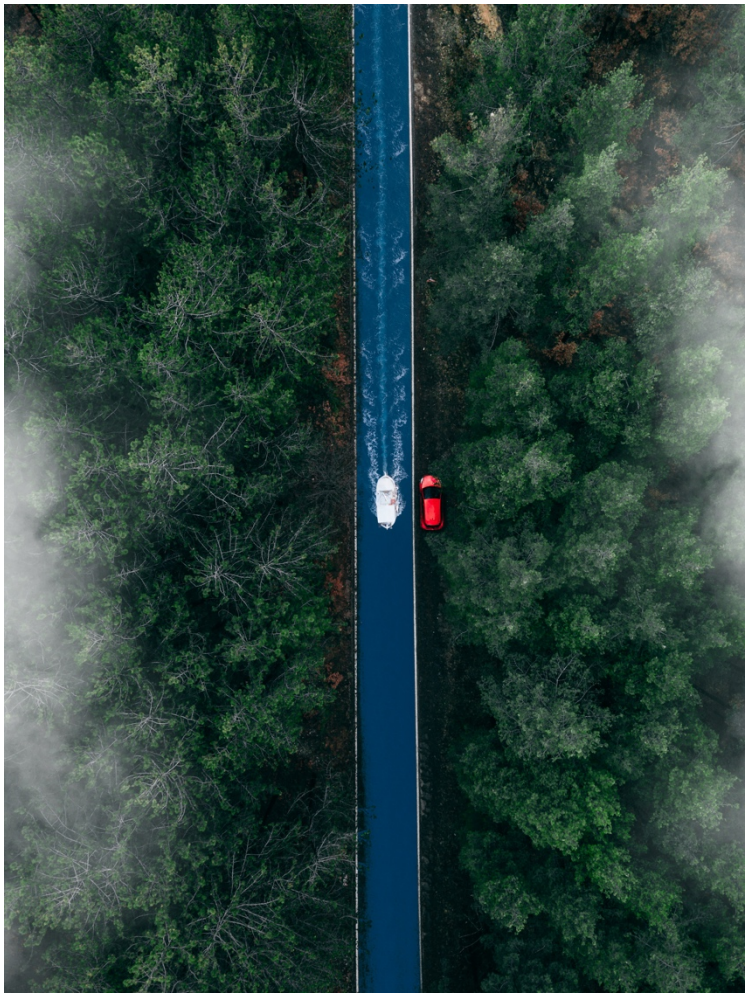
Occupational Sex Segregation: Skill Regimes or Gender Norms? The case of Norway and the United States



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A dissertation submitted by Amal Safi
to the Department of Government, the London School of Economics and Political Science, in part completion of the requirements for the MSc in Comparative Politics (Politics and Markets)
Awarded with Distinction

10'024 words

September 2011

Table of Contents

Abstract

The aim of this dissertation is to identify the most important causes of occupational sex segregation. To conduct this analysis, I look at the Norwegian and the American puzzles. While the Norwegian welfare state is explicitly committed to gender equality, its labour market is more sex segregated than in the United States, where active state interventions in favour of women's employment are almost non-existent. To address this issue, I analyse two competing hypotheses: *the skill-based theory* – which is an attempt of gendering the 'Varieties of Capitalism' - and the *gender norms hypothesis*. The skill-based theory posits that specific-skill regimes (CMEs) are more discriminative towards women than those relying primarily on general skills (LMEs). The sociological contributions related to gender identities suggest that segregated labour markets are rather the result of how economic actors – employees and employers – would perceive gender norms. During the course of this dissertation, each hypothesis is tested by comparing Norway (a CME) and the United States (an LME). Two aspects of occupational sex stratification are under scrutiny: *the segregation of educational programmes* and *the employers' promotion practices*. The former represents a potential cause of horizontal segregation (i.e. sex stratification across economic sectors), while the latter might be a determinant of vertical segregation (i.e. sex stratification across professional hierarchies). I argue that the sharp sex segregation of the Norwegian labour market cannot be fully explained by its specific skill regime. The American labour market is structured differently and still displays a similar pattern, albeit less obvious. It can thus be hypothesised that there is a constant in both cases making the labour force stratified, and this has to do with gender norms. Finally, the results of this hypothesis testing support my argument. The analysis of horizontal and vertical segregation in Norway and in the United States indicates that economic actors follow patterns of behaviour consistent with the gender norms in their respective national contexts, rather than with their national economies.

I. Introduction

Occupational segregation by sex is extensive in the labour markets of virtually all economies in the world. The fact that women and men fill different hierarchical positions at work and are over or under-represented in certain professions has serious implications, in particular in terms of economic efficiency. Ultimately, occupational sex segregation leads to the wasting of human resources and reduces an economy's ability to adapt to new conjunctures (Anker 1997, 315), due to labour or skill shortages that it may generate (European Commission 2009, 9). Those consequences are all the more damaging at a time when market turmoils systematically hit economies, both in Europe and in North America. Such an issue has already been taken seriously by the private sector. The benefits of gender equal executive boards for firms' financial performance - especially in times of economic crises - seem rather fully recognized, as shown by annual report *Women Matter*[1] issued by the management consulting firm McKinsey & Company. Moreover, occupational sex stratification raises concerns in terms of justice. It has an important influence on wage inequality (Estévez-Abe 2005, 181; European Commission 2009, 9) to the detriment of women, which in turn directly affects their economic status and independence (Anker 1997, 315). Further, the fact that systematic barriers might constrain individuals of both sexes in their career choices undermines the idea of justice and equity, considered as core values in a democratic society (Estévez-Abe 2006, 143; Hakim 1992, 128).

Nevertheless, political concerns for gender equality do not necessarily reduce gender occupational segregation. It seems that this issue is more complicated to resolve than a mere political intervention into the market. In fact a recurring and stringent pattern of sex segregation is visible among Nordic countries, such as Norway, Denmark, Finland and Sweden (Estévez-Abe 2005, 183), which are paradoxically very renowned for their commitment to gender equality.

[1] McKinsey has issued reports in 2007, 2008, 2009 and 2010 that explicitly call for more gender diversity within firms, especially at the management and decision-making levels. Women would indeed have certain leadership skills, such as being more rewarding and inspiring, that would be precisely the most needed in times of economic downturns.

However, Nordic countries are actually the worst - among developed capitalist economies - to integrate equally both sexes in their respective labour market and have very few corporate women managers (Estévez-Abe 2006, 143). By contrast, other countries such as the United States in particular, display less sex stratified labour markets (Charles & Grusky 2004, 27), which is puzzling since the welfare state's commitment to working women is precisely non-existent.

