack of interest by women. Following, they might even choose to withdraw themselves from the technological sphere.

As has been pointed out in the UNESCO report the internet can even facilitate the harassment and sexualisation of females. By ignore the huge number of issues that emerge from the unequal distribution of access to ICTs one fails to recognise that these technologies might even enforce asymmetric information. Only people who are well trained and understand its usage have access to almost unlimited information, whereas others suffer from asymmetries at a large extent. ICTs also serve as a way to organize society and to enforce changes in values. It is again crucial to understand who controls the new media. Information communication technologies are highly biased tools and what is even more dangerous is that they give the impression that information becomes available for everyone. Instead of minimizing inequalities it even enlarges them as we have seen.

Firstly, it remains to say that the assumption of symmetric information mirrors the patriarchal structures of societies, the differences in access to information and communication technologies is not taken into account. It completely neglects that information is not freely available to everyone at any time. It gives the impression that everyone is self responsible for his or her well-being and that everybody has the same opportunities and that the social structures, which are inherent in societies do not exercise any influence at all. But we need to acknowledge that this is certainly not the case, the dominant role of men is perceived and reinforced by assuming equality among economic agents.

Secondly, I believe that the unequal access to ICTs serves as a strong illustration of how patriarchal are reproduced and reinforced even in new developments. This example shows very clearly that we are far away from overcoming gender divides in most areas.

5 Alternative Models on the Decision-Making of Individuals

In 2002 Daniel Kahneman and Vernon Smith had been awarded the Bank of Sweden Prize in Economic Sciences in Memory of Alfred Nobel for their contributions in the field of Experimental Economics. This event can be seen as the recognition of a “change in the nature of economic science” (Guala, 2005, 2). “[E]xperimental economics suggests that the entire approach to thinking about the appropriate mix of induction and deduction needs to be rethought” (Colander, Holt and Rosser, 2004, 494).

This branch of economics has evolved from the need to test economic theories; the term itself refers to the experimental environment of this sub-discipline, which is mostly used in natural sciences, such as physics or chemistry. In experiments scientists test the previously developed ideas in a laboratory, which is fully (or partly) controlled by them. This means that (all) other influences can be eliminated and hypotheses about the influence of a single factor are tested. “[E]xperimental investigation represents an empirical tool that can help economists isolate the explanatory power of a variety of theories” (Davis, 2011). As individuals play a significant role in economics, the possibilities of conducting experiments in laboratories are limited. The inclusion of experiments into economic theory is a new approach and has been regarded as unnecessary in past years, nowadays it is used as an individual tool in the discipline to develop models, not only as supplementary to orthodox methods in economics. Guala (2005) argues that the theoretical framework is also able to profit enormously from experimental economics.

One example of a laboratory setting is game theory, where individuals are typically the research object and the decision-making process and actions of them are often connected to the research question. Typical game theoretical settings involve students, who receive a small amount of money for participating in the experiment. Game theory is often criticized, it has been claimed that the research objects have not understood the games fully and are confused by the unnatural setting of experiments which ultimately leads to biased results. Also, the attempts of researchers to control the environment within a game are said to be insufficient. Thus experiments performed for answering economic research questions can not be interpreted in the same manner as experiments performed in natural sciences. We have to be careful and take the surroundings into account (Gintis, 2000). Nevertheless, they serve as a great expansion of the

economic tool-kit and one should keep in mind that there is no such thing as objective science, every research has to be examined critically and its value assessed individually. Since some choices are driven by our subconsciousness, researchers will probably never be able to understand the decision-making processes of individuals fully. Concluding, experimental economics serves as a good amendment to the *classical* economics tool-kit and is able to deliver significant results.

A number of game theoretical studies deny the validity of assumptions of the homo oeconomicus, especially the rational choices of economic agents has been rejected numerous times (Colman, 2003), which is especially relevant for the research question of this thesis because it displays that there is no empirical ground to assume rationality in economic agents as neoclassical economics does. I will demonstrate this through an experiment done by Bornstein and Yaniv (1998).

The participants in the experiment played the ultimatum game²⁷, where individuals have to split 100 points between each other. The first party places an offer and then the second can accept or decline it. If the initial offer is accepted the points are split according to the offer, if it is rejected none of the parties receives anything.

According to the principle of rationality, the offer-maker should offer the other party only 1 point and keep 99, since he or she wants to maximize his or her output and the offer-accepter should accept every offer, even an offer which distributes the points in such an unequal manner. As one point is better than no points, which he or she receives when not accepting the offer. The utility of both individuals would therefore be maximized in this case.

