Women in Management, and differences in family situation.

Evidence from the Norwegian bank-sector

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This thesis is written in the field of labor market research. I am doing research on the bank sector in Norway, from 1979 to 1996. This is a sector where many employees have specialized education. This makes it interesting to look at using human capital- , glass ceiling- , discrimination- and gender specific socialization theories.

In this thesis I have made use of quantitative methods. From quite simple cross tabulations to regression analysis using fixed-effects models.

It has become more common for women to attain the same education as male managers. At the same time more women has taken the step into management.

In this paper it has been shown that female managers are in a different family-situation than male managers, and both female and male non-managers. Women are over represented in the non-managerial positions. This has changed over the years, as women have attained the education types common for managers, but there are still big differences.

Women are more likely to be promoted within the same sector than men, while men change more between different sectors throughout their careers.

In general female managers have fewer children than male managers and all non-managers. They are also more likely to have their children after they are promoted to manager. This is not the case for male managers. They seem to be as likely to have children when they are non managers.

Female managers have a shorter time span when they expand their family. This difference is significant, but not very big. Men, both managers and non-managers have children throughout their careers, except for their very last years. Female managers who started out as non-managers within the sector are also more likely to have their children after they are promoted to managers.

The differences between men and women, both managers and non-managers seem to become smaller throughout the 17 year time span I am looking at.

In this thesis I have tried to describe what the situation is like in the bank sector. In addition I have tried to outline what might be interesting to look at in the future.

Preface

I will start of by thanking my academic advisor Geir Høgsnes. In the last year he has given me a lot of help when it comes to substantial and methodological questions I have had with my thesis. His analytical skills and knowledge in labor market research has been very helpful.

I would also like to thank Trond Petersen for giving me the opportunity to attend UC Berkeley fall 2006 and spring 2007. It was an experience I have learned a lot from. He was also very helpful in the course soc 272d, quantitative methods. This course taught me how to do analysis on panel data.

Andrew Penner has been a big help when learning STATA, and on structuring my analysis.

I would also like to thank my family and friends for the support during this thesis.

Even if this thesis could not have been done without the valuable help that I have been given, I take full responsibility for any mistakes written in this study.

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1. Introduction

The subject for this thesis is women in management in the bank sector of Norway. Women in management have become more common in Norway during the last decades but there are still a vast majority of male managers. Women in managerial positions in the labor market are a subject that is not yet fully understood in Norway. Partly because it is a relatively new phenomenon, and partly because it has not yet been done enough research on the subject. It is well known that there are more women leaders in public sector than in private. This may be because this is a more family friendly sector, or because it is easier to have control over the hours one works in this sector. There is a political goal to achieve equality between men and women.

During the last hundred years one of the biggest social movements has been the one fighting for equality between men and women in several different parts of society. This includes the labor market. In the case of Norway the government has passed different laws that should prevent inequality.

The Norwegian government has made it a goal that all children in need of daycare-services shall get it. If this becomes a reality no women or men have to stay at home to take care of children during day-time. It used to be the women's job to stay at home and take care of the children. Men were responsible for supporting the family's financial needs. This has changed and women are more independent than they used to. It is no longer so, that women have to find a husband to support them. Now it is more common for women to work full-time, just like men, even though it is still more common for women than men to work part-time.

The workers' unions have a strong hold, and even though there is different pay in different sectors, the wage gap between employees with and without manager responsibilities are small compared to other western countries.

During the last fifty years it has become more common for women to work full time. Women are said not to be as dependant of their husbands as they used to be.

This means that women no longer have the same obstacles to overcome as they used to. Because of this one should expect to see more women throughout the entire labor market.

During the last decades more and more people attain higher education before they start their career. Up until 1970 mostly men were enrolled in higher education, but now there are more women than men represented here. Men are overrepresented in technical and economical educations types, while women are more likely to be found in health care.

When women give birth, they get maternity leave from their work place, paid by the government. At the same time employers are required to give women tenure for the entire time they are on maternity leave. This means that if a promotion goes to the employee with the longest tenure, employers are not allowed to choose a man over a woman because the women have had maternity leave, and therefore have not been working as much as the man.

All of these changes in education, labor market, family planning, day-care should give women the same chances of success in building a career, as for men. But for individuals in managerial positions it might not be this easy. Having a work day with longer hours and more responsibility may still make it more difficult for women than men to be a manager.

1.1 A historic view on the development of women's situation in the labor market

More and more women have entered the work force after the Second World War. They have been working in mostly unskilled or low-skilled occupations. It was common that women started working after their children grew up. The last forty years also younger women with younger children have started working. Women that were

married used to earn less than women that were not married, because they were not expected to support the family like men was.

Fewer women than men used to attain higher education. When they started attaining higher education they also became more active in the work force. Women were, however, discriminated in pay. It was common that women were supported by their husbands, so they did not need as high pay as men. Another interesting fact is that women were often laid off from work before men, because they had husbands to support them, when companies were cutting back on the work stock. This all happened between the Second World War and the 1970`s. There were high occupational segregations. Women were more likely to work in the health-care sector, while men were likely to work in the manufacturing sector. This is still the case in Norway, even though there are changes in this field. Women were penalized for having children, and still are (Høgsnes, Penner and Petersen 2006), while men seem to be making more money when they have children.

After the Second World War men and women had separate tariffs. Because women usually had men to support them, it was said that women did not need as much money. This was the case until 1967 (Petersen 2002).

2. Previous research

There has been done a lot of research in the field of labor market research. I will try to cover what I find particularly interesting for this thesis.

The gender wage gap describes the differences in pay between men and women. There used to be big differences in pay. Women's level of education has come close to that of men, at the same time as women have started to attain the same education as men. This has led to a drop in the gender wage gap (Evensen 2006).

At the same time there is a family wage gap. Women with children earn less than women without children. In Great Britain and the USA women with children earn about 30% less than men. For women without children this wage gap is about 10% compared to men (Waldfogel 1997, Budig and England 2001). There are several findings that show that the family wage gap increase by the number of children (Buding and England 2001, Anderson, Krauser and Binder 2002). At the same time women no longer automatically leave the work force when they have children. The age of women when they have their first born child has also risen (Rønsen 2004).

While women have started to come close to the male role in the labor market, they still are responsible for most of the work at home and child related responsibilities (Hochschild 1989).

In the manufacturing sector in Norway segregation has gone down, and women are represented in all parts of the industry (Olsen 2004). Occupations that were female dominated are so even more today. This segregation may derive from employers on the demand side treating men and women differently in hiring and promotions. There might be explanations on the supply side as well. These can be human capital variables like education, dedication, both emotionally and time wise, to the employer (Olsen 2004).

Women are overrepresented in public sector, which is considered to be more family-friendly. Women are also better represented as managers in this sector. The social democratic welfare model has some negative unintended consequences for women who work full-time in Norway (Hansen 1995).

There is a penalty of motherhood and award of fatherhood. This has been the case earlier and there have been some changes. It has become easier to combine family and children for women, but there are still far more women than men, who make the move over to part-time work, when starting a family. Differences in pay are larger among people with children, than for people without. The biggest reason for why women and men have a difference in pay is because they are employed in different sectors. Between women and men employed in the same positions the differences are much smaller (Høgsnes, Penner and Petersen 2006).

There is no systematic difference between pay for men and women who are employed in the same organization on the same hierarchical level. There might be two explanations behind the low difference in pay between men and women especially among highly educated employees. The first one is the fear of discriminating against women. The other one is that women who reach the higher occupations may be especially talented or may have put more effort into the work than men. The latter is a possibility that can be combined with human capital theory, such as education, less leave of absence etc (Høgsnes, Nielsen and Petersen 2005).

Women are more likely to have jobs that pay less than men. One sector were women are in majority is the health care sector. Men are more likely to be found in the manufacturing sector (Courant 1985). This is a sector that pays a lot more than health care.

In what was called Televerket (Telenor) women who were newly hired, earned 1.1 per cent less than men in the same occupation with the same education in the years 1985-1994 (Yin 1997). In 1996 these differences for all employees has gone

down to 0.2 per cent, when controlling for education, tenure, age and part-time status, but not occupation.

In the oil company Shell there has been done research on all employees. Men and women in the same occupation in the same part of the company have the same salary (Hoel 1997). Longva (1997) has looked at newly employed chartered economists and engineers in Statoil in the time period 1973-1994. Women earn about two per cent less than their male colleagues. Research on three other big companies in Norway, Samvirke, Postbanken and Freia, shows the same results (Mastekaasa 1997). There are small differences between men and women when it comes to salaries. This means that direct pay discrimination is not common in Norway anymore. Even when one only controls for education and tenure men and women seem to earn the same (Petersen 2002).

When it comes to employment there have been some interesting findings in the bank sector in the US. In one large bank women were more likely to get employment in four lower positions, than men (Fernandez and Weinberg 1997). A different study shows that women have bigger chances of getting employment than men in positions on different levels in DNB in the years 1998-1999 (Togstad, Høgsnes and Petersen 2002).

There has also been done research on promotions, in Norway in particular (Petersen 2002). In shell fewer women than men experience promotions (Hoel 1997). Other studies find there are very small differences between men and women's promotion rate (Longva 1997, Yin 1997).

It is a fact that there are fewer women than men in management, in general. Why this is the case is still largely unknown. The higher up one gets in the hierarchical system, the bigger the employment process gets (Petersen 2002). The hiring process of the managers at the top of a company is based on large amounts of information on highly skilled people that is being evaluated by highly skilled people. In qualitative research these processes are difficult to discover, because they do not

have a full overview of what the decisions are based on. For quantitative researchers it is difficult to study such a small group of individuals (Petersen 2002).

In this paper I seek to understand to what extent the family wage gap affects the occupation working mothers have, and if working mothers are left out of the managerial positions.

3. Theory

It is a common understanding that women have a harder time in the labor market than men. Høgsnes, Nielsen and Petersen (2005) make the argument that women in management might be a small selected group. This means that the women in these positions might have different family relations, fewer children, have invested more time in the job etc. This is what I will look at in this thesis based on the theories following. I will now give an introduction to the concepts I will use throughout the thesis.

3.1 Labor market segregation theory

When it comes to segregation in the labor market it is common to talk of two axes, vertical and horizontal. These dividing lines tell us how the labor market is divided.

3.1.1 Vertical segregation

Vertical segregation has to do with what hierarchical level men and women are working on. If there is no segregation both men and women will work at the same level in the workplace. In a different situation we might see that women do not get to the same high position jobs that men do. We know that women in general are poorly represented in high-paying managerial jobs. Why this is the case is not explained by one simple reason.

This leads to the one of my research question; *do women in management have the same amount of children as their male colleagues? Said differently: Do men and women with the same number of children work at the same occupational level?* Using this theory one might expect to find that women who are in positions high in the occupational hierarchy have sacrificed having children, or have children later or

earlier than their male colleagues in order to increase their chances of promotions in the labor market.

3.1.2 Horizontal segregation

Horizontal segregation describes to what extent men and women work in the same sectors of the labor market. In other words: do we have some sectors where women are more represented than men? At what level one decides to call a sector segregated is up for discussion. Hakim (1993) divides segregation into three groups; (1) Dominated by one sex, (2) strongly segregated and (3) total segregation. These groups can still be defined differently, and it may be difficult to compare different studies even though they use the same groups (Olsen 2004). In Norway we know that the healthcare-sector is dominated by women, while the manufacturing industry is dominated by men. To expect that the labor market should be totally equal in regard to gender balance is not necessarily realistic either:

"The vagaries of reproduction ensure that women do not compromise exactly 50 per cent of the working age population. Further, despite evidence of employment discrimination, firms cannot be held exclusively responsible for the female shares of employment across countries being less than 50 per cent." (Watts 1993:316)

This means that if there are more men than women in the sector it does not necessarily mean that it is segregated. The different types of segregation do not exclude the other. While a sector might have equal gender distribution when it comes to horizontal segregation, one might find that they do not work at the same vertical level.

3.1.3 Supply side

This expression refers to the employee side of the relationship between workers and employers. What do the employees bring to the labor market and what are their preferences. Potential differences in preferences may lead people into different occupation. Women with small children may for instance look for occupations which is easier to handle while raising children. Becker (1985) looks at the supply side and makes a point that women will rationally choose occupations with a high starting salary and little reward for experience later in the career, as well as low penalty for temporary leave.

3.1.4 Demand side

The demand side has its focus on the employer. Employers might have preferences for who they think can carry out a job. This can be either conscious or unconscious. This kind of action can occur in hiring, promotion or by channeling men and women into different career paths. An example can be an employer who is hiring for a job that potentially may have a lot of overtime. It might be easier to look for men and women without children, since they might be more flexible than mothers. This is conscious statistical discrimination. This means that the employer acts deliberately upon what he or she thinks will benefit the company. It has also been done extensive research on unconscious decision-making. It is known that a lot of our actions are based on values that we are not conscious of. This means that there is also unconscious discrimination that the employer is not aware of (Petersen 2006). This can be harder to detect. This will be picked up in the discrimination chapter.

A big challenge when writing about this subject is to be able to see the difference between segregation caused by discrimination and segregation caused by the fact that different people, men and women, managers and non-managers, might have different preferences. To be more specific, differences in the labor market might

not all be because of discrimination by employers, but people might different ways to plan their lives and careers.

3.2 The glass ceiling hypothesis

The next concept I will make use of is "the glass ceiling." It was first used by a journalist from Wall Street Journal. This concept means that women and minorities do not have the same opportunities to climb on the hierarchical career ladder as white men do. They simply meet a hidden glass ceiling on the way. This means that they meet an invisible barrier that can not be explained by the usual variables, which prevent them from getting to the positions that are on the top of the hierarchical ladder. I will only concentrate on the case of the women in this paper. It may come from several types of discrimination, but I will focus on the following, direct discrimination, which means that women are treated differently and passed by when it comes to promotions and hirings(Høgsnes, Nielsen and Petersen, 2005). One can not expect that women have as many promotions as men, if there are more men working in the sector. In Norway, this topic is widely researched, both in economics and sociology, and in the fields in between.