As such, it is the aim of this dissertation to address the issue of occupational sex segregation by comparing two cases that share differences and similarities on this matter: Norway and the United States. They are both developed capitalist economies with high female labour participation rates, but they differ in the *type of their economy* - adopting a VoC perspective, Norway is a CME (a coordinated market economy), while the United States correspond to an LME (a liberal market economy) - and their *gender norms*, which in turn result in different levels of occupational segregation. As such, the first question of this paper is as follows: "*What are the main factors explaining occupational sex segregation?"*

Section II reviews the existing comparative literature about occupational sex segregation. In particular, I focus on two competing hypotheses: the skill-based institutional theory of segregation – which is an attempt to gender the Varieties of Capitalism approach (VoC) - and a gender norms approach. The skill-based theory suggests that each type of economy corresponds to *skill regimes* – LMEs favour general skills while CMEs are more oriented towards the acquisition of specific skills. However, specific skills are more discriminative towards women because they tend to render women's work interruptions more costly for employers, who then avoid hiring women for a range of job positions. Sex role socialisation literature focuses on gender norms and posits that they exert a significant influence on economic outcomes, including occupational segregation. Indeed, socialisation processes would account for a large part in the preferences of individuals, and thus what they consider as "appropriate" jobs for men and women.

Accordingly, I argue that the sharp sex segregation of the Norwegian labour market cannot be fully explained by its specific skill regime, as the skill-based theory suggests. The American labour market is structured differently and still displays a similar pattern, albeit less obvious. It can thus be hypothesised that there is a constant in both cases making the labour force stratified, and this has to do with gender norms.

1.1 Methodology

Within this framework, section III introduces a case study comparing Norway and the United States. In order to test the skill-based theory and the gender norms hypotheses, I analyse two potential causes of horizontal and vertical segregation, as suggested by the literature: *the segregation of educational programmes* and *the employers' promotion practices*. The main objective of the case study method is to identify the factors that have accounted the most for occupational gender segregation: the specific economic and institutional arrangements or the gender norms. In section IV, I discuss the results of my analysis and draw conclusions about the outcome. Finally the last section summarizes the findings of this research.

II. Literature Review

2.1 Introduction

The gender segregation of labour markets expresses itself through many aspects. Segregation might be *vertical*, i.e. with one sex filling predominantly positions of authority and decision-making, while the other being disproportionately represented in subordinate occupations (Negrey & Rausch 2009, 521) or *horizontal*, when men or women are under- or over- represented in certain sectors of the economy (European Commission 2009, 7). The segregation of labour is also visible through the apportioning of daily working hours or employment rates by sex (Estévez-Abe 2009, 186). Furthermore, occupational gender segregation has impacts on sex differentials in earnings (Hakim 1992, 132), on women and men's asymmetric economic status and opportunities (Reskin & Bielby 2005, 83) and more globally on economic growth and competitiveness (McCall & Orloff 2005, 159).

There is a wide array of literature focusing on both aspects and implications of gender segregation. Feminist analyses have first emphasised the importance of work/family reconciliation policies as key to compare national patterns of gender equality at work (McCall & Orloff 2005, 159), as predominantly done by the gendered welfare state literature. In particular, scholars have demonstrated that long maternity leaves would damage women's career prospects and advancement (Bergmann 2000, 81) and by contrast, that childcare facilities would promote gender equality by enabling women to remain active (Gupta *et al.* 2006, 33). The Nordic countries have remarkably high levels of childcare coverage in the world (Gupta *et al.* 2006.4). However, the Scandinavian puzzle displaying high levels of occupational sex segregation - in both horizontal and vertical terms - has made it clear that there is no direct connection between women's employment, the welfare state policies that maintain it and gender equality (McCall & Orloff 2005, 159).

Besides the gendered welfare state literature, the human capital theory establishes that women tend not to acquire firm-specific skills through on-the-job training as much as men do (European Commission, 39). This would either be a consequence of women's choice not to fill occupations

that require such skills due to the expected devaluation they would suffer after long career interruptions (in case of childrearing for instance) (Blau *et al.* 2006, 173) or because they have clear sociological preferences for certain educational programmes and occupations (Blau *et al.* 2006, 174). This might also come from employers being reluctant to hire women in order to prevent their potential career interruptions from engendering organisational costs (Blau *et al.* 2006, 226).

However in this article, I will focus on a gender perspective of the 'Varieties of Capitalism' - firstly attempted by Estévez-Abe (2005). Her approach adopts an original emphasis on the nature of *skills* favoured by different types of economies, as theorized by the VoC approach (Hall & Soskice 2001). The skill-based theory, proposed by Estévez-Abe (2005) integrates insights offered by the welfare state literature and the human capital theory and turns it into an argument that seems to solve for a large part the Scandinavian puzzle. However, her theory fails to explain why sex segregation remains in every other advanced capitalist economy. The underlying causes of occupational sex segregation are left out of the picture. In fact the influence of gender norms is central to understand the key mechanisms of individual preferences and expectations yielding particular occupational patterns. I will contrast the theory of Estévez-Abe (2006) with the contribution of Rubery (2009) and address the arguments of theorists of sex role socialisation and female identity, such as Reskin & Bielby (2005), Akerlof and Kranton (2000) and Blau *et al.* (2006).

2.2 The 'Varieties of Capitalism' approach

Peter Hall and David Soskice have offered a framework centred on the behaviour of firms - called the 'Varieties of Capitalism' (VoC) - able to highlight cross-national differences among advanced developed economies by detecting significant institutional variations (Hall & Soskice 2001, 1). Hall & Soskice make a distinction between what they identify as being "coordinated market economies" (CMEs) and "liberal market economies" (LMEs), two poles that they locate on a continuum (Hall & Soskice 2001, 8). Economies such as Germany, Japan, Switzerland, the Netherlands, Belgium, Norway, Denmark, Sweden, Finland and Austria might be classified under the label of CMEs (Hall & Soskice 2001, 19-21), while LMEs correspond essentially to English-speaking countries, i.e. the United States, Britain, Australia, New Zealand, Ireland, Canada (Hall & Soskice 2001, 19), in addition to Israel (Soskice 2009, 171).

In both LMEs and CMEs, firms encounter problems of coordination in five areas that they need to solve in order to maintain their activities profitable (Hall & Soskice 2001, 6): industrial relations, vocational training, corporate governance, inter-firm relations and relations with their employees (Hall & Soskice 2001, 7). Firms thus need to build certain relationships with other economic actors in order to overcome those problems (Hall & Soskice 2001, 6-7).

These two forms of capitalism are thus maintained by key institutions able to overcome the challenges present in these five areas. LMEs are endowed with educational programmes emphasising general competencies (Hall & Soskice 2001, 30) and low levels of employment protection (Hall & Soskice 2001, 19). CMEs develop vocational training systems centred on firm-specific skills and display high levels of employment protection (Hall & Soskice 2001, 19) and active trade unions and employers' associations (Hall & Soskice 2001, 16)

LMEs respond to these coordination demands mainly through "competitive market arrangements" (Hall & Soskice 2001, 8). In the case of industrial relations for instance, companies in LMEs take advantage of very fluid labour markets and hold an important leeway in the hiring and firing of their employees (Hall & Soskice 2001, 30), the market - as a 'demand and supply'

arrangement - is thus the main element governing relations between employers and employees. Associated with weak trade unions, this contributes to short-term employment relations because firms are more inclined to take advantage of freshly trained workers well aware of the latest developments in their sector (Hall & Sokice 2001, 30). Employees would thus invest more in general skills, i.e. transferable across different companies rather than firm-specific ones (Hall & Soskice 2001, 30). By contrast, CMEs rely on the market to a lesser extent and have developed deliberative institutions (Hall & Soskice 2001, 10). Such institutions allow economic actors to negotiate and reach common agreements (Hall & Soskice 2001, 11), through collaborative practices like incomplete contracting or networking (Hall & Soskice 2001, 8). Firms in CMEs thus function more on non-market relationships than in LMEs.