Nevertheless, experimental evidence shows that human beings tend to offer the other party 40–50% of the total, which would be 40–50 points in this case, therefore not behaving as what is assumed to be rational. One can notice that the definition of rationality is here based on the self-interest standard (Robert Frank and Edward Cartwright, 2013). Although it has already established that rationality must not be reduced to egoism, the authors of this study do not challenge the selfishness of individuals. They assume their utility function to be solely based on profit maximization. If a present-aim standard (Robert Frank and Edward Cartwright, 2013) would have been adopted in this study then the results probably would not have been classified as irrational. It would have been sufficient to include for example fairness as an utility determining factor to rationalize the decisions of the experiment objects.

Next, the authors were interested if behaviour differs based on if decision are taken on an

²⁷The ultimatum game is well-known in game theory and describes a setting where two parties have to decide about their behaviour. It is a finite game with one round, so it is only played once. Following, the participants have no information about the decision-making structure of their counterpart from previous games. A famous example of such a game is the *Prisoners Dilemma*.

individual or group level. They conducted two experiments, the first one with individuals and the second one with groups of three people. The results show that groups behave more rational, meaning that they offer less and also are willing to accept less.

Moving on to other examples, Gintis (2000) tests the compatibility of the homo oeconomicus model with non-standard market goods, such as the ozone layer, the destruction of the rain forests, which are also referred to as *bads*, and public goods. The author states that evidence proves that the “model is incorrect outside of an anonymous market setting” (Gintis, 2000, 313).

The author also states that although choices of individuals under uncertain condition should in theory be reliant on the aim to maximize the expected utility of the pay-offs, people tend to reduce the complexity by applying simpler judgemental operations. Individuals tend to not take the frequency of certain outcomes into account and also they tend to overestimate the probability of certain events if they appear to be especially interesting or desirable. He conducts that the evaluation of individuals of social welfare and their well-being is only reflected by their choices if they are facing a *feedback loop*²⁸.

As a last remark the researcher states that economic individuals appear to suffer more from loosing than they are happy from gaining. Thus for losses they appear to be risk-loving, while being risk-averse for gains.

When conducting experiments on public games, evidence can be found that only a very small fraction of individuals behave accordingly to the principles of the homo oeconomicus, most of them do not free ride. In a one stage games, for instance, individuals contribute on average half of their income, while in repeated games the contributed fraction tends to diminish over time (this finding is in line with the experiment of Bornstein and Yaniv (1998). If the possibility of punishing other participants for free-riding behaviour, is added to a public game, evidence suggests that individuals are even willing to sacrifice their money for punishing others (Gintis, 2000).

Among other findings, Gintis (2000) also shows that in a modified prisoners dilemma, much more cooperation can be found than predicted by the homo oeconomicus.

As I have shown here, experiments can serve as a very helpful tool in economics and also emphasize the need for an alternative model on the decision-making of individuals since it seems that the homo oeconomicus does not hold for a great number of experiments.

²⁸ A feedback loop refers to a situation in which part of the outcome of previous choices is used for new choices. These loops can be positive or negative, an example for a positive feedback loop could be if a company invests a part of its profits in the next business period and following makes an even higher profit due to the investments; a negative one could be if the company makes losses, therefore minimizes their innovation expenses and makes even smaller profit in the following business period since it can not operate as cost-efficient as their competitors due to the missing know-how.

More interestingly, experimental economics is able to trace empirical differences in the decision-making between men and women. Croson and Buchan (1999) conduct an experiment on gender differences in game theoretical outcomes. Previous studies indicate mixed results but risk seems to play a significant role in gender differences. In a risk-free or less risky setting women are more generous than men on average, which might be an indicator of higher altruistic tendencies.

Other examples of gender differences shown by game theory are that women are less competitive than men on average (Bönte, 2015) or that women react stronger to the context of a social situation than their counterpart, which can lead to a higher degree of cooperation (Ellingsen, Johannesson, Mollerstrom and Munkhammar, 2013).