There is critique of this theory as well. One can argue that if one does not find an explanation for why there are differences between employee groups; one can not make a concluding remark saying that employees are treated differently. Also, many of the positions women are said not to be able to get are very high up in the hierarchical ladder. As Petersen (1997) points out, this happens at a level where very few people are hired, at the same time as the processes behind the hirings are complex and based on large amounts of information. This makes it difficult to study the processes both quantitatively and qualitatively.

3.3 Discrimination theory

Discrimination needs a proper explanation. There are different types of mechanisms that are put to use. These are all a consequence of decisions, conscious or unconscious, made by the demand side of the labor market, the employers.

3.3.1 Direct pay discrimination

Direct pay discrimination refers to situation where men and women with the same expertise doing the same job, for the same company, are paid differently. This type of discrimination is not widely found in Norway (Høgsnes, Nielsen and Petersen 2003). This used to be the case when men and women had different tariffs. In other words, this is not a form discrimination that is common in Norway anymore.

3.3.2 Valuation discrimination

Valuation discrimination is a mechanism that explains how there can be a systematic wage gap between sectors where women are highly represented and sectors where men are highly represented, when they require the same education and competence. This is the form of discrimination that may occur when the labor market is horizontally segregated. This is the case in Norway, where men are found in technical industries with higher pay, than women who are more likely to be found in the health care sector (Petersen 2002).

3.3.3 Allocative discrimination

Allocative discrimination happens when there are barriers that keep women away from certain occupations. This can happen when it comes to hiring and promotions. It

can also involve leading women into occupations where there are small chances of promotions. In the bank sector there are many clerical positions where the chances of advancement probably are smaller than for the administrative positions. These two latter discrimination mechanisms are the ones I will focus on. This is all tightly connected with segregation of the labor market. Especially the last two types of discrimination, *valuation* and *allocative*, are strongly correlated, and needs to be evaluated over time.

3.3.4 Statistical discrimination

Statistical discrimination happens when individuals are discriminated against because stereotypes are held against the groups they are associated with. This occurs when an employer are hiring and makes a decision based on a foreign name or gender, Some employers might discriminate against working mothers because they think they are less productive and not flexible. Because I am looking at the entire bank sector I can try to find out if different employers hire men and women with children for the same occupations. This leads to another research question; *Are there differences between the companies when it comes to hiring of women and men with children?*

3.4 Human Capital Theory

I will use the theory of Gary Becker and Jacob Mincer, Human Capital, to describe the actions taken in the labor market by employees. Human capital can be described as investments in the worker to improve ones own working condition in the long run. There are many ways to invest in human capital. Some of the most common are education, on-the-job training, health care and acquiring information on the structure of the labor market (Becker 1962).

This brings us to a research question; *when in their career do the different employees have their children?* One might expect that the higher education one attains, the later in the career one choose to have children. Does women managers choose to have children in a shorter time span than their male colleagues? This might be the case because women stand a bigger chance of loosing human capital than men, because they are more likely to take time off from work. At the same time we know that women become older when they have their first child in other sectors (Rønsen 2004).

Another research question also arises from human capital theory; *is there a difference between younger and older employees?* More people in the labor market attain higher education. This may cause stiffer competition amongst those who have their mind set on becoming a manager. A consequence of this might be that younger employees have their children later in their career, which we know is the case in other sectors. This again might lead to a shorter time spam between the first and last child, especially for women.

Mincer used human capital to describe differences in pay amongst workers. Becker takes this a step further and uses it to describe differences in thinking about ones work situation. Briefly described one can say that human capital can be gained by investing in different types of training. This means that not only ones personality and abilities decide ones future, but also how much time and resources you are willing to spend on training and improving work skills. Assume that two people have the same abilities and equal opportunities; the one who are willing to invest in human capital throughout the career will be the one with the highest earnings in the end (Becker 1985). Of course it is important to note that there might not be total equality in the labor market, so we have to take into account labor market segregation and discrimination, but this is quite obvious.

One of the most common ways of gaining human capital is on-the-job training and experience. This can be training that is useful within one business or one position, or it can be training that is useful in other businesses or positions. In the

bank sector in Norway this can be widely found. The sector has its own educational institution, the Bank Academy. In this school employees could take different courses to improve their work skills. They had courses in banking, insurance and other financial related subjects. This could be done at the side of their work in the bank. Parts of this education were useful in the positions the employees were currently holding, and some of it was also useful in promotions.

Motherhood can make an impact on an individual's human capital. There are two ways women loose compared to men, and women without children. In order to have children one must take time off from work to bear and raise children. This reduces accumulation of work experience. This will in time affect productivity levels of women (Evensen 2006). The skill levels of workers who do not have breaks in their careers are higher than for those who have breaks, because of the continuity. This makes the more permanent workers more productive (Polacheck 2004). Additionally, the level of human capital can decrease over time. Skills and on-the-job training can be lost when taking a leave from the career. This means that women with small children do not gain capital when they are not working, and also loose some of the capital already attained, which makes it a double loss.

Another point in human capital is that what one does of investing early in the career pays of more than what one does later on. This comes as a natural result since one can harvest the benefits of the investments for a longer period of time. This is a part of human capital that is interesting to look at. In the case of this thesis one might expect to see that women in management have their children later in their career, because they need time in the beginning of their career to build up both work experience and other human capital values.

One of the explanations often used as to why there are fewer women than men in management comes from human capital theory. If women act according to this theory, they take into account that they will have more leave of absences than men because of childbirth and other family responsibilities, and choose jobs with as high starting salary as possible, and smaller chances of promotions (Becker 1985). This

can explain why there are more women in public sector (Hansen 1995). This also means that women may choose educations that lead into occupations with little hope of advancing much on the hierarchical ladder. This is the part of human capital I will focus mostly on. The women I will look at are situated in a sector where the number of men and women is quite equal, but there are still big differences. A lot more men than women have higher education in the earlier years. But this phenomenon changes in the latter years. This means that there is a change in the labor market that does not support this theory. This will be thoroughly looked at both in the data- and analysis-chapter.

Different occupations have different atrophy rate. Atrophy rate is the loss of earning potential that can be attributed to periods of work intermittence (Polacheck 1981). According to this statement occupations with little specialized human capital are easier to re-enter after leave of absence. This means that the penalty of taking a leave will be bigger for women with higher education, because they are more likely to be in highly skilled occupations. Women in management are likely to have higher education. If this is the case one should be able to see it in this thesis, because of the width of the data set. There are women with a very diverse educational background present, when one looks at the women who are not managers as well.

But, there are other views here to. Anderson, Krause and Binder (2003) argue that time and flexibility at work is important for working mothers with young children. This privilege is more likely to be found in occupations that demand highly skilled workers, which means that there might not be as much of a penalty as human capital theory predicts. This might also affect employees in management. They have more work related responsibilities and many probably work longer hours than non-managers, but these occupations may also be more flexible. Many may have flexible work hours and have the opportunity to work from home, for instance.

So, this means that there is a paradox here. Women may have a harder time getting to the managerial positions, if they choose to have children early in their career. It may also be so that they do not have enough incentives to invest as much in

their career, since the difference in pay, between managers and non-managers, is so small. On the other side women who are highly skilled also might have the easiest access to privileges such as flexible hours and control of own work time. If this is the case, then one should see that women with higher education have as many children if not more than employees with no or little education.

What I am trying to do in this paper is to see if children are one of the causes why there is a difference between women and men in this sector. This thesis is meant mostly as a description, in other words to see what status is like, and the development since 1979. This will be a base on which later on one can do more research on the processes behind this phenomenon.

3.5 Gender Specific Socialization

Gender specific socialization can be used to explain some of the differences between men and women in the labor market. This theory mainly consists of four different ways of which it affects the labor market on the supply side (Corcoran and Courant 1985).

First, socialization may lead women to be more anxious and fearful than men. This might have the consequence that women do not feel that it is worth trying to advance on the hierarchical ladder.

Second, Gender specific socialization may directly affect employees' personality and skills. Girls are more likely to be brought up to be more responsible, dependant and less analytical. They are brought up to be more people-oriented (Corcoran and Courant 1985). This may explain why there are more women than men in the health care sector. In the bank sector there are different types of positions that have different degrees of contact with the customer. We might expect to find that a

majority of women work in the lower levels of the industry, such as in clerical positions where people-contact is a big part of the job.

Third, children may internalize the cultural sex stereo types, and later choose occupations that fit to these stereotypes(Corcoran and Courant 1985). This may be an explanation as to why the health care sector is dominated by women and the manufacturing sector is dominated by men.

Forth, gender specific socialization may affect the values we have of what is appropriate work for men and women. This means that both men and women are influenced by the culture they grow up in, and therefore choose what they have been taught to do(Corcoran and Courant 1985).

This theory is used to explain the supply side of the labor market. The first two points are closely linked to human capital theory. One can say that women might lack some skills that are useful in the labor market, due to their upbringing. The latter two says that equally qualified men and women may value the same jobs differently and thus choose different career paths, even with the same education (Corcoran and Courant 1985). This means that the differences found in the labor market is not necessarily discrimination, it may be chosen by the employees themselves, conscious or unconscious.

According to this theory it is not impossible that women and men with the same background, in the matter of children and education, can still choose different career moves, without discrimination being present. We know that many managers have an educational background as chartered engineering and economics. This means that if women choose different education types, they minimize their chances of becoming managers at an early point in their careers. Since the 1970's more and more women have attained higher education (Petersen 2002). This might be a sign that more women also attain the same education types that men have, and therefore have greater chances of getting into management than before. This leads to one of the

research questions; *Do men and women with the same background work at the same hierarchical level in the labor markets?*

4. Goals of The Thesis, Ethics and Contribution to science

4.1 Questions

To summarize, what has been said so far; the main goal of this thesis is to figure out if women in management have to sacrifice parts of their nuclear family life in order to make a career as manager. I will divide the project into two axes: a comparison between men and women in management, and a comparison between women in management and individuals not in management. First, I will look at the sex distribution and what education types that are the most common. Then I will use different questions to highlight the situation I am trying to describe:

1. Research goal

What are the most common education types in this sector, both for managers and non-managers? Are men and women equally represented within these? Is there a difference in number of children between the different education types? These questions will be answered in the descriptive data chapter, and will be the foundation of the rest of the analysis.

2. Research goal

Are there differences among the employees between the different companies within this sector? Put in other words: Do businesses employ men and women with the same amount of children equally in manager and non-manager occupations?

3. Research goal

When in the career do employees have their children? Within the years 1979-1996, do managers or non-managers have the highest chance of becoming pregnant, or having a pregnant spouse? When we look at the individuals that go from non-manager to manager within the sector, when are they most likely to have children?

4. Research goal

When do the employees have their first and last child? How long time do employees have between the first and the last child? Can one expect that as it becomes more common to attain higher education, the time span from first to last child decrease because the individuals start working at a later time in their life?

The main goal of the thesis is to see if women in management have sacrificed family life in order to have a career and to see if there is anything that recognizes this group of women. The data set I will use covers the years 1979-1996. This means that I throughout the project will follow the changes in the situation.

4.2 Contribution to science

This project has as a main goal to create a picture of women in management in the bank sector in Norway. This is a group of people, in regard to children, that there has not been done a lot of research on earlier. I will document some of the characteristics of women in management, in the bank sector. This will be done at several levels, occupations and in the bank-sector as a whole. This will be a contribution to everyone who thinks equality in the labor market is of importance. Businesses who whishes to understand the processes behind promotions and hiring, will also benefit

from this knowledge. This paper should be of significance to science in the field of inequality in the labor market. This means that it will answer a part of the inequality and discrimination that women may be subject to. This paper will only contribute to a small part of this explanation. Nonetheless, it is of importance to understand the bigger picture.

4.3 Ethical considerations

I will make use of the Norwegian model of research ethics. I consider this project as ethically safe because none of the individuals are possible to recognize in the data set. Instead of using "birth number", Statistics Norway has given the individuals personal identification numbers. This means that I will not be able to identify anyone directly from the data set or in my thesis. At the same time the large number of individuals means that I will not be writing about one very small group of people that might be hurt by the conclusions in this thesis. I will not focus on any groups that are particularly vulnerable. I have had an academic advisor to ask concerning all ethical questions in the process of this thesis, at the same time I take full responsibility of the decisions made and the conclusions of this thesis.

5. Data and Methods

5.1.1 Presentation of the data set

My dataset is register data and individual salary information of employees in the bank sector in Norway. These start in 1979 and go all the way to 1996. The data utilized in this paper is a dataset that comes from Statistics Norway. A few individuals can be found throughout the whole set, though most are recorded for a number of years, but not all.

This data set is right censored, which is important to explain. We do not have information on what happens to the individuals after 1996. This is quite self explanatory, and it gives us one problem. We can not say if the individuals are done having children in 1996. The chances are that many of the employees are not, especially the younger ones. I will try to adjust the analysis according to this problem. I will use different age groups for the employees, in order to isolate the ones who might have more children after our data ends. By doing this I will be able to at least have one age group where one can be fairly safe the individuals are done having children.

The differences in gender representation are minimal. I will now describe the sector; then I will look at the variables that I will us. This dataset will be large and should make it possible to answer the questions that I am asking.

Table 1 contains descriptive statistics of the bank sector:

Table 1

Descriptive statistics	
N:	49902
Individual years:	437000
Establishments:	1652
Time span:	1979-1996
Managers:	18889

*The bank sector***:**

This data consists of all the financial institutions in Norway. It consists of close to 50.000 individuals and 437.000 individual-years, which means that we follow each individual in 8.7 years on average. There are employees in this sector with many different education types and lengths. In order to make the education types more operational I have made the decision to simplify the most common. Each education type I will use contains not only the education type stated but any variation of the type, if it is closely linked. The most common education by far is the bank academy. This is the bank sector's own educational institution (It is now owned by BI Norwegian School of Management). Employees in this sector take courses of different lengths; within subjects such as finance, insurance and other bank-related courses. The most common education types within academic educations are chartered economists, economists, chartered engineers, engineers, lawyer and accountants. All of these education types are the most common among the managers.

I plan on dividing my project in several parts. In the first part I will see if the amount of women with children varies from men with children, in management. This

will be done on company level, because it might be interesting to se if there are differences in the numbers between and within the different companies. By doing the analysis on company level we should be able to point out if there are any particularly bad companies.