2.2.1 Engendering the VoC: the Skill-Based Theory

Margarita Estévez-Abe's skill-based theory shares the same premise as the 'Varieties of Capitalism' approach, i.e. that certain kinds of institutions link economic actors into either long-term or short-term relationships, enabling employers and workers to commit to certain skills in particular (Estévez-Abe 2006, 148).

a. Skills

Estévez-Abe distinguishes three different types of skills: (1) *firm-specific skills*, which are limited in their transferability - because only the current employer finds them valuable - and acquired through on-the job training (Estévez-Abe 2006, 153); (2) *trade- or industry- specific skills*, that are more portable than the latter, acquired through vocational schools; and (3) *general skills*, that are the most portable and passed on through schools and on-the-job training (Estévez-Abe 2006, 149-153). She argues that general skills are more gender neutral because if the employment terminates, the worker does not suffer the depreciation in the value of her/his skills and can "re-use" them for another job position, which is not the case of firm-specific skills, usable for one firm in particular (Estévez-

Abe 2006, 150). Trade or industry[2]- specific skills also render employees vulnerable when a particular sector of the economy is hit by an economic downturn. Therefore, firm-specific skills, and trade-industry to a lesser extent, are more discriminative towards women (Estévez-Abe 2005, 191). Indeed women are more likely to make work interruptions due to pregnancy and for child care purposes. Moreover, CMEs' institutions, such as high employment protection and vocational training allow economic actors to invest in specific-skills, which is not the case in LMEs where such protection and educational systems are much less predominant (Estévez-Abe 2005, 196-197). CMEs and LMEs thus correspond to different *skill regime* types and CMEs precisely favour the types of skills that are the most disadvantageous for women (Estévez-Abe 2006, 148).

b. *Education Systems : The Gender-Segregating Effect of Skill Regimes*

Such institutional arrangements are gender segregating. Actually in CMEs strong employment protection – that enables economic actors to commit to firm-specific skills - makes the hiring of women more costly for employers (Estévez-Abe 2006, 152). The potential greater number of work interruptions of female workers – in comparison with male workers - would force the employers to systematically find a substitute and train the worker again for the specific skills required for the job position, with the productivity costs that this engenders. The costs of finding and training a new worker and of decreased productivity can be avoided by employers who might decide not to hire women in their childbearing years for specific-skills job positions. This results in a minority of women filling such occupations (Estévez-Abe 2006, 153). Furthermore, institutions aimed at protecting against female-specific risks such as maternity leaves - that are particularly developed in the Nordic countries - might not close the gender gap in skill-acquisition opportunities but rather increase gender segregation (Estévez-Abe 2006, 152). Indeed, if the leave is very long - a year or more- the costs on the employer are even greater and this renders the hiring of female labour in

[2] I use "trade-specific skills" and "industry-specific skills" as synonyms.

specific-skills occupations very difficult (Estévez-Abe 2006, 153). These extra costs include the smooth integration of employees at their return, the re-allocation of the tasks of the absent employee on the remaining staff and the consequent hiring of more personnel (Estévez-Abe 2006, 153). Moreover, vocational training is also discriminative towards women because it necessarily involves the effort of an employer willing to let the employee acquire those specific skills (Estévez-Abe 2006, 154). Because the employer expects to benefit from the worker's skills, he/she would not recruit women whose likely leaves might be costly (Estévez-Abe 2006, 154). *Therefore, the hypothesis deduced from the skill-based theory contends that women invest less in industry-specific skills relative to men in the same country.*

c. *Vertical Segregation in the Skill-Based Theory*

According to the skill-based theory, economies relying on specific skills incorporate greater resistance against women's career advancement than in economies favouring general assets (Estévez-Abe 2006, 169). In fact, employers tend not to promote female human capital because of the costs that this would imply if women stay away from work for relatively long periods of time (Estévez-Abe 2006, 150), especially if they are in managerial positions. Thus managers tend to prefer male workers who are less likely to take time off for childrearing or care responsibilities. Indeed, employers do not have legal rights to just fire women who would be in these situations, thanks to employment protection measures that prevent them from exercising such practices (Hall & Soskice 2001, 16). This is less the case in LMEs, where labour markets are fluid, allowing employers to hire and fire on a short-term basis (Hall & Soskice 2001, 16). Thus, according to Estévez-Abe, employers invest less in female human capital, which in turn make women deprived in terms of skills for higher status occupations (Estévez-Abe 2006, 170). In other words, according to Hadas Mandel and Michael Shalev, CMEs having a labour market dominated by specific skills, with corresponding training systems oriented towards such competencies, employment relations require long-term commitments (Mandel & Shalev 2009, 171). By contrast in LMEs, women are

more competitive for high-ranked positions because the economy relies on general skills that do no require long-term commitment between employers and employees and the absence of employment protection measures do not generate extra costs on women's absence from work (Mandel & Shalev 2009, 171). Following this logic, work arrangements such as part-time employment – which also generate absence from work- might also aggravate weak human capital accumulation and the consequential under-representation of women to top positions. *The hypothesis that can be derived from the joint contribution of Estévez-Abe and Mandel & Shalev is the following: Strong employment protection associated with policies allowing a weak attachment to the labour market - such as long parental leaves and part-time employment - reduce women's career advancement in a specific-skill oriented economy. By extension, the under-representation of high-ranked women workers would take place to a lesser extent in LMEs, because they do not rely primarily on specific skills.*

2.3 Gender Norms

a. Sex stereotypes

The critiques of Jill Rubery on the gendered VoC literature highlight the excessive importance of employers' role in occupational gender stratification (Rubery 2009, 199). Rubery argues that economic systems allow considerable room for discriminatory mechanisms (Rubery 2009, 199). She refers in particular to firm practices, such as the promotion on the basis of internal recommendations, or long-hours culture (unsuitable for mothers bearing unequal burdens of parental work) (Rubery 2009, 199). These mechanisms are set up by employers as well as the male workforce and infused by *social norms* (Rubery 2009, 200).