Summarizing, experimental economics has provided us with evidence that people tend to decide differently based on a number of factors and differences based on gender become visible in most settings. At this point it is irrelevant if the differences arise from biological factors or acquired norms as I do not attempt to provide an answer to the question of nature versus nurture. What is central to my analysis is that we can observe differences and by assuming uniform individuals, deviations from the male ideal are ignored. Experimental economics therefore serves as a valuable argument for questioning neoclassical assumptions. In addition, I believe that the great extent of game theoretical research on gender differences, rational behaviour and altruism, proves very well how important some of the assumptions of the homo oeconomicus still are in mainstream research. At the same time it is able to close the gap between economic models and observed realities and thus, enables a more realistic view for economics.

In the following I will present three alternative models on human behaviour and discuss them within the framework of this thesis. The first model has been developed by Amartya Sen in 1977, in it the researcher discusses the meaning and the limitations of rationality. The authors of the second are George Akerlof and Janet Yellen, in 1990 they elaborated on the significance of fairness in the preferences of individuals. The third one has been developed by George Akerlof and Rachel Kranton in 2000 and includes the identity of individuals in the utility function.

5.1 Foolish Rationality

In the paper *Foolish Rationality* which has been published in 1977, Amartya Sen refers to Francis Edgeworth's first principle of Economics. According to it economic agents are self-interested in two particular types of activities, which are wars and contracts (Edgeworth, 1881).

Amartya Sen claims that sympathy and commitment play a crucial role in people's decision-

making. He describes the first as a case where the well-being of others affects the individual's own well-being, and the latter as a situation when the well-being of others does not directly affect an individual but actions based on commitment make the person better off. An example for this is a demonstration against cruel treatment of prisoners, even if the people who demonstrate has never been and probably will never imprisoned and are not personally attached to any of the prisoners. The researcher conducts that behaviour based on commitment is non-egoistic.

In this model rationality is assumed to be interconnected with selfishness. I argue that commitment, can also be classified as egoistic, as it can contribute to the well-being and reputation of individuals. Regardless of rationality sympathy and commitment do not fit the premises of neoclassical economics as they contradict methodological individualism because they are based on interactions between individuals.

Below the difference between sympathy and commitment are shown in form of mathematical functions:

Sympathy in a simplified utility function of an individual j could look the following:

$$Utility = U_j(x, U_i) \quad (5.1)$$

Where x describes goods and services, while U_i describes the utility of a different individual i . If the utility function of an economic agents would look like this, he or she would be willing to give up goods x to a certain degree if this would increase the utility of the individual i . An example for this might be donating money, or buying presents for family members, which ultimately can be seen as rational in the present-aim standard (Robert Frank and Edward Cartwright, 2013).

Turning to commitment Amartya Sen argues that:

“One way of defining commitment is in terms of a person choosing an act that he believes will yield a lower level of personal welfare to him than an alternative that is also available for him” (Sen, 1977, 327).

Thus commitment in a simplified utility function of an individual j would not be included:

$$Utility = U_j(x) \quad (5.2)$$

Although the individual would not gain any utility for giving up part of x he or she might still do so, according to Amartya Sen. This is a major difference between his model and the homo oeconomicus. In the first one, individuals do not base their decision only on their utility function and do not aim to maximize their utilities, thus, their behaviour can be irrational.

The fact that preferences of economic agents are difficult to explore and are typically assessed by the observation of people's choices, makes it difficult (if not even impossible) to see if commitment is really existent. Giving up something, e.g. an additional unit of a good, due to commitment, could also classify as egoistic behaviour if it is included in the utility function, which is a tool to overcome the above mentioned contradiction to the homo oeconomicus.

$$Utility = U_j(x, y) \tag{5.3}$$

Where y describes helping others. The function can be expanded by many other variables.

“[C]ommitment does involve, in a very real sense, counter preferential choice, destroying the crucial assumption that a chosen alternative must be better than (or at least as good as) the others for the person choosing it, and this would certainly require that models be formulated in an essentially different way” (Sen, 1977, 328).

Concluding, Amartya Sen's model is not consistent with neoclassical theory, due to points. Firstly, the inclusion of sympathy is possible due to methodological individualism. And secondly, because the decisions based on factors, that are not represented in the utility function are classified as irrational. The latter problem can be overcome by using specific variables.

Next to the addition of *altruistic variables* in the utility function, the author describes “multiple preference orderings”. Due to the high complexity of decision-making processes, it makes sense that individuals do not allow themselves to be decided based on the same preferences. Depending on their surroundings and the people that are affected by their decisions, they might decide on a preference ordering which is more or less selfish, allows for more or less sympathy or displays other features. Not only the alternatives are ordered but also the preference orderings according to this.