Second I want to look at the number of men and women in non-manager positions who have children. Are there some occupations where there are fewer women with children, for instance managers? The age of the children is also of great interest. There might be certain positions that are difficult to combine with small children. Since this analysis will be done on both managers and non-managers, I will do them on individual level. This will be more thoroughly explained in the methods chapter.

5.1.2 Description of the variables

The variables I will be using are:

Identification: This variable is unique for all the individuals. This makes it possible to keep the individuals sorted throughout all years. It makes sure no individuals are duplicated in the dataset, and makes it possible to follow them in time.

Years: One variable for each year the data set covers. This, together with identification numbers, is what makes it panel data.

Dependant variables:

Children: The data is coded so that it gives information on number of children, age, and birth year. This means that I know when the individuals have kids and will be able to follow change over time.

Children between 0 and 6 years: I will make use of one variable for having kids between 0 and 6 years of age. I have made this choice because it will cover all children under the legal school age in 1979-1996.

Children between 7 and 15 years: The second variable will be between 7 and 15. This variable will cover all children in their mandatory school years. I have decided to not include children over the age of 15 because some move away from their parents in order to attend school different places than where their parents live.

Pregnant or not: I will also make a variable that marks the year employees get pregnant themselves or have a pregnant spouse. I do this so that it will be possible to see when in their career women get pregnant, and men have a pregnant spouse. This is a dummy variable.

Age when having first child: I will also make a variable that marks at what age the individuals have their first child, to control for differences between the different employee-groups.

Age when having last child: This variable marks the years the different individuals have their last child.

Time span between first and last child: The last children-variable will measure the time from the first to the last birth. This will show the length of time between the first and last child an employee get.

Independent variables:

Sex: Variable is coded 0 for man and 1 for woman. This way one can see the effect of being woman in difference to men, which is practical since my focus is on women.

Age: Value is coded equal to an individual's age. This is the age of the employees in the data set.

Education: These variables will be used in different ways. The first variable will measure length of education. The second variable will measure type of education. I will also use dummy variables for the most common education types. These will all measure any change throughout the data set.

Bank academy: This variable consists of all the different educations within the Bank academy. This is the only of the most education type where there are more women than men.

Most common academic educations: This variable gathers all the common academic educations types. They are chartered economists, economists, chartered engineers, engineers, lawyer and accountants. Men are over represented within all these education types.

Occupation: This variable will measure at what level, in any given business, an employee works at in the data set. This will change throughout the set. This variable originally comes very detailed from Statistics Norway. It also has different codes for the different sector. I have made a simplification of this, to make it more workable. This variable will be used in the fixed-effects analysis.

Manager or not: This variable reports if the individuals have leadership responsibility or not. I have chosen to include all employees in management in this category, even though it would be interesting to look at managers at the top of the companies as well. The problem with looking at this group alone is that it is a very small group of people. They have probably been carefully selected and we do not have enough information on them to make any scientific conclusions.

5.1.3 More detailed descriptives

In this part I will describe how the sector looks in relation to men and women, managers and non-managers, and this should also give an answer to the first research question; what are the most common education types and what does the gender representation look like? What education types are the most common among managers? In this part it will be interesting to look at numbers of children and the age of them among the individuals with the most common education types. It will be of interest to observe both the differences within and between sexes. We might expect there to be a difference in family situation between female managers and the others, because it might be harder to combine family-life and managerial positions for women than for men, if women are have the main responsibility for the work at home. I have chosen to answer the first research question in this chapter, because of its descriptive nature. The latter analysis will build on this. I will only use cross tables in this part, so it should be easy to understand. I will also try to explain how the

I will now look at the sex-distribution for employees with most common education types. Then I will report number of children for each group of educations. Then I will divide the children into two age-groups in order to see if there are differences between the parents of younger and older children. The latter part of this chapter will answer to the first research question.

Table 2 shows the representation and number of men and women within the sector:

Table 2

Male	51.76%
Female	48.24%
N	49902
Sex distribution	

In the bank sector there are about the same amount of men and women. There is little variation between the different years. There is no horizontal segregation in this sector; but this does not mean that men and women work at the same hierarchical level. I have chosen to start of with looking at the seven most common education types. They are bank academy, chartered economist, economist, engineer, chartered engineer, lawyer, and accountant. These education types are characterized by the facts that there are over a thousand employees within each education type each year. Women are underrepresented within each of the most common education types, except for in the bank academy, but one can see a clear increase in number of women within these education types throughout the time span. We know from previous research that managers usually have the most common academic education types (Petersen 2002). This means that if women are under represented within the most common academic education types they may also stand a smaller chance of becoming managers. On the other side, this sector has its own educational institution, where the individuals with the education from this place may have the experience and knowledge specifically needed in managers positions within this sector. After looking at the male/female representation within education types, I will look at average number of kids within and between each education type. I will then move on to looking at the age of the children to observe possible differences between education type and sex. I will be using two age groups: 6 years of age and younger, and between 7 and 16.

The under representation of women in the most common education types in the bank sector

Women are under-represented in the most common academic education types. In 1979 there are none of the most common academic education types where women are represented with more than 10 %. This may seem odd, but can be explained by the fact that a lot of the female employees in this sector have their education from the Bank Academy. This was the bank-sector's own educational-institution, and the employees took different courses here. This means that a lot of the education-types especially women are represented in do not appear to be as big as the men's most common education types.

Table 3 shows sex distribution for men and women in the most common education types, in per cent:

Bank

Table 3	1979		1985		1990		1996	
	Male	Female	Male	Female	Male	Female	Male	Female
Chartered Economist	90.2	9.8	83.2	16.8	79.1	20.9	78.7	21.4
Economist	95.3	4.7	95.1	4.9	92.4	7.6	90.4	9.7
Engineer	94.6	5.4	89.5	10.5	84.0	16.0	82.5	17.5
Chartered Engineer	97.8	2.2	95.6	4.4	94.8	5.2	94.1	5.9
Lawyer	92.1	7.9	88.0	12.0	86.5	13.5	84.3	15.7
Accountant	90.7	9.3	87.5	12.5	84.8	15.2	79.9	20.1
Bank academy	49.8	51.2	44.9	55.1	41.8	58.8	43.8	56.2
Other	39.8	60.2	43.4	56.6	46.1	53.9	48.6	51.4
The seven most common education types and sex distribution, in per cent								
N:49902								

As expected, we can see an increase in women within all the education types from 1979 to 1996. Per cent wise one can observe that twice as many women with these education types work in the sector in 1996 than in 1979. This happens at the same time as it becomes more common for women to attain higher education. In this sector the education types with the fewest women are both the engineer types and the economists in 1979. In 1996 women stands for one fifth of the total number of chartered economists and accountants. These education types are common among managers in other sectors (Petersen 2002). We can observe a steady increase for all women. One can observe that women are in a majority in the group of other educations. Since they are under represented in the most common education groups, except in the Bank academy, and there is a quite equal gender representation in the sector, this is only natural. We now know that women in this sector become more educated at the same rate as the rest of the Norwegian people. Not only do they become more educated, but also started attaining the same education as men. This also means that women should have greater chances of getting managerial positions as they have the education types that are common among managers in other sectors.

I will now look at how many young children the different employees have. I expect that the ones with the most common academic education have fewer children than the ones from Bank Academy because, because the educations are usually longer.

Table 4 shows the mean number of children between 0 and 6 for women and men for each education group.

Kids between 0 and 6 years of age:

Table 4	1981		1985		1990		1996	
	Male	Female	Male	Female	Male	Female	Male	Female
Chartered economist	1.0	0.5	0.9	0.3	0.8	0.5	0.8	1.2
Economist	0.8	0.4	0.7	0.1	0.7	0.4	0.6	0.5
Engineer	0.6	0.6	0.9	0.4	0.9	0.7	0.6	1.1
Chartered engineer	1.0	0.5	0.9	0.9	0.5	0.9	0.4	1.0
Lawyer	0.7	0.4	0.7	0.7	0.6	0.7	0.4	0.6
Accountant	0.4	0.5	0.5	1.1	0.4	0.9	0.3	0.8
Bank academy	0.8	0.4	0.8	0.3	0.8	0.4	0.6	0.3
Other	0.6	0.4	0.6	0.4	0.5	0.4	0.4	0.5
Number of young children by the most common education types and sex								
N:49902								

For the chartered economists one can observe that men in average have one child under the age of 7, while the same number for women is below 0.5. These numbers drop for both groups in the next time period, 1985, but then starts rising for women. In 1996 the number for women has increased to 1.2 children in average, while the men have decreased to 0.8. This means that as more women with this educational background come into this sector, they also have more children. For the chartered engineers one can observe that men in average have twice as many children less than 7 years of age as women in 1981. This is reversed in 1996. Women now have one child less than 7 years of age in average while men only have 0.4. Just as with the

chartered economists one can see that as more women with this education enters the sector they also become more diverse when it comes to number of children. The women from the bank academy have few young children. There is not much development over the years either. For the group of all the other education types' one can observe that the numbers are more stable than for the most common education types. They are slightly decreasing from 1980 to 1996. This means that it is less common to have young children for all employees in the later years.

One might expect that the children in the next age group are more common among the employees. Children that are in this age group might be less demanding on the parents. In this group they are attending school, and are no longer in need of being picked up from a kinder garden that closes early.

Table 5 shows number of children between 7 and 15 years of age for the most common education types:

Kids between 7 and 15 years of age: **Bank**

Table 5	1981		1985		1990		1996	
	Male	Female	Male	Female	Male	Female	Male	Female
Chartered economist	1.0	0.5	1.0	0.5	1.0	0.4	1.0	0.5
Economist	1.0	0.7	1.1	0.9	0.9	0.3	0.9	0.2
Engineer	1.0	0.6	1.0	0.2	0.8	0.5	1.0	0.8
Chartered engineer	0.7	0.0	0.9	0.6	1.1	0.6	0.7	0.5
Lawyer	0.9	0.5	0.8	0.4	0.9	0.7	0.9	0.8
Accountant	1.1	0.3	0.9	0.5	0.7	0.6	0.7	0.7
Bank academy	0.4	0.5	0.6	0.4	0.9	0.5	1.0	0.5
Other	0.9	0.8	0.9	0.7	0.8	0.5	0.7	0.5
Number of older children by the most common education types and sex distribution								
N: 49902								

When it comes to the next age group of children one can observe that the numbers for chartered economists are quite stable throughout the whole time period. While men

have 1 child between the age of 7 and 15, women have only 0.5. For the economists men have a slight decrease from 1 to 0.9, while women have a more drastic drop. They go from 0.7 to 0.2. There can be two reasons for this drop; there might be no new hiring of women. This means that the women already hired who have children will grow out of the group with young children, simply because they get older. Since the data tells us that there is an increase of women with this education type we know that this is not the case. This means that the only explanation is that the women who get in to this sector with this education after 1985 have fewer children. If the newly employed women who are economists are young this is not necessarily a big surprise. For the employees with their educational background from the Bank Academy, one can observe that men have more children in this age group in the time span we are looking at. The number for women was stable at 0.5 through out the years. When we look at the numbers for all the other education types one can observe that they are dropping. This is interesting because all the most common education types are fairly stable in comparison.

Summary

Women are under represented when it comes to the most common academic education types. However they have experienced an increase in these educations from 1979 to 1996. At the same time the total number of women has remained stable. This means that as women with low education goes out of the sector, more women with higher education comes in. This is similar to what seams to be the case in the rest of the labor market. More women attain higher education. Using gender specific socialization theory one would expect that women and men choose different educations. This is so to a certain extent, in this sector, but it is changing. At the same time they are probably making themselves more attractive as managers because more of them get the education that is common for managers. There is one problem here. We only have knowledge about this sector. This means that we do not know if these education types become more common for women in general, or if it is just the case

in this sector. When it comes to age and number of children the results varies more. It becomes more common to have young children for women, but not for the men in this sector, except for the accountants. This is interesting. It may be so because as the employees attain more education, they also get older when they start working. This means that they probably have a shorter period of time when it is practical to have children. The male employees with the other education types have fewer children through out the years. This is the case for both younger and older children.

Knowing this it will be interesting to look at the managers. As more women attain the education types common for managers in other sectors, one might expect to see that more women become managers within this sector as well. Among these women one can also observe that they also have more children.

The managers

In the next part of the descriptive statistics I will bring the focus over to managers. As one can observe from the table below there are some big differences in managerial positions. First, I will look at the numbers in gender distribution, to see what the differences are like.

Table 6 shows how many of the employees within each sex are managers and non-managers, in per cent:

Gender differences for managers and non-managers, in per cent

Table nr. 6	1979		1985		1990		1996	
	Male	Female	Male	Female	Male	Female	Male	Female
Manager	33.3	1.2	35.2	2.1	47.4	14.2	49.6	18.1
Non-manager	66.7	98.8	64.8	97.9	52.6	85.8	50.4	81.9
N: 49902	100%							

In 1979 one third of all the male employees are managers. The number for women is a little over 1 per cent. There is a small increase towards 1985. Male managers rise to almost 50 per cent in 1990 and 1996. Female managers pass 14 per cent in 1990 and 18 per cent in 1996. Half of all the men are managers, while only one in five women is managers. This can be seen as an indication that women in management are an especially selected group, or, women might have different values and choose not to become managers. According to Becker (1985) one might expect to find that the few women in management are in a different family situation than the other women. The one thing we can say is that this sector is vertically segregated. Women are strongly under represented in managerial positions. This alone does not mean that we can make any conclusions about discrimination or glass ceiling. The differences between men and women become smaller over the years.

Because I decided to include all the employees with leadership responsibilities in the managerial group, it has become very large. This is particularly visible for the men, but it was necessary in order to get enough women into this group.

I will now look at mean number of kids for managers and non-managers. We know that men are over represented as managers, at the same time as we know that they have the most children amongst the most common education types. This is an indicator that managers are likely to have the most children. According to previous research one should expect to find that men have more children than women, because they gain from starting a family, while women lose (Becker 1985). Gender specific socialization also suggests that women are brought up to have different values than men, and possibly chose family life and children over a career as a manager. This means that the group of non-managers, where women are over represented also stand a good chance of having many children.