This argument based on the role of gendered social norms and sex stereotypes has been the core causal mechanism explaining sex stratification in labour markets for many sociologists. Barbara Reskin and Denise Bielby for instance define sex stereotypes as the "personality traits, preferences and potential", which are inferred from an individual biological sex (Reskin & Bielby 2005, 73). These stereotypes are ubiquitous and generate particular behaviours, considered as

appropriate or not (European Commission 2009, 45). This sex differentiation does not necessarily result in discrimination, but is a necessary condition for social stratification, i.e. a "systematic inequality in the distribution of socially valued resources on the basis of people's personal characteristics" (Reskin & Bielby 2005, 72). It follows a cultural consensus determining which are the appropriate jobs for each sex (Reskin & Bielby 2005, 73). Clear evidence of this phenomenon of gender-job association is the construction of stereotypes such as "Rose the Riveter" during the Second World War in the United States. In order to remedy the absence of male workers in male-dominated trades, the media and the government launched propaganda and campaigns picturing women able to do men's work without losing their femininity, and destroyed those values afterwards, when the war ended (European Commission 2009, 40; Akerlof & Kranton 2000, 734). It was thus admitted that women could temporarily omit gender prescriptions and undertake such professional activities, which would be "forgiven" during this period of emergency caused by the war (Akerlof & Kranton 2000, 735). However, there is cross-national variation regarding what are considered as either male or female jobs (European Commission 2009). As George Akerlof and Rachel Kranton suggest, such differences might be the result of national feminist movements on societal norms (Akerlof & Kranton 2000, 735). Indeed, feminist influences have emphasised various aspects of women's lives; among capitalist economies, they have been more or less conservative and differently oriented towards economic empowerment or moral virtues for instance, these discourses might be relevant with respect to gender segregation.

b. Education

As for implications of sex stereotypes on education, the extensive study on labour markets by Blau *et al.* suggests that occupational gender segregation might account partly for the gender segregation in educational programmes, which are themselves the result of gender-appropriate lines of study (Blau *et al.* 2006, 176). Women might thus have incorporated appropriate "feminine" traits, such as being "subordinate, nurturing and emotional", while male professions might be stereotyped

as requiring authority, competition and rationality (Blau *et al.* 2006, 177). Such socialization processes may render individuals reluctant to engage in fields that do not correspond to their gender identity because they would feel incompetent or in contradiction with themselves, which might in turn undermine their performance (Blau et al. 2006, 179). Furthermore, subtle barriers still persist against women's higher education entry (Blau *et al.* 2006, 180), even though formal entry barriers have been removed in the 19th and 20th centuries (Blau *et al.* 2006, 179). *The main hypothesis inferred from this literature is the following: Women and men are expected to choose the fields that are socially constructed as "female" of "male" fields in their society.*

c. Employers practices

Levels of occupational sex segregation are also dependent on firm practices, especially the ones related to *promotion practices* within firms (Reskin & Bielby 2005, 75). Despite anti-discrimination legislation - in effect in the majority of developed economies[3] - there are still subtle barriers against women's career advancement (European Commission 200, 45). Depending on the discretion they hold and their accountability towards applicants and their superiors, hiring agents might favour their preferences instead of objective factors (Reskin & Bielby 2005, 76). These preferences might have to do with the perception that men make better bosses than women, or with the difficulty of certain employees to be managed by female executives (Blau *et al.* 2006, 215). Furthermore, others employers might have the conviction that it would be risky to promote women because they might be less committed to their work due to family responsibilities (Eagly & Carli 2007, 4). *The main hypothesis resulting from this literature contends that: The ratio of women managers in the overall economy is dependent on the employers' perception that women are as able as men to perform well in top management positions.*

[3] Although the strength of protective laws against discrimination may vary among countries, the countries under scrutiny in this article – the United States and Norway – both display extensive anti-discrimination legislation (Estévez-Abe 2005, 186).

III. Case-Study

The primary objective of this section is to identify which factors account the most for occupational gender segregation in Norway and the United States: the *skill regime* or the *gender norms*. Accordingly, an analysis in both countries of two potential causes of horizontal and vertical occupational sex segregation – as suggested by the literature- would provide answers. I will therefore focus on the *gender segregation of educational programmes* and the *employers' promotion practices*; and test my two hypotheses in each of these cases. The hypotheses stemming from the skill-based theory being rather factual, I will analyse statistical data. Regarding gender norms hypotheses, I will look at the Norwegian and American women's movements and at value surveys.

3.1 Methodological Considerations about the Measurement of Occupational Sex Segregation

There is an extensive and growing literature addressing the methodological aspects of occupational segregation (European Commission 2009, 30). Indeed, occupational sex segregation is difficult to capture in one single index, given its multi-faceted aspects (Hakim 1992, 127; 132). There are different formulas[4] to measure it and each has its own strengths and weaknesses (Hakim 1992, 130). For instance, the Duncan and Duncan Index of Dissimilarity (ID) - which is the most widely used – and the standardized Karmel and MacLachlan Index (IP) are both based on the different proportion of women and men across occupations *or* sectors (European Commission 2009, 31). However these indices' exclusive focus on occupations underestimates the importance of sex segregation because each occupation covers a large number of jobs among thousands of firms, which themselves are often stratified (Petersen & Morgan 1995, 331). Furthermore, such indexes are not sophisticated enough to capture vertical segregation, and according to Catherine

[4] See Appendix, I.

Hakim, vertical stratification precisely accounts for the main cause of gender pay gaps (Hakim 1992, 127). Hakim has thus created an index – the Hakim Sex-Ratio Index of occupational segregation - which is based on comparing the sex-ratio of the entire work-force (Hakim 1992, 130) and distinguishes between female-dominated and male-dominated occupations (European Commission 2009, 31).

3.2 Country Case Study: Norway

I choose to compare Norway partly because it is considered as a CME by the VoC approach (Hall & Soskice 2001, 19). Indeed, the majority of skills within the Norwegian workforce are more likely to be firm-specific (Bowman 2005, 573). Moreover, employment protection is quite high, scoring above the average employment protection among OECD[5] countries (Venn 2009, 8). Moreover, with respect to the educational system, vocational training is largely widespread (Estévez-Abe 2006, 157). Work/family reconciliation policies are also very developed. With regard to gender stratification at work, Norway is one of the most sex segregated Scandinavian[6] countries, before Sweden and Denmark for instance (European Commission 2009, 33). Norway's IP Index in 2007 is 22.7, i.e. 22.7% of the workforce would need to change economic sectors in order to make an even distribution of men and women across sectors, such percentage is 21.3 for Sweden and 18.9 for Denmark (European Commission 2009, 33). Regarding vertical segregation, 40 % of board members in public-owned companies were female in 2009, but the majority of boards are still chaired by men and a mere 2 % of the CEOs of companies listed on the Oslo stock exchange are women CEOs (Storvik & Teigen 2010, 3). Moreover, Norway is interesting regarding its welfare state, whose construction was highly influenced by Norwegian feminist thinking. It took a longer

[5] The Organisation for Economic Cooperation and Development

[6] Scandinavia refers here to its broad cultural understanding, i.e. Norway and Sweden (geographic Scandinavia) as well as Denmark, Iceland, Finland and the Faroe Islands (but a very few statistical data is available for the latter). "Scandinavia" World Encyclopedia. Philip's, 2008. Oxford Reference Online. <http://www.oxfordreference.com/views/ENTRY.html?subview=Main&entry=t142.e10328> (accessed on August 25th, 2011).

time to develop and its gender differentiation in terms of social entitlements is definitely sharper, compared to its neighbouring countries (Sainsbury 2001, 114). This may say a lot about Norwegian gender norms. However, the Norwegian society - and the "Nordic culture" in general, is considered as very gender egalitarian, as measured by the very high scores obtained in the World Value Survey[7].