“This dual structure permits us to distinguish between what a person thinks is good from the social point of view and what he regards as good from his own personal point of view” (Sen, 1977, 336).

The above statement indicates, that the author refers to a kind of social pressure for being a good person or morality, after distinguishing between the two, the individual decides which perspective is more important for him or her. The argument, that preferences might not be fully displayed by actions has also been taken up by Nelson (1995) among other, she claims that

economics has to open up and allow for the usage of different methods as well as a method-mix without punishing such behaviour and describing this type of analysis as too “soft” or not objective enough.

Revealing the preferences if they are not fully in line with the observable actions would lead to a better understanding of the decision-making of individuals. Following one could e.g. assess why it seems that women are still suffering from patriarchal structures. As we can see here, reducing preferences to actions means that the background of decision-making might be hidden.

Amartya Sen states that there is a possibility that preferences of individuals are not revealed by their action as it is mostly assumed in economics. “I should mention, however, that the structure demands much more information than is yielded by the observation of people’s actual choices” (Sen, 1977, 339).

Preferences are something non-observable thus different research methods have to be used in order to find out how preferences of individuals are shaped. By introducing multiple *cardinal utility functions*²⁹, it is possible to determine the true preferences of individuals in the opinion of the author since differences between the ranked preferences can be compared (Sen, 1977). By stating that observable actions of economic agent are not sufficient in displaying his or her preferences, he demands for a deep analysis of the preferences by making them endogenous. Furthermore, he turns away from methodological individualism since he recognises the influence of the society of the decision-making of individuals. By this the researcher enables to question the behaviour of human beings and reveal possible patriarchal suppression.

This paper does not only contribute meaningfully to the discussion of rationality, egoism and methodological individualism but also links preferences clearly to social structures. As patriarchy influences social structures, this automatically links the decisions of individuals to patriarchy. The model is able to display asymmetries between individuals based on power structures. What is still missing in my opinion is the possibility of intrapersonal preference comparisons as this could show structural differences between the values of men and females. Not only is this not possible due to the mathematical structure of utility functions, as I have pointed out in the analysis of exogenous preferences, but also due to the fact that preferences are not fully revealed by actions. Building on the summary of Carol Gilligan’s research on the differences in moral understanding between men and women and numerous game theoretical empirical results, it is legitimate to assume that preferences of men and women are different on average. Amartya Sen gives an example on how these differences can be also displayed and taken into account in

²⁹ A cardinal utility function does not exhibit which action makes an individual better off but also by how much.

economics.

5.2 Fairness and Preferences

Another alternative to the homo oeconomicus has been established by Akerlof and Yellen (1990) and deals with fairness and unemployment.

Starting from the Efficient Wage Theory³⁰ the authors analyse labour market anomalies.

According to the Efficient Wage Theory, firms are not willing to cut wages since high wages can be seen as instruments to discipline workers and to reduce turnover in the labour force, which is in the interest of firms since high turnovers mean high investments in the education of workers. Therefore the anomaly of a non market-clearing wage, which is above the equilibrium wage, can be explained.

In the opinion of the authors the theory fails to explain four points, which are wage compression, the strong positive correlation between the industry's profits and wages, the inverse correlation between unemployment and skill, and the correlation of industry wage premia across occupations. The new models is able to explain all the mentioned anomalies in their opinion.

In contrast to the standard utility maximization model, fairness is an important factor in the determination of wages. "Workers who consider themselves fairly treated are likely to work hard, and workers who consider themselves unfairly treated are likely to shirk" (Akerlof and Yellen, 1990, 45).

It follows, that the accurate wage is not a nominal value but rather relative to the wages of others working in similar positions. Although a certain wage might seem perfectly rational or suitable according to the Efficient Wage Theory, George Akerlof and Janet Yellen suggest that it is only efficient if it is also fair. If the wage of a worker is above the market equilibrium but below what his or her co-workers are earning, the worker will have an incentive to shrink. The well-being and satisfaction is therefore highly dependent on others, which conflict with the assumptions of methodological individualism. The typical neoclassical approach of a bottom up perspective, where the individual situation is assessed and then aggregated to a macroeconomic level, does not result in a correct efficient wage because there the relative aspect of wages is neglected.