Table 7 shows number of children for managers and non-managers:

Average number of kids for managers and non-managers

Table nr.7	1979	1985	1990	1996
Manager	2	1.9	2	2
Non-manager	1.8	1.8	1.8	1.8
N:49902				

One can observe that managers have more children than non-managers. While the numbers for non-managers are stable throughout the time span, one can observe a slight decrease for managers. In this case we have to take into account that managers are probably older than the non-managers. This is so because it takes time to become a manager, so this group probably consists over older people, while the non-managers probably are of all ages. We also know that most managers are men, and they are likely to have more children than the women in this sector, within the most common academic education types. I will now include sex in the table. This way the vast majority of male managers will not shift the result of female managers.

Table 8 shows number of children for all employees:

Average number of kids for male and female managers, and non-managers

Table nr. 8	1979		1985		1990		1996	
	Male	Female	Male	Female	Male	Female	Male	Female
Manager	2.1	1.2	2.1	1.5	2.1	1.5	2.1	1.6
Non-manager	1.9	1.8	1.9	1.8	1.9	1.8	1.8	1.8
N:49902								

Here one can see that men have more children than women in general. The group with the least children is female managers. Female and male non-managers and male managers are at top. The male managers, female and male non-managers are all stable from 1979 to 1996. Female managers experience an increase from 1.2 to 1.6 children in the same time-period. This can be seen as a sign that gender specific socialization is no longer as visible as it was in this sector. So far it looks like women in management become more alike the other employee groups. The next step in our analysis is to look at number of children in different age groups. I will look at young children (from the age of 0 to 6) and older children (from 7 to 15). We might expect to find that it is harder to combine work with small children rather than older children, especially for women in management.

One important thing to point out here is that building a career takes time. In order to get into management one needs experience, which takes time. This means that employees, who get children at a young age, might not have young children at the time they make manager, because it takes time to get to the point where one is ready to become a manager. In practice this means that if managers do not have young children, they are not necessarily being discriminated against. At the same time women are only able to have children when they are fairly young, while men are able for a longer period of time. Previous research shows that women are more likely to have children later in their career today rather than earlier like was the case before (Rønsen 2004). So it will not be surprising if women have young children late in their child bearing years, and possibly fewer children in total. This is why it is

important to look at different age-groups, as well as all children, to get a good explanation of the situation.

Table 9 shows number of children below mandatory school age, for managers and non-managers:

Average number of kids 6 years and under for managers and non-managers

Table nr. 9	1979	1985	1990	1996
Manager	0.6	0.5	0.5	0.5
Non-manager	0.5	0.4	0.4	0.5
N: 49902				

One can observe that managers have more children than non-managers. More than half the managers in this sector have one child less than 6 years of age. There is a slight decrease over the time span for managers. This is not as visible for non-managers. This was not expected as I thought managers might be done having children by the time they became managers. Adding sex to the table may explain the high numbers among the managers. Women managers probably have fewer young children, at the same time as they are older by the time they start having children. Women are only fertile until they get to their forties or so, and therefore I expect that women managers in general have few young children.

Table 10 shows number of young children for men and women, managers and non-managers:

Average number of kids 6 years and under for male and female managers and non-managers

Table nr. 10	1979		1985		1990		1996	
	Male	Female	Male	Female	Male	Female	Male	Female
Manager	0.6	0.3	0.6	0.3	0.6	0.3	0.6	0.4
Non-manager	0.6	0.4	0.5	0.3	0.6	0.4	0.6	0.4
N: 49902								

When one controls for sex, one can observe the same trend as for children with no age limit. Men have more children than the women. The average numbers are all quite stable throughout the time span. Male non-managers have as many children as male managers. Female managers have almost half as many young children as male managers. Female managers experience a slight increase during the time span. What is surprising here is that women in both groups have the same number of children. It is less common for women in this sector to have young children while working. This can be seen in the light of the previous research which shows that buying services and help around the house is costly in Norway (Petersen 2002), and more people choose to work less in order to do the house work themselves. It might be cheaper for many people to leave the labor market for a period of time, rather than paying others to do house chores and taking care of children.

I will now look at older children, in the group 7-15 years, which is mandatory school age. In this group one might expect not to see such a big difference between managers and non-managers. It should be easier to combine a career with children, when they are in this age group. At the same time one could assume that managers have reached such an age by the time they become managers that many of their children are becoming older. I assume that older children are less demanding because they are in school, and there is no need to pick them up from a kinder garden, that closes early.

Table 11 shows number of children between 7 and 15 years of age, for managers and non-managers:

Average number of kids between 7 and 15 years for managers and non-managers

Table nr. 11	1979	1985	1990	1996
Manager	1.0	0.8	0.7	0.6
Non-manager	0.5	0.4	0.4	0.5
N: 49902				

As expected one can observe that it is more common to have older children in this sector. One can observe that managers in average have 1 child between 7 and 15 years of age in 1979. This number decrease throughout the time span until it ends on 0.6 in 1996. In the case of the non-managers one can observe that they have on average 0.5 children in 1979, which drops a bit then rise to 0.5 again in 1996. In general managers have the most children in this age group as well. I did not expect to see such a difference in the first years of the data. It becomes less common to have children in school age for managers. This may have several reasons. More women with fewer children than their male colleagues might become managers. It might also be so that managers are getting younger as more people have the right education to be managers.

I will look into this in the analysis in chapter 7. As with the young children I expect to see a difference when one adds sex to the table.

Table 12 shows number of children between 7 and 15, for men and women, managers and non-managers:

Average number of children between 7 and 15 for male and female managers and non-managers

Table nr. 12	1979		1985		1990		1996	
	Male	Female	Male	Female	Male	Female	Male	Female
Manager	1.0	0.4	0.9	0.4	0.8	0.4	0.7	0.4
Non-manager	0.5	0.5	0.4	0.3	0.5	0.4	0.7	0.5
N: 49902								

As expected one can observe that male managers have the most children, even though the group experience a drop in numbers throughout the time span. They go from 1 child in 1979 to 0.7 in 1996. Female managers have the lowest average number of older children in all time periods, except in 1990, where female non-managers have the fewest. Still, male managers have the most children. The male non-managers experience an increase in children and end up having as many children as the male managers in 1996. We can observe that men have more children than women in this age group. But the difference between male and female managers is becoming a lot smaller.

Summary

One can observe that male managers have the most children in all cases. Except for older children female managers have the fewest children. This finding is interesting. Because it takes time to build a career, and become a manager, it does not seem so unnatural that managers do not have small children. I will look into when in their careers different employee groups have their children in the last analysis chapter.

Previous research has shown that women overall do not receive a large penalty for having children, while children have a positive effect for men on pay. Petersen, Høgsnes and Penner (2006) have looked at children's effect on wage increase and promotions. Children have no or little effect on wage increase for

women, although women have an overall lower wage increase than men. However, in the case of promotion, children have a negative effect on women's promotion rate in the manufacturing sector. This might be seen here as well when we see that women have fewer children than men overall, but also that women have fewer children as managers, but that the opposite is true for men: Male managers have overall more children than non-managers and women in all positions.

Women with children's lower promotion rate in the manufacturing sector can theoretically have several explanations: first that they meet discrimination entering higher levels of the labor market, secondly, that they have different priorities, or thirdly, it can be due to the difficulty of combining family life and career. In this sector we know that female managers are becoming more common. At the same time they have more children, in both age groups. This means that men and women's promotion rates in this sector are getting closer to the men's.

One of the biggest issues with these numbers is that it takes time to become a manager, so if managers were to have fewer young children than other employee-groups, this would not necessarily be shocking. There might be a bigger surprise that they have young children at all. This means that it might be more surprising that the male managers have as many children that they do.

What is to be done next?

The end of this chapter is an answer to the questions in the first research question, and serves as an important description of the bank sector. I have chosen to put this in the data description chapter because these results should not be too hard to comprehend. Since it is cross tables they need no explanation as to how they are made, and how they are read. These past numbers are taken from the data set as a whole.

The bank sector consists of many companies of different sizes. This can provoke different types of methodologically problems. I will take steps in order

to avoid these, which will be explained in the next chapter, methods. The next step in the analysis is to look at company level, to see the average difference between and within companies. The reason for looking at both within and between variations is to be able to see if there are differences between companies. By controlling for size of the company we can be sure that not one big company displaces the results. In order to see the change in this phenomenon by years, fixed-effects models are a usable approach. This will be done after the methods chapter in order to first explain what and how I will do the remaining analysis.

5.2 Methods

I will make use of different types of quantitative methods. I have used quite simple statistical analysis so far, and will use linear regression to explore the different questions in the following chapters. Linear regression can be done using several types of models. I will use OLS (Ordinary Least Squares), Within- and between-effects. These will be explained in this chapter.

I will do analysis on three different levels. First, I will look at the sector level. This means that I will look at the sector as a whole. Second, I will look at company level, also called establishment level. This means that I will compare different individuals within each company. By doing this I will be able to make sure that if one company is particularly bad, it will not affect all the other estimates, by shifting them. This method also takes care of the problem with companies of different size. This problem we faced in the previous chapter where the vast majority of male managers made it look like female managers also had as many children. Thirdly, I will do analysis on the individuals that go from being non-managers to managers. By taking these steps I will make good use of the structure of the data set, which is panel data.

5.2.1 Ordinary Least Squares (OLS)

OLS is a method that models the relationship between a dependant variable Y and independent variables X. In other words, if X increase by 1, how much does Y change with?

The following equation shows how the regression line is estimated from OLS. In this formula β_0 is called the constant. This means that it is the average value of the dependant variable if all the independent variables have the value zero. β_1 is the first independent variable. X_1 is the value of the independent variable. ε is the error term. The error term is the value of the unexplained variance in the equation. This equation assumes that there is a linear function between the dependant and independent variables. This means that it may be unreliable in some occasions. At the same time it considers the data to be pooled, which means that it does not take into consideration that the data can be organized by years.

1. $$\mathbf{y} = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \varepsilon$$

One can theoretically use this model to analyze panel data by using interaction coefficients with independent variables by the different years, but this would be complicated and time consuming. Especially in the case of panel data there are other equations that describe the data better. The error term, or unexplained variance, can be made smaller; by using the equations I will describe bellow.

5.2.2 Fixed-effects models

As a supplement to the OLS linear regression I will use fixed-effects models. These methods are well suited for panel data analysis. They are models that suit this data

set, so that one can create models that describe the change over years, at the same time as the error term ε is smaller than with the OLS. Given the shape of the data, multiple observations per individual, there are several ways to do the analysis.

There are continuous and categorical variables, time constant and time changing variables. Time constant variables can be sex, and time changing can be wages. I will make use of two different models that describe the data in different ways. Both the models use two measuring levels. This means that we have one "upper" level and one "lower". In practice this means that one categorizes the data set, either with years gone by, or individuals. Put in other words; since the data set consists of multiple observations for each individual, one categorizes them by years. One might also look at companies, and employees within companies. In this data set there are both multiple observations for each individual, and multiple employees within companies. This is what I mentioned in the data chapter. At the end of these equation explanations, I will describe how I have decided to do the analysis, considering that the data set includes multiple variables that can act as an "upper" level.

2. $$y = X\beta + D\alpha + \varepsilon$$

This model is an equation used in panel data analysis. This estimator measures the mean change within our upper level variable. When we have repeated observations over time, it is possible to relate the observations for each upper level variable to the regression line (Petersen, 2002:11). In the first analysis I will do, it measures changes on the employees within each company throughout their time in the data set. It does this by creating a dummy for each company. In our data set, with many individuals and many observations for each individual this would be an impossible task to do by hand. This model can only be used on time-varying variables, since time-constant variable does not change over time. Gender is one variable that would be dropped in

this model. When using this model one simply ignores that there might be between-individual variation.

The fixed effects model, also called *within estimator*, can be used to answer questions that have to do with individual change over time, for more than two time periods (Halaby 2004:522). It estimates effects for time-varying variables, and also controls for all unmeasured time-constant and time-varying variables. However, if the dataset have time-constant variables, these are not accounted for. And individuals with time-constant values on the variables won't contribute in the estimations, which leave us with a smaller sample.

In my analysis I will use this model to look at the individuals` average value within each company. In other words, I will look at the average value of all the employees within companies. By doing the analysis this way, the results can be shifted if a large company is particularly bad, so we need an estimator that makes us able to see what the results are between each company too.

5.2.3 Between estimator

This estimator uses the averages over time of the individual-level dependent variable to measure the differences between individuals over time. The independent variables inserted into the equation are also individual-level averages over time. For each individual, only one record is inserted into the equation. In other words, this is not the most efficient way of using the data. That is reflected in higher standard errors and a higher error-term than using more data-effective methods. The error-term is the average error over time. However, this method can be useful, especially when used in combination with other methods, like the within or fixed effects-estimator (Wooldridge, 2003).

Since the between-estimator compares the average outcomes of individuals over time, a typical research question could be whether the average effect of

education on wages is higher for men than for women over a given period of time. Combined with the fixed effects method, you could isolate the effect of being male or female and compare that with the individual-level return of education over time. To make that an effective comparison, one should do separate fixed-effect analysis for men and women, since the fixed effects estimator is only good for time-changing variables (Halaby 2004:520).

3. $$y = \beta_{0B} + \beta_{1B\bar{\chi}_i} + \beta_{2BZ\,i} + \xi_i$$

I will use this estimator to see if there are differences within each company. If the results of the between model are very different from the results of the within model, I know that the within estimator is shifted because there are big differences within each company, and it only have limited value because of this.

In all my analysis I will use a significance level of 5%. This means that there is a 95% chance of the coefficients being descriptive of the total data.

5.2.4 How are the analysis chapters built up?

A mentioned above, the analysis I will do later on can be categorized either by each year the individuals are present in the data set, or as employees within companies. I have decided to do both. I will start of by using companies as my "upper" level. The reason for doing this is simple. Different companies might act differently when it comes to hiring and promotions. At the same time there are companies of different sizes in the sector. If a large company turns out very different from the rest of sector, it may displace the entire results. So in order to avoid this, using the between estimator, the analysis will take into account that there are different companies in the data set. Doing this does not mean that one can not include the panel structure of the data; it only means that they will be included as dummy-variables.

Later on, when I do not consider company-size to be crucial for the results, I will use individuals as upper level.