3.3 Country Case Study: the United States

By contrast, the United States is considered to be the archetypical example of an LME (Hall & Sokice 2001, 27). Only a few American industries are endowed with business associations able to engage in collective bargaining and secure employment's related aspects (Hall & Soskice 2001, 32). The employment protection is therefore very low, as measured by the OECD, the lowest among its member states (Venn 2009, 8). The corporate hierarchies concentrate the power in top management, which makes it easier to release employees, especially in times of economic downturn (Hall & Soskice 2001, 33). The training system primarily emphasises the acquisition of general skills (Hall & Soskice 2001, 30). The welfare state provides particularly limited services and no paid parental leave is guaranteed by the legislation (Berggren 2007, 314). Such arrangements are left to the discretion of employers (Berggren 2007, 314). Regarding occupational sex segregation, the American labour market has a low level[8] of gender segregation (Estévez-Abe 2006, 143). Moreover, the American society represents an interesting case because of its very high number of women business leaders – comparatively to other countries in the world (Périvier 2009, 67). The United States also hold very active national women's movements, such as the National Organisation for Women (NOW), which is deemed to be the most organized and professionalized women's movement in the world (Katzenstein 1987, 12).

[7] http://www.worldvaluessurvey.org/wvs/articles/folder_published/article_base_54 (accessed on August 26th, 2011)

[8] No comparable IP index with Norway was available, however calculations based on the Current Population Survey (CPS) indicate substantial declines in the amount of segregation by occupation occurred since the 1960s (Blau *et al.* 2006, 145). Furthermore, my own analysis of the statistics of the American labour compared to the Norwegian workforce shows a lesser segregation in the United States (see Appendix, II).

3.4 Analysis of Educational Programmes Segregation

a. The Norwegian education system

In Norway, compulsory schooling lasts 10 years - with a unified primary and lower secondary education - until the pupils reach approximately the age of 16 years old (Ministry of Education and Research 2007[9], 9). After that, the upper secondary education takes three years to complete and is divided in three different paths leading to higher education (through general studies), or awarding either vocational qualifications or basic skills/training (MER 2007, 12). Vocational education and training is officially recognized by a craft or journeyman's certificate, involving one year training in a firm (MER 2007, 12). General studies are definitely what VoC consider as "general skills", and vocational education corresponds to "specific skills", either "industry-specific" or "firm-specific skills". In 2009, about 50% of studies undertaken in the Norwegian educational system corresponded to vocational training (Statistics Norway 2009, 12).

b. The American education system

The American education system is decentralized, resulting from the federal structure of the United States. However, certain characteristics are common across states, such as compulsory schooling until the age of 16 (US department of State 2008, 4). Moreover, secondary schools – called high schools – offer a broad range of academic and elective courses for students between 14 and 18 years old (US department of State 2008, 6). Students can choose advanced academic courses or vocational classwork, or both, but they will major in the field in which they have earned the most credits (National Center for Education Statistics[10] 2008, v-vi). Vocational training - known as Career and Technical Education (CTE) - is present at the secondary[11] and post-secondary levels

[9] Replaced in the remaining of the article by the acronym: MER.
[10] Replaced in the remaining of the article by the acronym: NCES.
[11] However, in order to remain comparable with Norway, I will focus only on CTE in high schools, furthermore CTE at the post-secondary level might lead to further education, which does not correspond properly to "vocational education" as such.

(NCES 2008, iii). Only 21% of the 2005 graduates[12] earned an occupational degree at the high school level (NCES 2008, v).

3.4.1 Skill-Based hypothesis

H_{a1}: Women invest less in industry-specific skills relative to men in the same country.

Norway:

In 2009, Norwegian girls accounted for 44.3% in vocational education, and for only 30.9% of apprentices. However, 55.5% of pupils in general studies were girls (Statistics Norway 2009, 12).

The United States:

In 2005, American girls represented 40% of pupils with an occupational degree. However, 54.1% of pupils in academic studies were girls. (NCES 2008, 41)

3.5.2 Gender Norms Hypothesis

Because gender norms are particularly difficult to measure, they must be deduced. One way to capture the potential meanings of the gender norms in a society is to look at the discourse promoted by women's movements, and then infer from them the respective conceptions of "women's work" and "men's work". Another way consists in addressing value surveys.

In the case of Norway, it seems relevant to look at the building of the welfare state, because it is and has been one of the main targets of women's organisations, since the early 19th century (Sainsbury 2001). In fact, compared to the rest of Scandinavia, Norway stands out as "different" in terms of gender norms (Sainsbury 2001, 113). Indeed, the different ideologies promoted by

[12] Latest statistics available.

feminist movements in the late 19th century, have particularly emphasised traditional gender differences, such as women's domesticity and moral purity for instance, which makes women's norms particularly linked to notions of motherhood today (Sainsbury 2001, 118). This is visible through the Norwegian policy structure displaying a particular emphasis on family obligations (Sainsbury 2001, 114). Moreover, Norwegian social policies are based on assumptions of a "domestic mother" as the norm, which is not the case of the Danish or Swedish welfare states that are rather structured around the concept of the "employed mother" (Sainsbury 2001, 114-115). That's why debates about child care in Norway around the 1970-80s were directed towards the needs of the child, rather than the working mother's (Crampton & Harris 1997, 194). Another important feature of the Norwegian welfare state about women's work has to do with the fact that caring is considered as "work" in Norway (Crampton & Harris 1997, 194). Regarding men's position within the rhetoric of these women's movements, it is interesting to see that men are also expected to care to a certain extent (Crampton & Harris 1997, 196). Indeed, the Norwegian conception of gender equality – as influenced by the second wave of feminism in the 1970s - demands changes in the domestic sphere (Crampton & Harris 1997, 194). Therefore, gender roles in Norway can be expected to follow - to a certain extent- a "traditional" path with conceptions of "breadwinner" for men and of "motherhood" for women, accompanied by gender egalitarian norms in terms of domestic responsibilities. Furthermore, a value survey conducted by Crampton & Harris (1997) has revealed that Norwegian respondents end up being less 'progressive' in terms of gender roles as far as the influence of women's employment on the family life is concerned (Crampton & Harris 1997, 195). 41% of male respondents and 24% of female respondents "disagree" to the statement: "A working mother can establish just as warm and secure a relationship with her children as a mother who does not work" (Crampton & Harris 1997, 200). Such elements predict a strong gender differentiation in the choice of fields of study. The idea of "care" is viewed as a regular professional activity. It might then be inferred that what is considered as "women's work" is strongly linked with concepts of care, help, readiness to listen and communication. By

contrast, following gender stereotyped prescriptions, "men's work" might more relate to physical effort and technical handling, but wouldn't necessary exclude care-giving.