An analysis of this model within the framework of patriarchy is very beneficial. At a first

³⁰The Efficient Wage theory is a response to the wage theory, developed according to John Maynard Keynes, which states that wages are market-clearing and the unemployment level will settle at (almost) zero since unemployed individuals will underbid the wage as long as the wages and unemployment do not settle in an equilibrium, producers will hire more at the lower wage and therefore also earn more since the wage will be spend on the products they produce.

glance average wages between men and women are not fair³¹. So why are women willing to accept a lower wage and still work hard?

A possible answer is that patriarchal structures translate into monetary differences; the labour of women is less appreciated (in monetary terms) and women are raised to individuals who demand less or value themselves less. This result is often obtained by game theoretical wage negotiations, where women reach less favourable results than men on average (Dittrich, Knabe and Leipold, 2014). Also we still are facing strong horizontal segregation among branches, where male dominated areas have a higher average wage than female dominated, as I have stated previously.

The model also explains why there is an existing inverse relationship between unemployment and skill, meaning that unemployed individuals tend to be less skilled. If the workforce is divided in males and females and their skills are valued differently than what does this mean for us.

The question here is if discrimination is regarded as being fair within the labour market. In theory this will be answered by yes but in reality we still face significant Gender Wage Gaps controlling for everything besides gender, one method to obtain this is the decomposition method. Grandner and Gstach (2015) determine that 15 percentage points of the difference between wages of men and women, based on the income of men, is based on pure discrimination in Austria.

The authors discharge the assumption of methodological individualism, by taking the societal structures into account. Next to nominal wages, relative wages are important for employees. Once again it becomes visible that it is necessary to break the assumption of methodological individualism to obtain more accurate models. Nonetheless, the question remains why women are willing to accept lower wages than men, and more importantly how this can be changed. If fairness was as important as George Akerlof and Janet Yellen assume in their model, women should not be willing to accept 15% less than men for the same work.

Concluding, methodological individualism makes it very difficult to even see the underlying structures which cause differences in outcomes and makes economic agents fully self-responsible for their well-being. Despite the Efficient Wage Theory women's wages are cut without obvious reason, as a result of this women should be less encouraged to work. On one hand, the high percentage of women in part time employment might be an indicator for the discouragement. On the other hand, patriarchy has socialized women to demand less wage as they are less aggressive in wage negotiations and ask less for wage increases or even if they ask they are less successful

³¹ The difference between the net income of employed women and men was on average 33.3% between 1997 and 2014 in Austria, where the value was 33.2% in 1997 and 31,6% in 2014 (Statistik Austria, n.d.)

than their male counterparts ³². It seems that systemic unfairness towards women in the labour market remains widely uncontested.

5.3 The Inclusion of Identity into the Utility Function

Akerlof and Kranton (2000) establish a model of human decision-making in which identity is part of the utility function and thus serves as an explanation for preferences and ultimately in decision-making. They name four main drivers for their original approach, namely that identity can explain behaviour that seems to be detrimental to some because they have other identities, identity can be seen as a new type of externalities since it corresponds with others, preferences can be changed through identity, and finally, because identity is fundamental to behaviour.

Through including identity into their analysis they claim to receive results that are supported by existing evidence that differ from those of other economic models. In their example they define identity solely through the factor of gender and describe it not only a person's self-image about his or her identity but also the categories that are assigned to the gender by society.

The utility function in the paper is denoted as following:

$$U_j = U_j(a_j, a_{-j}, I_j) \quad (5.4)$$

Where U_j describes the utility of an individual j , a_j , the action of an individual and a_{-j} the action of others. Identity is further denoted as the following:

$$I_j = I_j(a_j, a_{-j}, c_j, e_j, P) \quad (5.5)$$

Where I_j describes the identity of an individual j , c_j the social category he or she belongs to, e_j the individual's own characteristics and P the degree to which the individuals characteristics match the social category, which he or she belongs to.

Their modelling of identity consists out of three factors: the existence of social categories, the assignment of subject to one of those categories and the subject have in mind some form of assignment-related prescriptions. The authors ground their model on examples of identity-related behaviour and therefore justify the claim that the impact of an action on the individual's utility partly depends on the identity of this individual. The utility or pay off of an individual is related to identity in their opinion but there exists tactics to change the effect of it.

³² Extensive research body indicates that women less likely will initiate wage negotiations (Babcock and Laschever, 2009).