I will divide the analysis in chapter 6 into several parts using all of the above models: the OLS, the between- and the within models. In the first part I will look at the difference between all employees, both in management and not, and in the second one I will look at female managers and male managers. This means that the within and between estimator explained in the beginning of this chapter will be used in two different analysis. It will be used to distinguish the differences between and within both companies and sex. In the first table of the upcoming chapter the estimators explain the mean values of the individuals both between and within companies. In the second table I isolate the managers and use the within estimator to explain the differences between the sexes. This is done when using three different dependant variables; Number of children in total, number of young children and number of old children.

In chapter 7 I will look at what the chances are for being pregnant for women, and having a pregnant partner for men. This analysis will only cover the children born between 1979 and 1996. After doing this, I go on to isolate the individuals who go from being non-manager to manager, and do the same analysis on them. In the beginning of the chapter I will use the OLS model. For the people going from non-manager to manager I use the fixed-effects model. This model has an interesting feature in this case. When using individuals as the upper-level, and chance of being pregnant as dependant variable, we can see if they have their children before or after their promotions.

In chapter 8 I will look at what age the individuals are when they have children. I will divide this analysis into three parts. First, I look at what age they have their child. Second, I will look at what age they have their last child, within the time period 1979 and 1996. Third, I will look at the time span between first and last child. I will also divide the individuals into two age groups. The first one will cover all employees

under the age of 45. This group might not be done having children. The second group will cover all employees above 46. This group is probably done having children.

6. Are there differences among the employee groups between companies?

In this part of the analysis I will make use of the panel structure of the data. I will report the effects I find interesting by years. OLS, between and within regression will be used. In addition to sex and being a manager, I will also include the Bank Academy and the most common academic education types as dummy variables. As a supplement I will use interaction-effects for different variables. As in the previous chapter I will look at all children first, and then divide them into two groups; young and old children. The reference variables are the same for all the tables: The year is 1979, and the education level is set to those with only mandatory education. This chapter answers to the research question about different employee-groups and the difference between companies. Previous research shows that there are differences in hirings, promotions and pay between different companies for individuals with the same educational background (Yen 1997, Longva 1997). We have previous seen that there are women with children who are managers in this sector, but this alone does not tell us if that they have access to managerial positions in all the companies. In order to see if there are some companies who are more restrictive on hiring female managers with children I will use the between model. I will therefore try to utilize the data set so that I will pick up on differences between companies, as well as differences between managers and non-managers and men and women.

6.1 The effects of being in management over the years, differences between and within companies, on all children.

I will start of looking at children of all ages. By also including older children, I am sure that I do not exclude those employees who are done with having children. If this was the case, the problem with right censoring would be bigger than it need to be.

This means that we would exclude all the older employees. As mentioned earlier, one might expect to find that managers have more children than non-managers, even though they have a more demanding job than most non-managers. What will be of most interest is to see where the differences are biggest, between or within companies.

Table 13 shows the effects sex, education, being a manager, have over the years in the data set, on how many children the different types of employees have:[1]

Estimates of the effects sex, education, management or not have on number of children, over the years
Table nr. 13

	Total		Between		Within	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Number of children	1.7	0.0	1.4	0.3	1.9	0.0
Sex	-0.1	0.0	-0.3	0.1	-0.2	0.0
bank academy	0.1	0.0	0.7	0.2	0.0	0.0
academic edu.	0.2	0.0	0.5	0.2	0.1	0.0
manager	0.2	0.0				
manager*sex	-0.5	0.0				
manager*1980			0.4	0.2	0.1	0.0
manager*1981			2.1	0.8	0.1	0.0
manager*1982			1.2	0.5	0.1	0.0
manager*1983			-1.0*	0.9	0.1	0.0
manager*1984			-0.6*	0.8	0.1	0.0
manager*1985			-1.7	0.7	0.1	0.0
manager*1986			0.8	0.6	0.1	0.0
manager*1987			0.1*	0.8	0.1	0.0
manager*1988			-0.2*	0.4	0.1	0.0
manager*1989			-1.6	0.7	0.1	0.0
manager*1990			0.0	0.4	0.1	0.0
manager*1991			-0.7	0.4	0.1	0.0
manager*1992			0.2*	0.3	0.1	0.0
manager*1993			0.7*	0.8	0.1	0.0
manager*1994			0.1*	0.8	0.1	0.0
manager*1995			0.2*	0.3	0.1	0.0
manager*1996			-0.4	0.2	0.1	0.0

Controlled for years
N: 49902

[1] The table is read as following: the constants represent the value an individual has if he or she scores 0 on all the other variables. In the total-regression it refers to number of children for men with only mandatory education who are not managers. In the within and between regressions the constant refers to men with only mandatory education who are not managers in any of the years accounted for. Coefficients marked with a * are not significant at a 5% level.

Women managers have fewer children than all other employee-groups

The OLS does not take into account the group- or time series-nature of the data. The constant is 1.7, and refers to the value for the people who score 0 on the control variables. This means that the constant is the average value for men, with only mandatory education, who are not managers. The coefficients for sex and manager have to be interpreted differently due to the interaction coefficient. Women in non-manager positions have slightly fewer children than men (0.1) education level held constant. The education reference category is set to mandatory education. The people in the Bank academy have 0.1 children more on average net of the other measured variables. The most common academic educations coefficient is value is 0.2 higher than those with low education net of measured variables. The manager-coefficient refers to men (because of the interaction-coefficient) and they have 0.2 more children than the reference category. The interaction-coefficient refers to female managers, and they have 0.5 fewer children than the average for managers, with the other variables held constant. Substantially, this means that female mangers have a lot fewer kids than male managers (where being manager actually have a positive effect). And even though women have fewer children overall, being manager affect number of children remarkably. We know from the descriptive statistics chapter that differences becomes smaller over the years, but this is not visible here. In the next models the effect of being a manager is measured by years.

The differences between employee-groups are big between the different companies.

Our "upper" level in this analysis is set to the company identifier. This means that the between model refers to the average difference in number of children between companies. The constant-term of the model is 1.4, and refers to men with only mandatory level of education, who are not managers, in 1979. The average difference between men and women between the different companies is negative 0.3 in favor of men. This is higher than the OLS coefficient, but does also have a different

interpretation due to no interaction coefficient. In this model the sex variable refers to all women regardless of position. The fact that the coefficient is so much higher here indicates that the difference between men and women is especially high in manager positions. The group with Bank academy education has 0.7 more children than those with only mandatory education net of the measured variables, when compared between companies. The group with the most common academic education has slightly fewer children. This is surprising. In the cross tables in chapter 5 one could observe that in the sector as a whole the opposite was the case. By looking at the effect of being manager by years one can observe that some of the bigger differences in the year-dummies come from the variation in the interaction-variable.

In the next paragraph I will take a closer look at fixed-effects approach. The fixed-effects shows great differences from the between regressions.

The differences are smaller when one looks at the differences within each company.

The within model refers to the average change within each company over years. The constant is a lot higher than the between model, 1.9. The effect of being female has dropped to -0.2. There is very little change in the different education groups. This indicates that there is more similarity within the company, and that the effect of education and sex in the previous models reflect differences in composition of companies. All the year-dummies are positive, except for 1981 which is slightly negative compared to 1979. The effect of being manager is positive for all years. This means that managers have more children than the average for both managers and non-managers. It is interesting to note that the coefficients for the interaction-effects are all smaller in this model than in the between model. This means that there are bigger differences between firms than within firms over time. This confirms our suspicion that some companies are particularly bad, or large enough to shift the results.

What does this mean in practice?

Overall female managers have fewer children than the other employee-groups, both within and between companies. The fact that there are smaller differences within than between companies substantially means that within each company the people who are hired are not so different when it comes to number of children. This means that we do not have an indication that women with children and women managers in particular are excluded in the sector if they have children, but there are differences between the individuals who are hired by different companies. There are however limitations in this table. Since all children are included, also those with grown-up children are included, although they are probably not a big obstacle for any of the employee-groups. Still this is of interest since it describes a difference between the groups. The next step is to look at the managers alone, and isolate the effect of being a female manager over the years.

6.2 The effects of being a manager on children, within companies

In the former table one could observe that the average differences were bigger between than within companies. This means that there are some companies that have bigger differences between the employees than others. According to Høgsnes, Olsen and Petersen (2004) the women in management might be a carefully selected group. If we isolate the managers we should be able to see if this is the case, in regard to children, within this sector as well and if there are any changes over the years.

Table 14 shows the effects sex, education, and being a female manager have over the years in the data set, on how many children the different types of managers have:[2]

Estimates of the effects sex, education have on number of children for managers, over the years
Table nr. 14

	Total Coef.	S.E.	Within Coef.	S.E.
Number of children	1.9	0.0	2.0	0.0
sex	-0.6	0.0	-0.9	0.0
bank academy	0.2	0.0	0.1	0.0
academic edu.	0.2	0.0	0.1	0.0
female*1980			0.0	0.1
female*1981				
female*1982			0.1	0.1
female*1983			0.2	0.1
female*1984			0.2	0.1
female*1985			0.3	0.1
female*1986			0.4	0.1
female*1987			0.4	0.1
female*1988			0.4	0.1
female*1989			0.4	0.1
female*1990			0.4	0.1
female*1991			0.3	0.1
female*1992			0.4	0.1
female*1993			0.4	0.1
female*1994			0.4	0.1
female*1995			0.4	0.1
female*1996			0.4	0.1

Controlled for years
N:18889

[2] The constant refers to men with only mandatory education who are managers. Non-managers are not included in this table. This means that the constant refers to a very small group of people, since this is a sector with a high level of education among the managers. Coefficients marked with a * are not significant on a 5% level

The difference between male and female managers

In this OLS there are only managers. The constant is 1.9, which is higher than in the OLS with all employees. The effect of being female is a lot bigger, -0.6 controlled for the other variables. The effects of having the different education types are slightly bigger than in the previous OLS. This model shows that women in managerial positions have 0.6 fewer children than male managers, when in the lowest education category.

The development of women managers over the years, within company

The constant in this model is 2, which is higher than in the OLS model. The effect of being female is now -0.9. The value of the education groups has dropped. Thus, among managers education level doesn't affect number of children as much. This means that once you start climbing the hierarchical ladder, education does not mean as much anymore. For employees the different education types matter as to where in a company one starts and at what hierarchical level. There are job types where one has good chances of advancement and there are those with little chances. The two education dummies that I use in these tables are types that are common among managers, so we know that this is not what holds people back from getting managerial positions. In order to see the effect of being a female manager I introduced the interaction variables. The woman by year coefficient is much stronger when we just consider managers. This suggests that it is harder for women to combine management positions and children than it is for men.

The interaction-coefficients describe the average number of children for female managers, in difference to all managers with the other variables held constant. The coefficient for 1980 is 0. In the rest of the time span it grows increasingly. This means that the difference has gone down over the years on average within companies.

Summary

In the table 13 one could observe that there was a bigger difference between companies than within. From the data description chapter we know that there are a lot more male than female managers. Table 13 illustrate that the biggest gap in number of children in the whole sector is between male and female managers. Taking this into account the next step was to measure the difference between these two groups at company level. Table 14 shows that there are big differences between male and female managers within companies, even though they are getting smaller. We know that women with children are present in the lower part of the hierarchical system but this is not as common higher up. This means that there is no proof of discrimination against women with children in general. The fact that most women are found the non-manager group and so many men are in the manager group gives us an indication that sex role socialization can be one of the explaining factors as to why this sector looks like it does. This would not have been picked up without an interaction-effect variable that measured the effect of being female in difference to being male within all managers.

This shows that even within the company you have differences between men and women. It is not just that women enter establishments and companies where promotions are rarer, since women are found in all establishments. Even within any given establishment women are less likely to combine children with manager positions. But still, the differences are smaller within companies, than between companies, and they are getting smaller.

Female managers have fewer kids than females that are non-managers, and male managers, both between and within companies. Women are punished harder than men by having a management position, and probably have a harder time combining children with being manager. These data aligns with the understanding that women are caretakers, and responsible for the home and raising the children. For

men, on the other hand, number of children isn't affected by position as much. It is important though, to realize that the data not necessarily illustrate a causal direction. It is very possible that it is number of children that effect position and not the other way around. Men are more likely to take manager positions even though they have children, while we can imagine that women have a harder time choosing work over family. We have therefore demonstrated the connection between the two, but not necessarily which affect which. This is not too clear yet because we look at all children, regardless of age.

In this part we have proven that different companies hire employees that have a big variety of children, both managers and non-managers. Because the between models had higher coefficients than the within model we know that there are businesses where the employees have few children and others where children of all ages are more common. In the next part we will look at young children too see if the results vary.

6.3 The effects of being in management over the years, differences between and within companies, on younger children.

One might expect to see that there are more female managers with older children than younger. This is because I assume that children below school-age are more demanding than children in school-age. Young children need to be picked up in kinder garden, which is usually not open late. If women are the primary care taker this means that they do not have the flexibility to work late if it should be needed Also, it takes time to build a career, so it may not be so strange if women have fewer children than men, because of leave of absence in relation to being pregnant and giving birth. I will therefore look at children between the age of 0 and 6, and children between 7 and 15. This will make it possible to see if any of the age-groups of children are more common than the other. I expect that there will be bigger

differences between the between and within model, because of the results in the prior part. The differences between companies on number children of all ages were so big that I suspect them to be even bigger amongst the group with younger children. I will follow the same procedure as the prior analysis.