In the United States, women's movements hold liberal views and focus on issues of rights, opportunities and anti-discrimination (Wright *et al.* 1995, 414). Gender equality is based on a "universal breadwinner" model that favours employment rights (Fraser 1993[13] in Wright *et al.* 1995, 413). The feminist discourse is less constituted of notions of motherhood and family than endowed with clear aims of equal access to employment, as embodied in the title CII of the Civil Rights Act of 1964 and the establishment of the Equal Employment Opportunities Commission (Gelb 1987, 270). American women's movements usually take the form of interest group, with a hierarchical structure and a large staff (Gelb 1987, 281). Their lobbying structure has resulted in the Title IX of the Educational Amendments of 1972[14], insuring equal access to all educational programs, without consideration of sex. Furthermore, a study conducted by Klein (1987) shows that both men and women acknowledge that sex discrimination exists (Klein 1987, 36). However, the World Value Survey does not provides the same assessment: 7.9% of respondents agree that: "University is more important for a boy than for a girl[15]". Even if this percentage might seem low, more individuals merely "disagree" to that statement (58.4%), rather than "strongly disagree" (33.7%). Therefore, it might be deduced from this that "appropriate" women's work conceptions are more flexible than in Norway, where notions of family and care are very important. Nevertheless traditional conceptions of gender norms are still scattered among Americans. We can thus infer that conceptions of "men's work" are also consistent with stereotyped ideals.

The hypothesis resulting from the gender norms approach:

[13] Fraser, Nancy (1993). "After the Family Wage: What Do Women Want in Social Welfare?". Department of Philosophy, Northwestern University. Evanston, IL. Unpublished manuscript.
[14] Now renamed the Patsy T. Mink Equal Opportunity in Education Act, http://www.house.gov/list/press/hi02_hirono/titleix35.html (accessed on August 28th, 2011)
[15] See Appendix, II.

H_{b1}: Women and men are expected to choose respectively the fields that are socially constructed as "female" of "male" fields in their society.

Pupils in Upper Secondary Education, by Education Programme / Field of Study. Percentage of Women. 1 October 2010. Norway

Education programme/ Field of Study	Total Pupils	Per cent women
General Studies :	**111056**	**54.9**
Specialisation in General Studies	93311	56.0
Sports and Physical Studies	11359	41.3
Music, Dance and Drama	6386	63.0
Vocational Education :	81808	**44.4**
Building and Construction	9107	3.7
Design, Arts and Crafts	5929	88.8
Electicity and Electronics	9971	4.8
Health and Social Care	18322	87.6
Media and Communication	9393	57.2
Agriculture, Fishing and Forestry	4305	56.7
Restaurant and Food	4506	48.5
Service and Transport	7412	39.6
Technical and Industrial production	12863	10.0

Source: Statistics Norway[16]

In Norway, it is clear that certain fields of study are disproportionately favoured by female pupils, such as "design, arts and crafts" (88.8% of the pupils in this specialty are women) or "health and social care" (87.6%). However, it is also important to note that the female interest in these programmes is underestimated given that the proportion of women in these types of studies (i.e. vocational studies) is 44.4%. Men are heavily concentrated in subjects such as "building and construction" (96.3%) and "electricity and electronics" (95.2%).

[16] http://www.ssb.no/english/subjects/04/02/30/vgu_en/tab-2011-05-05-03-en.html (accessed on August 28th, 2011)

Percentage distribution of credential-seeking undergraduates in career fields with each career major, by sex, 2004. United States

Career Majors	Male	Female
All Credential-seeking Undergraduates in career fields	42.0	58.0
Agriculture and Natural Resources	55.5	45.5
Business and Marketing	45.2	54.8
Communications	41.4	58.6
Computer Sciences	73.1	26.9
Education	19.8	80.2
Engineering and Architectural Sciences	80.6	19.4
Health Care	16.6	83.4
Legal Services	26.1	73.9
Personal Consumer services	29.7	70.3
Protective Services	54.9	45.1
Public, Social and Human Services	20.0	80.0
Trade and Industry	92.3	7.7

Source: US Department of State 2008

In the United States, male pupils are more attracted to fields of study such as "computer sciences" (73.1% of pupils are boys), "engineering and architectural sciences" (80.6%) and "trade and industry" (92.3%). "Education" (80.2% of pupils are girls), "health care" (83.4%), "legal services" (73.9%), "personal and consumer services" (70.3%), as well as "public, social and human services" (80.0%) are much more likely to be studied by female pupils.

3.5 Analysis of Employers' Promotion Practices

Firm practices are partly related to vertical occupational segregation, which varies according to the percentage of women in managerial positions. Indeed, it is interesting to see if the gender gap in authority – i.e. in managerial positions - is a by-product of skill regimes or rather the result of sex role socialisation. Managerial occupations refer here to positions involving decision-making power, sanctioning authority (i.e. capacity to impose rewards and punishments), or both (Wright *et al.* 1995, 414; 416).

a. The Norwegian Labour

In 2008[17], the Norwegian economy held 5.9%[18] of managerial positions[19], proportionately to the labour force, and women accounted for only 31% of managers (Statistics Norway 2010, 24). A relatively high proportion of Norwegian women in employment work part-time: 43%, whereas only 13% of Norwegian men do (Statistics Norway 2010, 12). Finally, women's labour force participation is high, in comparison with international standards, with 71% of women aged 15 to 74 years old employed, representing 47% of the total labour force (Statistics Norway 2010, 24). Regarding parental leaves, they last between 43 to 53 weeks, compensated at 80 or 100% (of the last wage before the leave), 9 weeks are reserved for the mother (3 weeks before delivery and 4 afterwards), and 4 weeks are only usable by the father (ILO 2004, 85). The rest of the leave can be shared out between the parents (ILO 2004, 85). On average, women take 94% (Wilkinson *et al.* 1997) of their maternity leave, i.e. they stay away from work for almost a year (Wilkinson *et al.* 1997). In 2008, 90 % of new fathers used their paternal quota[20].

b. The American Labour

The American economy presents a much different picture. In 2011, the ratio of mangers on the total labour force is 35.14% (US department of labour 2011, table A-13). Women fill 42.7% of all manager positions (US department of Labour 2010, 28). Part-time employment is relatively low, with 26%[21] of female workers having a part-time position (US department of Labour 2010, 2), and 13%[22] of men workers. American women are also particularly active, representing 46.8% of the total labour force (US department of labour 2011, table B). Regarding parental leaves, the US legislation does not guarantee any paid parental leave as such (Deven & Moss 2002, 252). However,

[17] Latest data available.
[18] Calculated ratio: 148'000/2'508'000, i.e. managers / total labour force
http://www.ssb.no/yrkeaku_en/tab-2011-02-22-01-en.html (accessed on August 29th, 2011)
[19] The term "managerial positions" covers the category "legislators, senior officials and managers", as found in the Norwegian statistics.
[20] Information collected on the official website of Norway in the UK:
http://www.norway.org.uk/aboutnorway/society/welfare/benefits/ (accessed on August 30th, 2011)
[21] In 2010, http://www.bls.gov/cps/cpswom2010.pdf (accessed on August 30th, 2011)
[22] Calculated ratio: men in part-time employment/ total male labour force, i.e. 77'569'000/13'526'000
http://www.bls.gov/news.release/atus.t04.htm (accessed on August 29th, 2011)

the 1993 Family and Medical Leave Act (FMLA) enables employees to take up to 12 weeks of unpaid leave for the birth of a child or for the adoption of a child, but also to care for a family member with a health problem, or to take medical leave for a serious health condition[23]. Such a leave is not paid, but workers are insured to get their job back at the end of their leave[24]. Although some individual firms offer a paid maternity leave arrangement, many parents combine short-term disability, sick leave, holiday, personal days, and unpaid family leave (Boushey 2005, 7). On average[25], 28.5% of mothers enjoy paid maternity leave (of usually 12 weeks), 18.4% use other paid leaves, such as sick days, disability or vacation, 25.9% go on leave while being unpaid, 26.3% quit (or are let go) and 1.8% of the mothers do not stop working (Boushey 2005, 7).