Actions that affect the identity-related pay-off:

- Self-Mutilation: personal identity is often customised through dieting, gaining weight, tattoos, plastic surgeries in order to mark the belonging to more or less explicit social groups, therefore, the P value is increased by this behaviour, since the individual's identity matches the ideal identity more.
- Gender and Occupations: people in an occupation that is denoted to the opposite sex often tend to have ambiguous feelings about their workplace. Both gender and occupation often have very strong characteristics detached to each other and if they mismatch these leads to a decrease of the value P .
- Alumni Giving: individuals tend to support organisations which they once have been part of due to their strong identification with them.
- Mountaineering: the sense of the self is supposed to be enhanced by suffering extreme discomfort and danger.

Actions from others that affect the identity-related pay-off:

- Gender and Occupations: individuals whose gender and occupation do not accord to each other often face discrimination at their workplace and in their private life
- Manhood and Insult: when men are insulted they sometimes have the feeling that they have to do something against it so that others will not doubt their manhood.
- Changing Groups or Violating Prescriptions: if others violate gender prescription this might also have a significant effect on the individual's identity since the other's behaviour might devalue or up value the overall identity.

Social categories and prescriptions can be manipulated through the below channels:

- Advertising: advertisements are often used to build a specific image of an identity
- Professional and Graduate School: depending on the discipline some job training try to influence the personality of individuals
- Political Identity: political leaders often try to change the population's preferences through changes in identities and prescriptions Studies

To some extent the identity is also an individual's decision: Where the individuals can choose which school they will attend, which church or which community. Also citizenship serves as a good example for the forming of identities, nevertheless as already mentioned this is only possible to a certain extent, since the identity of a citizen is not solely determined by the citizenship but also by other factors such as mother tongue, ethnicity, race or others.

These examples show that preferences are not naturally given and exogenous but are surely influenced by individuals themselves, others, and even the society as a whole. In addition, preferences are not stable but change over time.

George Akerlof and Rachel Kranton implement their modified utility function in a game theoretical setting and come to the conclusion that there is a connection between economic interactions and the psychology of identity, that the model allows for comparative static analysis on identity-related parameters, and that the results call for a further implication of identity for economic interaction. Thus, their model can be seen as an enhancement to the standard model of the homo oeconomicus. Additionally, the authors expand their framework from gender to also other identity building categories, such as race, ethnicity or religion.

The above described model is a great refinement of the homo oeconomicus. It takes social constructions into account and recognises that preferences and choices of individuals are shaped by social hierarchies and are influenced by the environment. Preferences become endogenous and also methodological individualism is clearly rejected since the actions of others are included in the utility function of an individual. Based on this the model is clearly not neoclassical as per my definition.

I believe that it is a great starting point as the game theoretical environment also provided positive results and a strong alternative to the homo oeconomicus. It finds a balance between mathematical equations and a sociological approach.

6 Conclusion

This master thesis aims to serve as a starting point and basic tool-kit in identifying how patriarchal structures are mirrored in economic assumptions. Although I base my analysis on the homo oeconomicus and neoclassical economics, it can be expanded to every economic model and assumption. The economic discipline often positions itself as value-free and objective but feminist theories argue that there is no such as thing as complete objectivity. The homo oeconomicus describes the ideal economic agent: a selfish person, who is concerned with maximizing pleasure, without taking the well-being of others into account.

I analyse economic theory from a Egalitarian feminist perspective. In this school of thoughts, there is no difference between men and women, following, it is impossible to point to differences between men and women in economic outcomes. In order to overcome this issue, I make use of two concepts: duality and strategic essentialism. I form a temporary group of women, solely for the purpose of this analysis, which relies on the duality between men and women. This does not mean that all women experience the same, some are more affected by the exclusion from the economic sphere and some less. I refer here to average values only and generalise in order to facilitate my investigation and point to structural differences.

The main part of the thesis is concerned with the four main assumptions of the homo oeconomicus: rationality, exogenous preferences, the existence of natural market equilibria and symmetric assumptions.

Rationality in neoclassical economics is restricted by the assumption of methodological individualism. Economics agents behave in a selfish way and it is not possible to include variables concerning altruistic preferences in the utility functions of the agents. One possibility of overcoming this would be the inclusion of the utilities of a different individual into the utility function but this is not possible as they are not comparable. Other variables such as volunteering might be included but are seldom done in practice. Nevertheless, one can argue that ultimately these are also egoistic as they increase the utility. Concluding, rationality mirrors patriarchal structures and represents men better in the neoclassical framework, as men behave more selfish than women.