Table 15 shows the effects sex, education and being a manager have over the years in the data set, on how many children between 0 and 6 years the different types of employees have:[3]

Estimates of the effects sex, education, management or not have on number of children between 0 and 6 years, over the years
Table nr. 15

	Total		Between		Within	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
number of young children	0.4	0.0	0.0	0.3	0.5	0.0
sex	-0.2	0.0	-0.4	0.1	-0.2	0.0
bank academy	0.2	0.0	0.5	0.1	0.1	0.0
academic edu.	0.3	0.0	0.7	0.2	0.3	0.0
manager	0.0	0.0				
manager*sex	0.0	0.0				
manager*1980			1.0	0.2	-0.1	0.0
manager*1981			1.2	0.6	0.1	0.0
manager*1982			0.4*	0.4	0.1	0.0
manager*1983			0.1	0.7	0.1	0.0
manager*1984			0.0	0.7	0.0	0.0
manager*1985			-1.5	0.6	0.0	0.0
manager*1986			0.5*	0.5	0.1	0.0
manager*1987			0.1	0.6	0.1	0.0
manager*1988			-0.7	0.3	0.0	0.0
manager*1989			-0.4*	0.6	0.0	0.0
manager*1990			-0.4*	0.3	-0.1	0.0
manager*1991			-0.3*	0.3	-0.1	0.0
manager*1992			-0.1	0.3	-0.1	0.0
manager*1993			1.2	0.7	-0.1	0.0
manager*1994			-0.5*	0.7	-0.1	0.0
manager*1995			0.6	0.3	-0.1	0.0
manager*1996			0.1*	0.2	-0.1	0.0

Controlled for years
N: 49902

[3] The table is read the same way as table 13. Coefficients marked with a * are not significant at a 5% level

The difference between male and female managers is remarkably small.

When looking at the OLS regression one can observe that women have 0.2 less young children than men. The people with the most common academic educations have most children. The effect of being a manager, of any sex, is zero. Substantially this means that the difference between male and female managers is smaller than one would expect. We do have proof that women have fewer children than men, but not because of managerial position. This is interesting because I expected that combining young children with being a manager as especially difficult for women. This is what seemed to be the case in the data description chapter.

Education type matters a lot when it comes to having small children

In the between-regression the first thing that is worth pointing out is the very low constant of 0. Women have 0.4 less children than men. The different education coefficients are large, which means that employees with the most common academic education and bank academy education have a lot more children than those with only the mandatory education. The interaction coefficients for managers and years are highly varying. From 1980 to 1984 they are declining from 1 to 0. They then turn negative for a year, before they once more turn positive. This means that on average managers have more young children than non-managers. Since we know that there are a lot more male managers that female, this does not seem unnatural. The reason why these coefficients do not match what we saw in the data description chapter is that this model only measures average difference between employees between companies. At the same time, even though many of the manager by year interaction coefficients were big, some of them were not statistically significant, which means that we can not put much emphasis on them. We now know that there are big differences on how many children the managers have between the different companies. This is what I expected based on the fact that different companies might have different strategies when it comes to hiring and promotion of employees. We

know from the theory chapter that statistical discrimination may occur in hirings if the employer expects individuals with small children to be less productive than individuals without children.

The difference between men and women are smaller within than between companies.

In the within-regression one can observe that the constant is higher than in the between regression. The effect of sex is smaller than in the former model. The education coefficients are smaller, and there is less variation over years for managers. This means that there are smaller differences within than between companies. The coefficients in this table were naturally smaller than the coefficients for all children, but the difference between the employee groups were not as big as I expected. Because the difference between men and women seems so small, I will isolate just the managers in the next table, in order to see if all the women that are not managers displace the results.

6.4 The effect of being a manager with young children, within companies

In the former table the difference between men and women were smaller than I expected. To see if this really is the case I will look only at the managers. I expect to see that the difference between male and female managers is more obvious here.

Table 16 shows the effects sex, education, and being a female manager have over the years in the data set, on how many children between 0 and 6 managers have:[4]

Estimates of the effects sex, education have on number of children between 0 and 6 years for managers, over the years
Table nr. 16

	Total Coef.	S.E.	Within Coef.	S.E.
number of young children	0.4	0.0	0.5	0.0
sex	-0.3	0.0	-0.4	0.0
bank academy	0.1	0.0	0.0	0.0
academic edu.	0.3	0.0	0.3	0.0
Female*1980			0.0	0.1
Female*1981				
Female*1982			0.0*	0.1
Female*1983			0.0*	0.1
Female*1984			0.0*	0.1
Female*1985			0.1*	0.1
Female*1986			0.1*	0.1
Female*1987			0.0*	0.1
Female*1988			0.1*	0.1
Female*1989			0.1*	0.1
Female*1990			0.1*	0.1
Female*1991			0.1*	0.1
Female*1992			0.1*	0.1
Female*1993			0.2	0.1
Female*1994			0.1*	0.1
Female*1995			0.2	0.1
Female*1996			0.2	0.1

Controlled for years
N:18889

[4] The table is read the same way as table 14. Coefficients marked with a * are not significant on a 5% level.

Female managers have fewer young children than men.

The OLS regression in this table indicates what I expected in the former table. Female managers have a lot fewer children than male managers. Higher education means more children. Most managers have these two education types so the difference between the managers is not as big as one might expect. Since these tables only look at young children, it is not easy to say what is the most remarkable, that female managers have fewer children than male managers, or that male managers have as many young children as they have. This might be an indicator that men who are in management have children later in their careers than their female colleagues. Knowing that men are able to have children in a longer time span than women, this would not be a big surprise. I will look at this in chapter 8.

The differences between men and women managers are getting smaller.

The within-regression has a higher constant, as well as a higher sex-coefficient. The education coefficients are slightly smaller. The interaction-coefficients with women and years are increasingly growing larger, even though several of them are not statistically significant. This means that the difference between male and female managers is getting smaller. This is what has been found earlier in similar research (Høgsnes, Nielsen, Petersen 2005), even though the change is not very big.

Summary

This section showed us that there are differences in this age group, just as for all the children combined. Women in management have the fewest young children. What was surprising in this part was the fact that the difference between companies was smaller than for all children's age groups combined. This means that all the businesses in this sector are more likely to hire people for managerial positions in the same situation, in regard to children. We now have support that all employers treat

employees in a similar way when it comes to having young children or not. That being said, there are differences between the employee groups regarding number of young children, and differences between companies on who they hire as managers.

6.5 The effects of being in management over the years, differences between and within companies, on older children

In this age group there might be more managers with children, particularly women. Because it takes time to build a career, one might expect to find older children because the employees are older in this age group. In the last part we found that there are many male managers with young children, which means that they probably have children at an older age than their female colleagues. Because men are fertile longer than women this might not be a big surprise. If men have more children in this category as well, older children, we know that they also start having children at an earlier stage than their colleagues.

Table 17 shows the effects sex, education, being a manager, have over the years in the data set, on how many children between 7 and 15 years the different types of employees have:[5]

Estimates of the effects sex, education, management or not have on number of children between 7 and 15 years, over the years
Table nr. 17

	Total		Between		Within	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
number of older children	0.4	0.0	1.0	0.3	0.6	0.0
sex	-0.1	0.0	-0.2	0.1	-0.2	0.0
bank academy	0.1	0.0	0.4	0.1	0.0	0.0
academic edu.	0.0	0.0	0.3*	0.2	-0.1	0.0
Manager	0.4	0.0				
manager*sex	-0.4	0.0				
manager*1980			0.4	0.2	0.4	0.0
manager*1981			0.9*	0.7	0.5	0.0
manager*1982			1.6	0.4	0.5	0.0
manager*1983			0.0*	0.8	0.5	0.0
manager*1984			-1.8	0.7	0.4	0.0
manager*1985			0.8*	0.6	0.4	0.0
manager*1986			0.9*	0.6	0.4	0.0
manager*1987			-1.4	0.7	0.4	0.0
manager*1988			0.2*	0.3	0.4	0.0
manager*1989			0.0*	0.7	0.3	0.0
manager*1990			-1.0	0.4	0.3	0.0
manager*1991			-0.2*	0.3	0.3	0.0
manager*1992			-0.4*	0.3	0.2	0.0
manager*1993			1.5	0.7	0.2	0.0
manager*1994			0.5*	0.7	0.2	0.0
manager*1995			-0.5	0.3	0.1	0.0
manager*1996			-0.4	0.2	0.1	0.0

Controlled for years
N: 49902

[5] The table is read the same way as table 13. Coefficients marked with a * are not significant on a 5% level.

The differences between the different employee-groups are smaller when it comes to older children.

The OLS regression in this table shows that there is not much difference between men and women who are not managers. The constant is about the same as in the lower age-group, the former table. The educations coefficients are a lot lower, and do not make any significant difference between the different groups. The manager coefficient is large and positive. This means that male managers have more children than others. The interaction-coefficient for female managers is highly negative. Seen together with the sex-coefficient it is becomes obvious that female managers have as many children as the female non-managers, when it comes to children in this age-group.

There are big variation between the different years..

The between-regression has a high constant, 1. The sex-coefficient is at 0.2. This means that women have 0.2 fewer children than their male coworkers. The education-coefficients tell that individuals with the most common academic education types have 0.4 more children in this age-group than the employees with only the mandatory education. Employees with the most common academic education types have the same amount of older children as the ones with only mandatory education. The interaction-coefficients for managers over the different years tell that there are big changes between the different years. Not all of the coefficients as statistically significant. But what we can read from them is that there are differences between managers and the other employee groups between the different companies.

The managers are having fewer children over the years

The constant in this regression is a lot lower than in the between-companies regression, 0.50. The effects of being a woman are about the same as the between-

regression. This means that the difference between men and women is about the same between and within companies, which means that there is no evidence that there are any companies that are particularly bad when it comes to hiring and employing individuals with children in this age group. The education-coefficients are very low, which means that there are very small differences between the different education-levels. The interaction-coefficients for managers over the different years tell that the difference between managers and non-managers starts of as quite big in 1980 and decreases over the years. In 1996 managers only have 0.1 more children than non-managers, in the oldest age group. This is a different direction than we have seen in the other tables. Usually it is the non-managers who come closer to the manager group, not the other way around.

6.6 The effect of being a manager with older children, within companies.

The former table showed that there seemed to be little difference between the different employee-groups, except for managers. Now it will be interesting to isolate the effect of being a female manager over the years, and compare it to male managers. When using human capital one would think that the difference between male and female managers become bigger as more women comes into management, when they attain the same education as men and might be willing to sacrifice more in order to have a career.

Table 18 shows the effects sex, education, and being a female manager have over the years in the data set, on how many children between 7 and 15 managers have:[6]

Estimates of the effects sex, education have on number of children between 7 and 15 years for managers, over the years
Table nr. 18

	Total Coef.	S.E.	Within Coef.	S.E.
number of older children	0.7	0.0	0.9	0.0
sex	-0.5	0.0	-0.5	0.1
bank academy	0.2	0.0	0.1	0.0
academic edu.	0.1	0.0	0.0	0.0
female*1980			-0.1	0.1
female*1981				
female*1982			0.0*	0.1
female*1983			0.0*	0.1
female*1984			0.0*	0.1
female*1985			0.0*	0.1
female*1986			0.1*	0.1
female*1987			0.1*	0.1
female*1988			0.1*	0.1
female*1989			0.1*	0.1
female*1990			0.1*	0.1
female*1991			0.1*	0.1
female*1992			0.1*	0.1
female*1993			0.1*	0.1
female*1994			0.1*	0.1
female*1995			0.2	0.1
female*1996			0.2	0.1

Controlled for years
N:18889

[6] The table is read the same way as table 14. Coefficients marked with a * are not significant on a 5% level.

There is no real difference from the other age-group of children

The OLS-regression has a constant of 0.7. This means that male managers with only mandatory education have 0.7 children in this age group. Women have on average -0.5 fewer children than men. The employees with more education than the lowest group have more children on average. This means that the numbers are not to different from the previous findings

The differences becomes smaller throughout the time span

The within-regression has a higher constant than the OLS. The sex-coefficient is bigger. Education has little impact. All of the interaction-coefficients are positive. They all increase from 1979 to 1996, but the change is so little until the last years so they are not significant. Combined with the sex-coefficient one can see that the differences slowly decrease also in this age group. This means that the difference between male and female managers is decreasing within companies. This shows that the coefficient values for the managers from the former table were not précis for women.

6.7 Summary of the findings from the analysis of the differences between and within companies

In this last chapter one can see that female managers have fewer children than all the other employee groups. Male managers have the most children by far. The differences decrease over time. The differences that decrease the most are within the youngest age group, between 0 and 6 years of age. In the age group of the oldest children, 7 to 15 years of age, we could observe that the male manager were the ones that experienced the biggest drop in number of children. In the other tables we could observe that the other employees where the ones who got more children. So far the

results look a lot like what we could see in the descriptive statistics chapter. But we have found out more.

There are bigger differences between different companies than within, for children of all age-groups. This means that there are some companies that have employees-groups, especially the group of female managers, with fewer children than what is the average in the sector. I have shown that the biggest difference between men and women is found between companies, not within. In other words, there are companies where the differences between the employee groups are smaller than one would think if one were to do the same analysis without using fixed-effects. This means there are companies that conscious or unconscious hire employees who do not have children, or at least have fewer children than what is the average within the sector. Why this is the case we have no way of telling, without doing more extensive research that can not be done with this data set.

The difficult thing about looking at this phenomenon is determining what can actually be said from these numbers. The biggest issue is telling if men and women just plan their careers differently or if the there might be discrimination. There are clearly differences between male and female managers, bigger than between non-managers. It is easy to state that women with children meet a glass ceiling, when trying to reach positions high on the hierarchical ladder, because there are fewer of them in managerial positions. The education types that are most common within this sector are educations where men are highly over represented. This might lead one to think that women with these education types have to be able to work as much as the men in order to have the same career path. This might be the case, but we have no real evidence that this is not just a personal preference.

The next step in the analysis is to look at when in their career the different employees have children.

7. Choosing when in a career path to have children.

One might expect that women and men plan the period of when they are going to have children. Taking into account that women will have a higher absence rate than men, when pregnant, we might see that women have certain times in their careers when they are more likely to have children. Even more so, for women with higher education, who are likely to loose more human capital than women with lower education. Both men and women with higher education will probably have children later in their careers than individuals with little education. One of the reasons for this is that they are older when they are done studying.

For men, both in management and not in management, there will probably not be as visible trends as it will be for women. Men are not likely to have as much time off from work as women do, which means that they will also loose less human capital than women. At the same time they are able to have children for a longer period of time. According to Becker (1985) many forms of human capital deteriorate over time, in the case of absence from the work place. This means that female managers might be more reluctant to have many leaves of absence in the beginning of their careers, because this might follow them later on.

For women, both education and management may be of importance in determining when to have children. We know from the previous chapter that both men and women with either the most common academic education types or the bank academy education on average have more children than the employees with other education types. I will primarily focus at management since the women in this sector with higher education usually are managers.