3.5.1 Skill-Based Hypothesis

H_{a2}: Strong employment protection associated with policies allowing a weak attachment to the labour market - such as long parental leaves and part-time employment - reduce women's career advancement in a specific-skill economy. By extension, the under-representation of high-ranked women workers would take place to a lesser extent in LMEs, because they do not rely primarily on specific skills.

	Managerial positions available as a percentage of the total labour positions %	Share of women managers as a percentage of total managers %	Level of employment protection	Women in part-time employment %	Long paid parental leave
Norway	5.9	42.7	2.20 [a]	47	YES
United States	35.14	31	0.56 [a]	26	NO

[a] Data applicable for the year 2008, collected from the OECD[26]

[23] See US Department of Labour: http://www.dol.gov/dol/topic/benefits-leave/fmla.htm (accessed on August 30th, 2011)
[24] Ibid
[25] Only for women having their first child.
[26] http://www.oecd.org/document/11/0,3746,en_2649_37457_42695243_1_1_1_37457,00.html (accessed on August 29th, 2011)

3.5.2 Gender Norms hypothesis

H_{b2} The ratio of women managers in the overall economy is dependent on the employers' perception that women are as able as men to perform well in top management positions.

Norway:

Norwegian citizens hold particularly progressive gender attitudes. To one of the assertions of the World Value Survey (2007)[27]: "Men make better business executives than women do", 81% of the respondents disagree (59.6% "strongly disagree" and 21.4% merely "disagree"). However, the feminist political agenda on the issue of gender authority gap in Norway is quite absent. It seems that women's movements in Norway are weakly mobilised, women's interests being rather embedded in social-democratic parties (Wright *et al.* 1995, 433). Moreover, Norwegian women's movements have been less concerned with gender inequality in the workplace than with state interventions providing services and grants enhancing mothers' welfare (Wright *et al.* 1995, 432). Such priorities do not contribute directly to remove discrimination in promotion practices (Wright *et al.* 1995, 432). The social-democratic tradition of this country might also have encouraged an emphasis on common goods, such as social protection, employment protection and health care (Wright et al. 1995, 433), drawing feminist concerns mainly along those paths. It can thus be deduced that Norwegian employers are not very much encouraged to think that women would be as good as men managers, because women's movements were not very present in the workplace to challenge those conceptions.

[27] See appendix, III.

The United States:

American citizens also adopt gender egalitarian attitudes, the World Value Survey has found that 83.5% of Americans disagree with the statement that men would be better executives than women (29.9% strongly disagree and 53.6% disagree). American women's movements are highly concerned with equal rights and their liberal tradition particularly fosters individualist goals (Wright *et al.* 1995, 433). Indeed, a range of women's movements in the United States is dedicated in eliminating ascriptive barriers to individual achievement at the workplace (Gelb 1987, 281). The National Organisation for Women (NOW) adopts the following discourse on its website: "NOW works to eliminate discrimination and harassment in the workplace, schools, the justice system, and all other sectors of society (…)[28]" NOW and other organisations, such as Wider Opportunity for Women (WOW) and Catalyst also act as professional networks by actively finding jobs for women at all levels of the economic ladder (Gelb 1987, 281). In other words, professional women's organisations are particularly active in the United States, they primarily seek to enforce anti-discrimination and affirmative action legislation and promote women's career advancement (Gelb 1987, 281). American employers are thus expected to be sensitive to the issue of sex discrimination at work thanks to the active women's networks struggling for equality, even at the top of the hierarchy. Such developments might certainly have encouraged bosses to consider women as competent managers.

[28] http://www.now.org/organization/info.html (accessed on August 30th, 2011)

IV. Discussion

The objective of this dissertation has been to determine the factors which prove most salient in explaining occupational sex segregation. By analysing the sex distribution of educational majors and employers' promotion practices in divergent models of capitalism, it is possible to answer this question.

4.1 Majors Segregation

In Norway and in the United States, women invest less in industry-specific skills relative to men, which corroborates the skill-based theory hypothesis. However, it is interesting to notice that Norwegian girls tend to invest more in those assets, in comparison with their American counterparts: they comprise 44.3% of students in vocational education in Norway and only 40.8% in the United States. Indeed, according to the skill-based theory the incentive for women to invest in these types of competencies should be very low due to the risks of depreciation that they incur.

The hypothesis based on gender norms seems more plausible: the Norwegian and the American labour markets are segregated along stereotyped lines. Furthermore, the skill-based theory fails to explain the segregation of vocational programs themselves. Even though respective conceptions of "men's work" and "women's work" are deduced on an impressionistic analysis of values and national women's movements. One can reasonably admit that there is a significant variation in the conceptions of gender equality within the two national contexts. In Norway, gender equality seems to be defined within the family sphere, through an idea of childrearing that needs to avoid the 'inherent damages' caused by the absence of a working mother. Norwegian's rather conservative conception of working mothers' relationships with their children further demonstrates the ambiguity of the family-oriented gender equality in Norway. As Wright *et al.* nicely put it: gender equality in Norway is conceptualised as a way "to equalize the conditions of life for women engaged primarily in the domestic sphere" (Wright *et al.* 1995, 432). American feminism rather seems more aggressive and ready to conquer male-dominated fields. Traditional gender roles

are much more readily undermined and put into question than in the Norwegian context. However, stereotyped values about gender roles still persist as the 7.9% of respondents less favourable to women's university background highlight. Indeed, segregation of educational programmes in the USA is less obvious: much of the stratified fields of study encompass between 70 and 83% of either male or female students (except for "trade and industry"), while in Norway, educational programmes are segregated at levels reaching 88 to 96%.

In conclusion, even though the skill-based theory provides correct insights, they are inconsistent with respect to the skill regime. However, what remains constant is the systematic sex segregation of the American and the Norwegian education systems, albeit to a lesser extent in the United States.

4.2 Employers' Promotion Practices

The skill-based approach makes correct predictions: Norway - endowed with high employment protection and record length maternity leave - has trouble to get women into managers positions, despite the introduction of a 40% quota on company boards in 2003[29]. The United States fares quite well in terms of female managers with minimal job guarantees and an extremely sparse set of family policies. The large ratio of Norwegian women (47%) having part-time jobs compared to the 26% of American women in such arrangements further confirms the skill-based theory hypothesis. In the case of Norwegian and American men, their low level of part-time employment (13% in both cases) might also be correlated with their large representation in top occupations. Looking more closely at maternity leaves, it is clear that Norwegian women enjoy considerably longer periods away from their jobs, compared to Norwegian men and American women and men. This finding is also consistent with the skill-based theory suggesting that employers would not invest much in female human capital in order to avoid the costs of their absence. However, vertical segregation is still present in the American case and the skill-based

[29] Such quota only applies to public companies, see Storvik & Teigen 2010, page 3.

theory cannot apply the same causal mechanism as in Norway to explain this stratification. Finally, we can also assume that the higher number of managerial positions in the American context favours the higher number of women at these positions, while in Norway, it certainly makes it even harder for female workers to be promoted.