Exogenous preferences are also strongly connected to egoism and altruism. Neoclassical economics assumes preferences of individuals to be very similar. If it is true that preferences are revealed by the actions of individuals, one can observe very different preferences between men

and women. Women seem to be more willing to sacrifice their own well-being for the good of somebody else. Preferences mirror patriarchal structures as the socialisation of men and women is different, which leads to different values. Specific behaviour is acceptable for men but might not be acceptable for women. Within this framework women are taught to perform more unpaid work as this is the stereotypical division of labour.

The existence of natural market equilibria suggests that state interventions are not efficient. Markets (of goods, labour or other variables) are able to regulate themselves. The distribution of wages and unpaid work is unequal around the world, women earn less and work more (if unpaid and paid labour is taken together). Neoclassical economics justifies this and neglects that fair outcomes can be achieved only if intervention takes place.

The last assumption concerns symmetric information. Although it is not enforced so strongly and neoclassical economists acknowledge that there is no such thing as complete information in reality, the unequal distribution of information seems to be neglected. Especially nowadays, where information is mainly retrieved from the internet, it is important to note who has access to information and communication technologies. The Digital Divide is especially significant in countries of the Global South and leads to a systematic disadvantage of these, who do not have access to ICTs. I show that women are excluded more from these technologies due to a number of reasons. Again patriarchal structures are mirrored in households, where the head of the family decides on the access to information and education. Also, the the content is often not appealing to women, which results in lower interest for new technologies.

In the last chapter of this thesis I present three alternative models on the decision-making of individuals, all of them are heterodox and operate outside of methodological individualism as they do take social structures and dependencies into account. Based on the analysis of the homo oeconomicus I establish before, the differences in the implications of the models are very clear. Amartya Sen broadens the understanding of rationality and shows that without methodological individualism altruistic behaviour can be part of the utility function. George Akerlof and Janet Yellen show how important fairness in wages can be and that its lack might lead to inefficient employees. Based on this finding, women should perform worse in their jobs as they are earning less on average than their male co-workers. Two questions remain unanswered: do women work less efficiently? And if not, does society think it is fair to earn less based on factors such as gender? The last paper has been written by George Akerlof and Rachel Kranton and describes how identity can be incorporated into utility functions. Preferences are endogenous in their model and highly influenced by social structures. The authors establish a relationship between

economic interactions and identities of economic agents. From a feminist point of view it remains to question how the identities are constructed, what the norm is and whose interests they serve.

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Abstract

The homo oeconomicus – the economically thinking man in neoclassical economics – is supposed to be gender free, value free and rational. Further consideration from a feminist perspective enables to recognise that patriarchal structures are mirrored in each and every of its individual assumptions, which makes typically male behaviour the norm.

The research question of this text deals with the above formulated statement. Therefore, the paper begins with a clear definition of patriarchy, neoclassical economics and different feminist schools of thought. Starting from an Egalitarian feminist point of view, I analyse the representation of men and women in neoclassical economics. The aim of this work is to show based on the homo oeconomicus how assumptions in economics can be analysed in order to find out who is represented by them. Although the provided analysis is based on neoclassical economic and heterodox economics is only analysed very fundamentally, one can already realise that there exist enormous differences between the two branches of economics.

I identify methodological individualism as one of the biggest limitations of neoclassical economics, which influences all four main assumptions, which are rationality, exogenous preferences, the existence of natural market equilibria and symmetric information of the homo oeconomicus in a substantial manner as it makes it impossible to take institutions, social interlacings and interdependencies between individuals into account.

In the last chapter of this work I analyse three heterodox models about the decision-making of individuals in the same way. Since methodological individualism is not an premise in heterodox economics, interpersonal relations between agents can be accounted for, which ultimately leads to a better representation of women in economics.

Zusammenfassung

Der Homo Oeconomicus – der wirtschaftlich denkende Mensch in der Neoklassik – gilt als geschlechtslos, wertefrei und rational. Bei genauerer Betrachtung aus einer feministischen Perspektive, lässt sich erkennen, dass in jeder seiner Annahmen patriarchale Gesellschaftsstrukturen gespiegelt und somit männliche Verhaltensweisen zur Norm gemacht werden.