In this chapter I will do as in the previous chapter. I will start of with OLS regression before I move on to fixed-effects analysis. By doing both I will make good use of the structure of the data-set, and I will look at the phenomenon from different

angles. I will only look at what the chances are for having children in the time period of the data set 1979-1996.

This chapter will try to answer my third research goal. When do the different employee groups have their children? Taking into account that we know that there are differences in number of children, I expect there to be differences in when they have them as well.

7.1 Chance of being pregnant for women, or having a pregnant spouse for men.

The first step in this part of the analysis is to use ordinary OLS regression to look at all the employees in the sector who has children, managers and non-managers. I will report the chance of becoming pregnant or having a pregnant spouse for both groups in four time-periods.

Table 19 shows the chance of having a pregnant partner for all men.

Chance of having a pregnant partner for men

Table nr. 19	1979	1985	1990	1996
Non-managers	0,1	0,10	0,1	0,1
Managers	-0,02	0,01	0,02	0,03

N: 25602
All coefficients as significant on a 5% level

In 1979 there is a 10% chance of having a pregnant partner for male non-managers. For managers the chance is two per cent lower, eight per cent. In short, there are fewer managers who have a pregnant partner than non-managers. In 1985 the chance of having a pregnant partner is 10%. For managers the chances are 11%. Managers have now surpassed non-managers. In 1990 and 1996 managers keep distancing

themselves with one per cent for each time-period. We know that men experience a salary increase when they have children, from previous research (Høgsnes, Penner and Petersen 2006). So this finding is not surprising when we know that managers usually have a higher salary than non-managers.

Women's salary is not affected in the same way, and we know that they also have fewer children in total, so I expect we do find the differences to be the other way, women in management have a smaller chance of being pregnant than the non-managers.

Table 20 shows the chance of being pregnant for all women.

Chance of being pregnant for women

Table nr. 20	1979	1985	1990	1996
Non-managers	0,09	0,13	0,17	0,15
Managers	-0,03	-0,05	-0,05	-0,02

N: 24300
All coefficients are significant at a 5% level

In 1979 female non-managers had a nine per cent chance of being pregnant. Female managers had a three per cent smaller chance, six per cent. In 1985 the chance for non-managers is 13%, while managers have an eight per cent chance. The difference between the managers and non-managers stay the same in 1990 before it drops to a two per cent difference in 1996.

It may seem like these numbers do not fit together with the numbers from the last chapter. The reason why it looks like women have more children than men in this part is because now, the only children that are counted are the ones born from 1979 and 1996. This means that all children born before 1979 are not counted, and makes the numbers different from the previous chapter.

Summary

For men we observe that managers have a bigger chance than non-managers to have children in the time-period 1980-1996. Women in management have a smaller chance of being pregnant than women who are not managers. Women who are non-managers have an increasing chance of becoming pregnant in the whole time period. When we compare men and women in management across the tables we can observe that they have an almost equal chance of having children. This is something that we have not seen in this thesis before. We already knew that women in management have an increase in number of children through out the time span, but we have not been able to see if it was because women who are non-managers with children where being promoted or if the women in management where having their children after they where promoted. The finding that women in management have such a high chance of being pregnant brings us to the next question.

One question that is still unanswered in this part is; do the women who are in the group of managers have a bigger chance of becoming pregnant before they become managers? The numbers in the last table suggest that they do, but we also know that the women who are promoted are a small group, and the non-manager coefficient may not be representative for them. In order to see what the chances are of being pregnant for women or having a pregnant partner for men, for those who go from being non-manager to manager within the sector I will do separate analysis for them.

7.2 Chance of being pregnant, or having a pregnant partner, for employees who go from being non-managers to managers

In order to best use the structure of my data set, I will also look at the employees in this sector that go from non-managers to managers. This does not necessarily mean that they are promoted within one firm. They might change firms, but they stay within the sector. By looking at these employees I will be able to determine when in their careers they have children, before or after being promoted to manager. According to Becker's human capital theory (1962) one might expect to find that women who make it into managerial positions have children after their promotion, in order not to loose their human capital, needed to reach their position. Anderson, Krause and Binder (2003) argue that that the time and flexibility one might get in a more demanding job is important for working mothers. This also suggests that women are more likely to have their children after a promotion. At the same time we know that women in other sectors do not experience a wage increase by having children, like men do (Høgsnes, Penner and Petersen 2006). This means that women do not have any direct pay incentives to have their children at a specific time in their career.

Table 21 shows the chance of having children before and after a promotion, for male employees who are promoted within the sector: [7]

Table nr. 21
Chance of having children for male employees going from non-manager to manager

Non-managers	0,10
Managers	0,07
N:2305	

[7] All coefficients are significant at a 5% level.

The numbers of males that fall into this category is 2305. This means that there are over 2300 men that are being promoted to managerial positions within the sector over all the years. There is a 10% chance of having children for the individuals when they are not managers. This chance increases to 17% when they become managers. This means that men, who start out as non-managers and are promoted to managers within this sector, have a bigger chance of getting children when they are managers. When knowing that men earn more and probably work more by having a bigger family, this seems reasonable (Høgsnes, Penner and Petersen 2006).

Table 22 shows the chance of having children before or after a promotion, for female employees who are promoted within the sector[8]:

Table nr. 22
Chance of having children for female employees going from non-manager to manager

Non-managers	0,18
Managers	0,05
N:2684	

The numbers of women that fall into this category is 2684. This means that there are more women than men who actually get promoted within this sector. Men do not necessarily get fewer promotions in general, but if they do, it has to be to or from other sectors than banking. I will come back to this in the next section. Women within this sector have an 18% chance of being pregnant when they are non-managers within this sector. After these women become managers their chance of becoming pregnant increases to 23 %. This is a big change. Knowing that women do not experience an increase in pay by having children in other sectors, one might expect that they were done having children at the time they became managers (Høgsnes, Penner and Petersen 2006). At the same time we know that these kinds of occupations might be

[8] All coefficients are significant at a 5% level.

more flexible than other occupations like clerical work where one has a fixed number of hours you have to work each day, at a given place.

Women who become managers have a higher chance of becoming pregnant than men who also go from non-management to management. This means that when these employee groups have finally become manager women have more children in general. This is the opposite of what the descriptive statistics and the first analysis said.

What might be the most interesting in this part is that more women than men get promoted from non-manager to manager within this sector. This means that they have a higher promotion-rate within the sector. This is different than previous research shows, where there is little difference between men and women when it comes to promotions (Longva 1997, Yin 1997). Since more men than women are managers this means that men must have a higher rate between different sectors. This might be linked to gender specific socialization. It seems to be more common for men to change between different occupations in different sectors than for women. So even though we know that more women start to attain the same education types as men who become managers, there still are differences between the sexes.

The next step in the analysis is to look at what age different employees are when they have their children. We already know that women have their first child at a later stage in life than what was the case before, in other sectors than this (Rønsen 2004).

8. At what age do the employees have their children?

In this chapter the problem with right censoring becomes very clear. The first part of the analysis (age when having first child) is relatively problem free. There might be some individuals who have their first child after 1996, but there is little we can do about that. The second part (Age when having last child) have the same problem. In the third part (Time span between first and last child) I will take certain steps in order to make this problem as little as possible, by dividing the employees into two age groups. The youngest age group where all employees are under 45 are probably not done having children yet. This means that the findings in this part will probably not be the same if the analysis is done on a later time period. The older age group, where all the employees are 46 or older, are probably done having children. There might be some men who still have more children, but I believe they are so few that it will not displace the results by very much.

8.1 Age when having first child.

Becker (1985) argues that women who want to have a career are better of having children late in their career, thus being older. The human capital attained in the beginning of a career is the most valuable because it is something one can benefit from throughout the whole career. At the same time, when being a manager or doing a specialized job you have more control of the hours spent at work, so it might be easier to combine young children with a managerial position (Anderson, Krause and Binder 2003). In this part I will look at the average age of both managers and non-managers, with the different education types, when they have their first child.

Table 23 shows at what age employees have their first child. Employees with only one child are included here[9].

Age when having first child, for all employees

Table nr. 23	1979	1985	1990	1996
Age	27.6	27.1	26.9	27.1
Sex	-2.7	-2.5	-2.6	-2.9
Bank academy	0.7	1.3	1.3	0.8
Academic edu	1.5	2.4	3.2	3.0
Manager	0.1	-0.7	-0.8	-0.6
Manager*sex	-0.3	0.9	1.4	1.5

N:49902

In this table the constant is quite stable throughout all the years. The reference category is male employees with only mandatory education, who are not managers. They have their first child at the age of 27.6 in 1979. The changes in the other years are not very big. The sex-coefficient tells us that women have their first child between 2.5 and 3 years earlier. The education-coefficients says that the more education the older you get before first child. This seems natural. Managers in general actually get younger throughout the years when they have their first child. For female manager the results are the opposite, they have their first child later on in life, later in the data set.

Women who are not managers are youngest when they have their first child. The next employee group is the female managers, then the male non-managers, then the male managers. But the male managers actually have their first child at an earlier stage later in the set. Managers in this sector are usually in the most common academic education group, and they have their children later than others. Male and female non-managers are found in all education groups, and their age when having their first child vary a lot.

[9] All coefficients are significant at a 5% level.

In the next part I will look at the age of employees when they are having their last child.

8.2 Age when having last child, within the timeperiod 1979-1996.

We know from chapter 7 that the women in this sector who go from non-manager to manager have a bigger chance of having children after their promotion. That can lead us to think that the difference between the managers, male and female, is small in this.

Table 24 shows at what age employees have their last child. Employees with only one child are included here.[10]

Age when having last child, for all employees

Table nr. 24	1979	1985	1990	1996
age	32.8	32.2	31.9	31.9
sex	-3.4	-3.1	-3.2	-3.5
bank academy	0.7	1.3	1.2	0.9
academic edu.	1.8	2.5	3.0	2.7
manager	0.3	-0.5	-0.4	-0.3
manager*sex	-1.8	-0.2	0.3	0.6

N:49902

As with the age when having the first child, the constant here is quite stable trough out the different years in this table. It is slowly decreasing from close to 33, in 1979, to below 32 in 1996. Women are between 3 and 3.5 years younger than the men when having their last child. Considering that men are able to have children for a longer

[10] All coefficients are significant at a 5%level.

period of time than women, this is not surprising. The education coefficient says the same as before, the employees with the most common academic educations have their last child later in life than the ones with the bank academy education. The managers are a bit older when they have their last child, in 1979. This change through out the years and in 1996 they are younger than their non-management coworkers. Women who are manager are almost 2 years younger than the average of all managers in 1979. This changes as the years go by, and in 1996 they are on average 0.6 years older. So we have observed that women in management get older while men in management get younger when having both first and last child.

For both male and female managers the biggest change is when they have their last child. The males are getting younger and the females are getting older. This means that we can expect to see a change in the number of years from first to last child in the next part.

8.3 Number of years from first to last child.

In this part of the analysis I will look at the average number of years between the first and the last child the employees get. According to human capital theory (Becker 1985) women with higher education will get their children in a shorter period of time in order not to loose their capital. On the other side, the jobs women with higher education have are usually more flexible. This means that their jobs might be easier to combine with having children. The individuals with higher education probably have their children in a shorter time span than the individuals with shorter education, because they start working at a later point in life. This means that the individuals with the most common academic education types probably have their children in a shorter time than the individuals which have their education from the bank academy.

I will use linear regression in the beginning to describe the situation. Then, I will divide the individuals into two age groups, below 45 years and older than 46 years. This should help in giving a more precise description.

Table 25 below shows the number of years between first and last child for all employees, manager and non-managers, regardless of age. It does not include individuals without children or those with only one child. It does not distinguish between individuals with only two children and those with more.[11]

	1979		1985		1990		1996	
Table nr. 25	Male	Female	Male	Female	Male	Female	Male	Female
Non-managers	5.3	4.6	5.2	4.5	5.0	4.4	4.9	4.3
Managers	0.2	-0.9	0.2	-0.9	0.4	-0.7	0.3	-0.6

N: 38604

In this table one can observe that male managers have a longer time span of having children than any other employee-group. The constant for the males describes the non-managers and is lower than the manager coefficient. Female non-managers, in the next row, have a shorter time span of child birth than both the male managers and non-managers. Female managers have the shortest time span when having children of all the employee groups. We know that they have fewer children than the rest so this is no big surprise. Through out the years in the table one can observe that all employee groups have a decrease in number of years between the first and the last child, except for female managers who are stable at 4.6.

One can observe that the difference between female manager and non-managers is decreasing. The same is the case for the difference between female and male non-managers. The differences and the reduction in differences seem natural

[11] All coefficients are significant on a 5% level.

because male managers have the most children by far in 1979 followed by male non-managers, female non-managers, and last female managers. Over the years this difference gets slightly smaller. Because there is a difference in number of children, a difference in the years from first to last child seems natural. If one have more children it takes more time to get them.

In order to clarify the situation I will control for number of children in the next table. This will make the nuances more clear.

In table 26 below, number of children, interaction effects for number of children by manager, and number of children by female manager. In this table the constant is negative because the reference category does not refer to any of the employees, because all the individuals in this table have at least one child. The interaction effects help to distinguish the difference between male and female managers. There are still no age groups.

Number of years between first and last child

Table nr. 26	1979	1985	1990	1996
Years from first to last ch.	-3.9	-3.8	-3.8	-4.0
sex	-0.1	-0.1	0.0	0.1
manager	-0.3	-0.5	-0.4	-0.1
Numb. kids	4.1	3.9	3.9	3.9
kids*manager	0.1	0.2	0.3	0.1
kids*manager*women	-0.1	-0.1	-0.1	-0.2

N: 38604
All coefficients are significant at a 5% level

In this table one can observe that what number of children one has matter a lot, of course. In 1979 the coefficient for number of children is 4.1. This means that for each child one has the average span between the first and last child increases with 4.1 years. In the latter years it drops to a slightly lower number. The difference is not

drastically, but it shows that number of years between first and last child drops for all employee groups. The constant in this table looks low, but since every one included here score at least one on the “number of children”-coefficient, it does not point to any of the employees. Managers have their children in a shorter time span than the non-managers. But the difference is getting smaller. One can observe that the time span for female managers is decreasing. This means that the more children they have the shorter is the time span between each child.