Regarding the gender norms hypothesis, both American and Norwegian respondents hold positive opinions about women's business ability to be executives, however it seems that the mobilisation of feminists is key to understand some cross-national variation. Indeed American professional groups are particularly well established across economic sectors and are therefore able to actively influence gender norms through networking and raising awareness. This is not the case of Norwegian feminism that seems to express itself within the explicit state's commitment to gender equality and not at the workplace *per se*.

In conclusion, the ratio of female managers certainly has to do with the overall attachment of female employees to the labour market in specific-skill regimes, however there is variation in terms of vertical sex segregation across other Nordic countries that undermines the skill-based theory hypothesis. In fact, as the gender norms hypothesis suggests, discourses pushing for equal opportunity at the workplace and explicitly reconsidering women's hierarchical positions definitely seem to influence economic actors and certainly account for a great part in the vertical sex segregation in the United States.

4.3 Conclusion

It can be concluded that the skill-based theory provides valuable insights to understand the Norwegian and the American puzzles, however it definitely overlooks the importance of gender identities in occupational sex segregation. Indeed, skill regimes oriented towards specific assets associated with weak attachments to the labour market and long job tenures certainly play a role in occupational sex stratification. However such variables cannot explain why similar segregated labour patterns are also present in other skill regimes and how it varies across capitalist economies.

Norway and the United States display similar levels of horizontal sex segregation – even though the latter is slightly less stratified - but they very much differ in their vertical segregation. While the gender approach of VoC cannot suggest a consistent causal mechanism to explain these variations, a careful focus on gender norms – through a comparative analysis of values and women's movements - provides more convincing explanations.

V. Conclusion

The broad aim of this dissertation has been to identify the most important causes of occupational sex segregation. In addressing this issue, my argument has consisted in testing two competing hypotheses, both of which seeking to explain gender occupational stratification: the skill-based theory and the gender norms approach. The skill-based theory posits that specific-skill regimes (CMEs) are more discriminative towards women than those relying primarily on general skills (LMEs). Adopting another perspective, the sociological explanations related to gender identities suggested that segregated labour markets are more the result of how economic actors – employees and employers – would perceive gender norms.

I hypothesized that while specific-skill regimes– like in Norway - may appear to be the main reason of occupational sex segregation, gender norms were more influential because stratified labour markets were present even in LMEs. To test my hypothesis, I have derived two specific hypotheses from the literature related to VoC and gender norms and have applied them to two potential causes of respectively horizontal and vertical segregation: educational programs sex segregation and employers' promotion practices.

With regard to the aspect of education, the skill-based approach argued that gender stratification would derive from the under-investment of women in specific skills. However, an analysis of the content of vocational education programmes in Norway and in the United States found that segregation was much more obvious within vocational programmes than across general and vocational paths. Such a finding was consistent with the gender norms approach.

The analysis of employers' promotion practices were also in favour of the gender norms hypothesis, which suggested that the ratio of female managers was related to the employers' perception that they were competent enough to fill managers positions. As for the skill-based theory, it argued that employment protection and a reduced amount of time spent at work explained the low levels of female managers in CMEs. However, the skill-based approach was not

able to provide a similar causal mechanism for LMEs because – even though the United States has a higher ratio of high-ranked female workers – vertical segregation was still persisting.

Finally, the results of this hypothesis testing support my argument. The analysis of horizontal and vertical segregation in Norway and in the United States indicates that economic actors follow patterns of behaviour consistent with the gender norms scattered in their respective national contexts. As such, the gendered VoC approach does not seem valid anymore as the case study clearly shows a varying but persisting pattern of vertical and horizontal segregation across CMEs and LMEs that the skill-based causal mechanism cannot explain.

VI. Appendix

I. Formulas of Occupational Segregation Indexes

A) The Karmel and MacLachlan (1988) Index (IP)

$$IP = 1/N \, \Sigma \, \left| (1-M/N) \cdot M_i - M/N \cdot F_i \right|$$

N= Total employment
M= Number of men in employment
M_i = Number of men in job i
F_i= Number of women in job i

The index ranges from 0 in the case of complete equality to 0.5 (or 0 to 50% if expressed in percentage).

Source: European Commission 2009, 103

B) The Duncan and Duncan Index of Dissimilarity (1955) (ID)

$$ID = \Sigma \, \left| (M_i/M) - (W_i/W) \right| \, / \, 2$$

M= Number of men in employment
M_i = Number of men in job i
W= Number of women in employment
W_i= Number of women in job i

Source: European Commission 2009, 103

C) The Hakim Sex-Ratio Index of occupational segregation
Hakim (1993) index identifies female-dominated, male-dominated and mixed occupations.
She takes the ratio of women in each occupation and adds or subtracts 0.15 to the mean ratio for all women in employment. The female-dominated occupations are the ones in which the mean share of women in employment exceeds 0.15 and the male-dominated ones correspond to those where the share of female is below 0.15; the mixed occupations stand around the ± 15 points' interval around the mean ratio.
Source: European Commission 2009, 103

II. Comparative Analysis of Sex Segregation in Norway and the United States

Occupations	Norway[a] Percent female in main industries	USA[b] Percent female in main industries
Management, professional and financial operations	41.0	42.7
Professionals	45.5	57.5
Office and administration	62.9	74.6
Agricultural and Fishery	19.6	20.5
Production and craft	5.1	28.1
Sales and related occupation	68.8	49.6
Plant, machine operations, maintenance, construction	13.0	4.2

[a] Calculated percentages from Statistics Norway, 2009 data[30]
[b] Calculated percentages from the US Bureau of Statistics, 2010 data (US Department of Labour 2010, 26)

In the case of Norway, there are 3 occupations that include less than 20% of women, while in the USA, only one occupation has a small ratio of women workers. Furthermore, the mean ratio of female in these industries amount to 36.45% for Norway and 39.6% for the United States. This indicates that the American labour is slightly closer to a 50% of female participation and is therefore less segregated than the Norwegian labour market.

III. World Value Survey

World Value Survey 2007 "University is more important for a boy than for a girl."	**United States %**
Agree strongly	1.1
Agree	6.8
Disagree	58.4
Strongly disagree	33.7
Total	**1231**

Source: World Value Survey[31]

IV. World Value Survey

World Value Survey 2007 "Men make better business executives than women do."	**United States %**	**Norway %**	**Total %**
Agree strongly	2.3	3.6	2.9
Agree	14.2	15.4	14.7
Disagree	53.6	21.4	39.0
Strongly disagree	29.9	59.6	43.4
Total	**1225**	**1016**	**2241**

Source: World Value Survey[32]

[30] http://www.ssb.no/yrkeaku_en/tab-2011-02-22-01-en.html (accessed on August 30th, 2011)
[31] http://www.worldvaluessurvey.org (accessed on August 28th, 2011)
[32] Ibid.

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