Die Forschungsfrage dieses Textes beschäftigt sich mit der oben genannten Erkenntnis. Ich beginne die Arbeit daher mit einer genauen Begriffsdefinition vom Patriarchat, Neoklassischer Ökonomie und unterschiedlichen feministischen Denkschulen. Ausgehend von Egalitätsfeministischen Überlegungen untersuche ich die Auswirkungen und Repräsentation von Männern und Frauen in der neoklassischen Volkswirtschaftslehre. Das Ziel dieser Arbeit ist es anhand des Homo Oeconomicus aufzuzeigen, wie Annahmen in der Ökonomie analysiert werden können um zu erkennen wer in ihnen repräsentiert wird. Obwohl die Analyse auf neoklassische Ökonomie beschränkt ist und nur bedingt eine fragmentarische Bearbeitung von heterodoxen Theorien beinhaltet, wird bereits darin deutlich, dass es grundlegende Unterschiede zwischen den beiden Denkschulen gibt.

Ich identifizieren methodologischen Individualismus als eine der grössten Einschränkungen in der Neoklassik, die auf alle vier Annahmen des Homo Oeconomicus: Rationalität, exogene Präferenzen, natürliche Markgleichgewichte und symmetrische Informationen Einfluss nimmt, da sie die Mitbetrachtung von Institutionen und sozialen Verflechtungen, sowie Interdependenzen zwischen menschlichen Individuen unmöglich macht.

Im letzten Kapitel der Arbeit analysiere ich zudem drei heterodoxe Modelle zur Entscheidungsfindung von Individuen und wende die gleiche Methodik an. Da methodologischer Individualismus keine Voraussetzungen ist, lassen sich dabei zwischenmenschliche Beziehungen in die Annahmen einbinden und führen so zu einer besser Repräsentation von Frauen in der Ökonomie.

Maria ZIOLKOWSKI BSc

E-Mail ziolkowski.maria@gmail.com

Address Arndtstraße 21-23/2/5
1120 Vienna, Austria

Education

- | | |
|-------------------|--|
| 09/2016 – Current | Master of Science Monetary and Financial Economics
University of Lisbon |
| 02/2015 – Current | Master of Arts Gender Studies
University of Vienna <ul style="list-style-type: none">• Thesis: "Patriachal Structures and the Homo Oeconomicus. Analysing neoclassical economics from a feminist perspective." |
| 10/2010 – 09/2014 | Bachelor of Science Economics
Vienna University of Business and Economics <ul style="list-style-type: none">• Thesis: "Countercyclical Capital Buffers as a regulatory instrument" |
| 09/2002 – 06/2010 | High school
GRG Erlgasse 32-34, 1120 Wien <ul style="list-style-type: none">• Specialization: languages |

Publications

- | | |
|---------|---|
| 06/2016 | „Kann die „Frauenquote“ zu Gerechtigkeit führen? Eine ökonomische, statistische und rechtsphilosophische Analyse“
Beitrag im GAP Journal 2015/2016. S. 332-346. |
| 09/2015 | „Arbeiten oder leben? Bemerkungen zur Ökonomie der Zeit im Neoliberalismus“
Beitrag in Momentum Quarterly 5/2. S. 75-120.
Gemeinsam mit Christian Berger |
| 02/2016 | „Multiple Krisen des Selbst: Europa, Arbeit und Geschlecht“
Beitrag in Forum Recht 02/2016. S. 60-63.
Gemeinsam mit Christian Berger und Ute Schreiner |

Work Experience

03/2017 – current	Sales and Trading Assistant BNP Paribas
01/2016 – 07/2016	Intern Business Development & Institutional Sales in Austria and CEE Allianz Investment Bank
10/2015 – 01/2016	Intern Financial Stability and Macprudential Supervision Division Austrian Central Bank
04/2015 – 10/2015	Intern Business Development & Institutional Sales in Austria and CEE Allianz Investment Bank
07/2010 – 04/2015	Employee and Intern in different departments Bank Austria Group – Member of UniCredit Group
01/2015 – 03/2015	Project Assistant Advantage Austria - Commercial Section of the Austrian Embassy in Beijing

Extracurricular Activities

10/2015 – Current	Global Advancement Programme Diploma Course at the Academic Forum for Foreign Affairs
03/2015 – Current	Business Negotiations Club At the Academic Forum for Foreign Affairs
08/2015 – 09/2015	European Forum Alpbach <ul style="list-style-type: none">• Seminars: European Monetary Union & Digital Divide
10/2014 – 06/2015	Economic Policy Club Diploma Course
08/2015	Vienna Model United Nations At the Academic Forum for Foreign Affairs
10/2005 – 06/2010	Peer Mediation Diploma Course & Consultations