What will be interesting now is to see if this is a general sign or if there is a difference between younger and older employees. We know that it is more common among the younger women in this sector to attain the same education types that are common among managers. This might be a sign that they are also more likely to plan their careers differently than the older female employees in order to have better chances of advancement into management.

In table 27 on the next page, the variables are the same as above but with education variables. The only difference is that only individuals under the age of 45 are included. This is so because it is interesting to see if there is a difference between younger and older individuals. In addition, this helps to isolate the problem with right censuring, by dividing women into one group when they are still able to have children and one for those who are too old. It is also controlled for education. The different education categories are the same as before with the mandatory education as the reference variable.

Number of years between first and last child, for employees younger than 45

Table nr. 27	1979	1985	1990	1996
years from first to last ch.	-4.0	-3.7	-3.5	-3.9
Sex	0.0	-0.1	0.1	0.4
Bank academy	0.0	-0.2	-0.6	-0.4
academic edu.	0.1	-0.4	-0.9	-1.0
Manager	-0.7	-0.6	-0.1	0.6
numb. Kids	4.1	4.0	4.0	4.1
kids*manager	0.3	0.3	0.2	-0.2
kids*manager*women	-0.1	-0.1	-0.2	-0.2

N: 11238
All coefficients are significant at a 5% level

All the individuals in this table are under the age of 45. This means that they may have more children later in the career without this data set picking it up. Here we have the problem of right censoring. The sex-coefficient for women shows us that they have their children in a longer time-span in 1996 than in 1979. One can observe that the higher education the individuals have, the shorter time-span from first to last child. From the former chapter we know that they are older when they start having children, so this makes sense. We can observe that managers have a longer time span between first and last child in 1979 than they do in 1996. Female managers have an even shorter time span than male managers. From the previous chapter we also know that women in management have their first child later than women not in management. At the same time women who go from non-managers to managers within this sector stand a higher chance of having their children after they are promoted. This is a good indicator that the younger women who are in management plan when they are going to have children more carefully than the other employee groups.

In the next age category, above 46 years old, all the women are most likely done having children.

Table 28 shows the same as above for a different age group, above 46 years of age. This is the group where most women are now done with their childbearing years.

Number of years between first and last child, for employees older than 46

Table nr. 28	1979	1985	1990	1996
years from first to last ch.	-3.1	-3.0	-3.0	-3.7
Sex	-0.3	-0.3	-0.3	-0.3
bank academy	-0.3	-0.3	-0.1	0.2
academic edu	-0.4	-0.5	-0.3	0.2
Manager	-0.4	-0.4	-0.8	-0.8
numb. Kids	3.9	3.7	3.5	3.8
kids*manager	0.2	0.3	0.4	0.4
kids*manager*women	-0.2	-0.1	-0.1	0.0

N:38664
All coefficients are significant at a 5% level

In this table all the individuals are more than 46 years old. That means that except for some men, they are done with having more children. The constant is almost one year smaller than for the other age group, 3.1. This means that the older employees have a shorter time span between each child, than the younger employees. This means that my hypothesis from the last part might be wrong. We do not have proof that younger employees have their children in a shorter time-span in order to not loose more human capital than necessary. The education-coefficients are different from the younger age group. For both education types the individuals have a longer time from first to last child. This can come from two reasons: Either the oldest people in this data set use more time from first to last child or, the youngest individuals in the set are not done having children. The latter sounds reasonable considering that the data set is right censored. One can also observe that the female managers use less time from first to last child, but he difference is getting smaller, and in 1996 there is no difference between the managers except for the sex differences.

All the coefficients in this table are smaller than in the previous. This means that the differences between the different employee groups are bigger in the youngest age groups.

Summary

It is clear that there are smaller differences between the individuals in the oldest age group, where most are done having children. This can probably be explained by the fact that not all the employees in the younger age group are done having children. People with the most common academic education use less time from the first to the last child in both age groups. Most of the managers are in this group. Female managers with the most common academic education use the least time of all, when number of children is controlled for. This means that female managers not only have the fewest children, but also have the children in a shorter time span. This means that Becker's statement about how women will make the most out of their human capital by having fewer leave of absences and at leaves later on their career have support in the bank sector.

9. How are the findings related to previous research, and what theory explains the findings best?

9.1 How do the findings relate to previous research?

In the previous research chapters we could see findings on different parts of the bank sector. In this chapter I will start of by seeing if what others have found out looks the same as what I have found out.

In the bank sector in the US Fernandez and Weinberg (1997) found that women had a higher chance than men to be hired in four clerical positions in one bank. From this sector we know that women are overrepresented in the lower part of the hierarchy. This means that women are more likely to get jobs low in the hierarchy, so these findings look a lot alike. Togstad, Høgsnes and Petersen (2002) looked at the bank DNB in Norway and found that women are more likely than men to be hired in several different levels in the years 1998-1999. This looks a lot like what we have seen here where women as more women even become managers.

In the Norwegian oil company we know that women experience fewer promotions than men (Hoel 1997). Other studies of other companies show that there is little difference between men and women (Yin 1997, Longva 1997). In the bank sector we have observed that more men than women have to be promoted, but we have also seen one big difference. Most of the men who work in management in this sector have to be hired from other sector, because we in chapter 7 saw that women have a higher promotion rate than men within the sector. This may be an indication that women are being rewarded for their loyalty towards the employer.

Evensen (2006) found that women have started to attain the same level and to a large degree the same education types as men. We have seen that this is the case in this sector as well. Women are still under represented in the most common academic

education types, but they have experienced an increase in numbers. At the same time we know that many of the female employees have their education from the bank academy, where they outnumber the men. As more women attained the most common academic education types more women became managers. Evensen (2006) found that the gender wage gap had decreased. Even though I have not looked at wages we know that as more women enter management their wages probably go up as well.

Hochschild (1989) found that women become more alike men in the labor market. But they still have the most responsibilities at home compared to men. We know that women have started to attain the right education and more become managers. In this way our findings are quite alike. We have also seen that the women who become managers have more children than they used to. There is no way of telling if these female managers with children have the largest responsibility at home, but the fact that they have more children can be seen as an indication that they have less responsibilities at home like women used to earlier. Høgsnes, Penner and Petersen (2006) also found that it has become easier for women to combine work and family in all occupation types in the manufacturing sector.

Olsen (2004) found that there is no longer segregation in the industrial sector and women are represented in all parts of the sector. In the bank sector we know that there has not been any horizontal segregation. The numbers of men and women who are employed here are very much alike during the years we have studied. This sector is on the other hand, vertically segregated. More men than women work in management. This difference has become smaller over the years. When we looked at children we could also observe that not only did more women get managerial position, but also women with more children. In chapter 6 we saw that there were bigger differences among the different employee groups between than within companies. This means that one could argue that when it comes to women with children not all companies are as vertically segregated as one should think.

Rønsen (2004) has found out that women are getting older when they start having children. In the last analysis chapter one could observe that for female

managers this was the case in both age groups, but for the female non-managers only the youngest age group (Younger than 45 years) started having children later.

9.2 Which theory explains our finds the best?

In this part I will start of by looking at what findings gives support to what theory. Then I will see what theory that explains the findings the best.

Support of gender specific socialization theory?

Men and women in this sector have different education types. Men are over represented in the types where usually managers are picked from, while women have other educations. This changes over the years and more women start to attain the education types more common for managers. This means that when it comes to education gender specific socialization seems to be on the decline within this sector.

We also know that more women than men are being promoted within the sector. This means that maybe women are more careful like the theory suggests, and do not change to jobs in other sectors in order to advance on the hierarchical ladder, and therefore are being awarded by the employer for being loyal.

Support of human capital theory?

Several of the findings in this paper support the human capital theory. Female managers have fewer children than the other groups of employees. The differences are significant, but the problem of right censoring means that we can not be completely sure that our finds in the younger age group are solid, because they might have more children when they get older, or if they start working in another sector.

Women in management have their children in a shorter time span than the other employees. At the same time they are getting older when they start having children. Men in management did not have this development. This can be seen as an indicator that women are planning their careers in a different way after more women started to attain the most common education types where men are over represented.

At the same time they also have a bigger chance of having children after they are promoted, which indicates that this employee group use the beginning of their career to build up human capital which can be useful later in the career, instead of starting to have children right away.

The fact that more women than men are being promoted within the sector can also be explained by human capital. Many of the women in this sector have their education from the Bank Academy. This means that there is a big chance that these women have sector specific human capital. Their education is particularly valuable in banking, rather than men's education which is not connected to any sector, but has a bigger general value.

Support of discrimination theory?

In this sector one might observe allocative discrimination. This means that women with young children do not get particular positions, in this case managerial. We know that women are over represented in the lower part of the occupation hierarchy. In this sector there are many clerical occupations on the bottom of the hierarchy which might be difficult to be promoted from. This is not necessarily discrimination, because it does take time to build a career, and if the individuals have children at a young age, they will naturally be older, before one gets promoted.

We might also observe statistical discrimination. In chapter 6 we saw that there are differences between the companies within this sector. Some companies seem to hire fewer women with children in manager positions than others.

On the other side: More women than men get promoted within the sector. Put in other words, male managers a more often recruited from outside of the sector. This means that when women are. This can be an indicator that women are more loyal to their employers, and get awarded for it.

Support of segregation theory?

There are signs of vertical segregation in the bank sector. Women in management have fewer children than other women and men. Put in other words, men and women with the same number of children do not work in the same occupation of the hierarchical ladder. In the sector as a whole men and women are equally represented. This means that there is no sign of horizontal segregation. The difficult question is to answer whether the supply- or demand-side is responsible for the differences.

Support of glass ceiling hypothesis?

The glass ceiling hypothesis is a theory that is difficult to accept as an explanation or completely reject. This is because the glass ceiling is exactly what it says, invisible. This means in practice that one can observe situations where one thinks there is a glass ceiling, without the possibility to confirm or reject it completely. There is a lot fewer women than men in managerial positions, while the total number for the whole sector, is the same for men and women. In practice this means that women have a different ratio of promotions than men. This is the strongest evidence we have, that supports the glass ceiling hypothesis, but this can partially be explained by the fact that women did not have the right education to get to the top, in the 1980's. This has changed, and more women are now in management, but they are still heavily outnumbered by men. As mentioned in the section above women with the most children are not well represented in management. Men in management have the most

children of all groups of employees. This fact, in addition to the fact that there a few women in management is a good indicator that there is a glass ceiling.

On the other side, chapter 7 revealed an interesting situation. While there are more men than women in management, there are more women than men who get promoted within the sector. This means that when managers are hired in this sector, most of them come from the outside. By the numbers, men have a harder time getting promoted than women, within this sector. I have not been able to explain why more women are promoted within the sector, but this is an argument that there is no glass ceiling.

What theory explains the situation of the bank-sector the best?

There are findings that support all the theories. Human capital has been used as an explanation for the differences between men and women in the labor market for quite some time. In this thesis I have also found the most support for this theory.

Both Becker (1962) and Mincer (1958) argue that many of the differences in the labor market can be explained by differences among the employees, on the supply side. They simply put less weight on the possibility of differences being created by businesses at the demand side. This means that when using this theory it is also important to keep in mind that other theories might be able to better explain what you are looking at from a different angle. In order to best cover both the supply and demand side I have also used discrimination theory. By doing this I found that the differences we saw can be at least partially explained by the demand side of the sector. Segregation theory helps when trying to see what the status is like in the labor market but does not give any help when explain why phenomenon occur.

9.3 Drawbacks and limitations to my thesis

There are some limitations to my methods and data set. What I conceive as the biggest limitation is the problem with right censoring. We do not know if the employees in this set are done having children, or if they have more after the data is collected. The older employees, especially the women, we can be fairly sure are done, but for the younger there are big chances that they have more children later on. This means that the numbers that I use are not absolute. In order to solve this as good as possible I put the employees in different age-groups to minimize the problem.

We can not generalize outside the sector. The findings we have seen does not reflect anything outside of what we have looked at. At the same we only have a limited number of years studied. This means that we do not know what the sector used to look like or how it looks today. This is also a limitation; the data set does not cover the time period up until today, so we have no way of knowing if the sector looks like this today.

Another problem that comes to mind is, of course, to what extent do employees choose their own careers, and what can be put on the employer-side of the relation? It is safe to say that many people plan their career and their family life. Having children is a time consuming and costly affair. People with higher education, especially women, who give birth to the child, may plan to have children later, because it is more convenient. So there is no way one can say that the status of the sector can solely be blamed on the employer side on the relation.

9.4 What is the next step in research on this topic?

The questions I have answered serve mostly as an overview of the situation in the bank sector. I have not tried to give any explanations that explain why different

individuals choose their actions as they do. In the future there can be done several things to broaden the research on this field, both qualitative and quantitative.

It would be useful to do a qualitative study to see if number of children affects an individual's career, or if it is the other way around. It could be that an individual's career affects how many children one gets, not the other way around, that number of children affects and individual's career. When it comes to causal explanations quantitative methods comes too short, in this thesis.

When it comes to doing quantitative studies based on this work there are several issues that would be interesting to look at. We have seen that the employees in this sector have different number of children. If one were to have a more extensive data set one could see what occupation the spouse had outside this sector. By knowing this one should have a better idea of who has the most responsibilities regarding the children, the men or the women. It would also be of interest to do the same analysis as I have done in order to see if changes we saw in the time period we looked at continue up until today.

10. Conclusion

In this paper it has been shown that female managers are in a different family-situation than male managers, and both female and male non-managers. Women are over represented in the non-managerial positions. This has changed over the years, but there are still big differences.

It has become more common for women to attain the same education as male managers. At the same time more women have taken the step into management.

One interesting finding is that it seems like women are more likely to be promoted within the same sector, while men change more between different sectors throughout their careers.

In general female managers have fewer children than male managers and all non-managers. They are also more likely to have their children after they are promoted to manager. This is not the case for male managers. They seem to be as likely to have children when they are non managers.

Women were younger than men when they have their children in the 1980's. This has changed especially for the female managers. Also women have their children in a shorter time span than men. The employees with high education have their children in a shorter time span than those with lower education.

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