

A Comparison of the Transition
from Home Production to Labour Market Participation
for Female Populations across Selective Countries

by

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1. Introduction

An increase in the women's labour force participation rate has been one significant change among recent social changes in both developed and developing countries. Particularly, industrialization and specialization of occupation have rapidly increased the demand for female labour, thereby increasing labour force participation by women. The growing proportion of women doing paid work has transformed gender relations, changed patterns of marriage and childbearing, and is often considered as a key indicator of women's progress toward gender equality in the labour market.

This increase is the result of several factors: a higher education level for females relative to the past, higher rates of divorce and of unmarried mothers, and the effort of women to raise their household's overall financial positions. A study by Wion (1990) reveals that the level of education of women is directly related to the percentage of female labour force.

The important historical events that impacted the trends of employment by women in North America are the Industrial Revolution and the Second World War. The Industrial Revolution shifted the working place from home to factories, and helped women in learning new types of work that did not exist before the revolution. An increase in employment of women has occurred due to the special economical structure that naturally arises during war. During the Second World War, women were called to work outside of the home to meet the demand in the labour market. This represented a shift away from their traditional gender role in society and this shift was considerably more dramatic than the one seen during World War I.

According to the U.S Department of Labor, there has been a steady increase in the proportion of women in the labour force since 1900. Moreover, the number of working mothers has been growing rapidly; in 1955, only 25 per cent of mothers were in the labour force, but the figure had risen to 70 per cent by 1996, a substantial increase over the period of 41 years. The increase in the overall female participation rate in recent years is attributed mainly to the increase in the participation rate by married women; generally, movement in the rate in workforce participation of married women has been double the movement seen in the rate for unmarried women (Taeuber and Sweet, 1976).

The current study is mainly motivated by Claudia Goldin's (2006) work. It discusses female labour phases in the United States over the past century. She presents a chronology of these phases and separates them into three evolutionary phases and, most recently, a revolutionary phase. She considers more highly educated women in her work, but points out that the shift from evolution to revolution did not only occur among highly educated women. She chooses a specific age group and specific time periods for her work; she considers women in their thirties and includes the period from the 1920s to the present. She denotes that a shift from one phase to the next phase is caused by various exogenous changes. Each phase shows significant differences in levels for two key indicators of female labour supply: wage elasticity and income elasticity. Also, she identifies which economic and social indicators reveal the outcomes of the phases. This work has been well received in the economic community and she is considered one of the top economists working in female labour economics.

I will look at several countries (excluding the United States given that much work has already assessed the U.S. situation) which she considers in her work in which she

identifies their current status in terms of the three evolutionary phases as well as the similarities and differences amongst the female labour force activity of the relevant countries. Building on Goldin's work, I would also like to assess the recent evolution of female labour force activity in an additional developed country as well as a few additional less developed countries, consider both what evolutionary (or revolutionary) phase they are in, and, if they have not reached the revolutionary phase, how far have they to go and what are the largest obstacles to reaching this advanced stage. The process of selecting sample countries is given below.

According to the 2008 article by the Population Reference Bureau¹, there is a consistent decrease in the gender gap between male and female workers in the United States between the 1970s and today. The article also points out that the size of the gender gap in the labour market differs significantly from state to state; this is potentially explained in part by the composition of races in the state. It provides statistical evidence to support the notion that the gender gap in the workplace is different from race to race postulated by the Population Reference Bureau. In 2005, the gender gap in labour force participation rates among working-age people² was largest among two minority groups: Asians and Latinos.

¹. Closing the Male-Female Labour Force Gap (<http://www.prb.org/Articles/2007/ClosingtheMaleFemaleLabourForceGap.aspx>).

². Age 20 to 64 defined by Population Reference Bureau analysis.

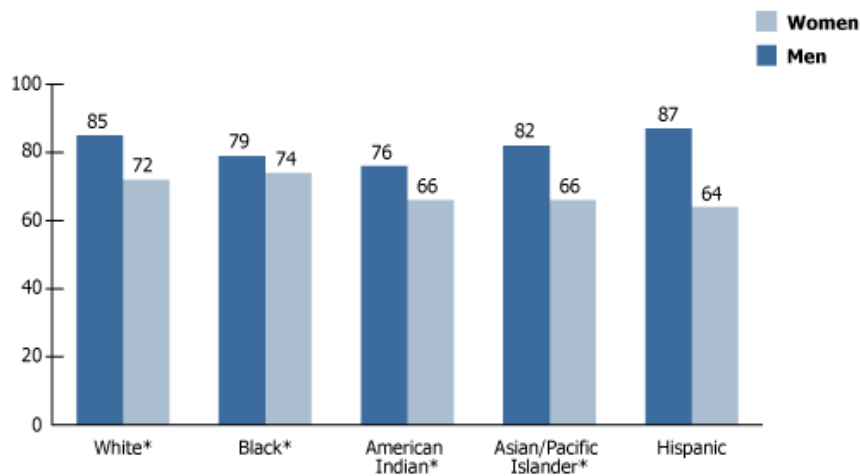


Figure: Labor Force Participation Rates for the Population Ages 20-64, 2005

Source: Population Reference Bureau analysis of the 2005.

American Community Survey. PUMS.

This work is partially motivated by the observation that some Asian races still have strong social stigmas against female workers. Furthermore, it is motivated by the fact that in many developing countries, a significant fraction of the urban workforce is engaged in low-wage, low-productivity occupations even though they've progressed significantly in their level of economic development.

I will include Asian and Latin American countries to look at more details about this cultural issue in this paper. Specifically, I am going to include South Korea and the Philippines as Asian countries along with Chile and Mexico for Latin American countries. In total, I will look at six countries: Chile, Finland, Mexico, New Zealand, South Korea, and the Philippines.

Finland is included as a representative of a developed country given its high GDP and advanced political, economical, and social development. There are many existing studies concerning North American and Western European countries regarding women's

labour issues. Finland would be an interesting North European country, especially given that it has had a female president since 2000 and she was recently re-elected in 2006. New Zealand is also a developed country as its GDP per head is \$28,780 (U.S dollars, 2008)³; but an interesting characteristic of its economic structure is that it still relies heavily on the primary industry. Recently, it has begun to see a change in its structure of the economy to service from primary industry. Social stigmas against women, especially against wives working outside of the home, are widespread and strong in Asian countries. South Korea has a relatively higher GDP per head at \$14,160 (U.S dollars, 2008)⁴ than the other three developing countries (Chile, Mexico and the Philippines), but this is still lower than the other developed countries in this paper. However, compared to other countries with similar levels of GDP in the East Asia region such as Taiwan or Singapore, South Korea has a relatively low level of female participation rate in the labour market. This can be partially explained by a societal attitude which works to exclude women from the labour market, especially married women. According to data from UNESCO for 2006⁵, 47 per cent of students in universities and colleges are female; however, the proportion of females in the labour force who have more than secondary education is only 37 per cent.⁶ Additionally, South Korea has the lowest fertility rate among the six countries in this paper (see Figure 3a and 3b). The Philippines has the highest fertility rate among the six countries at 3.2 children per household and 52 per cent of secondary school students are female which is pretty high when we consider their GDP level. The proportion of women in the total population is 51 per cent (2007), but the

³. World Development Indicators database, World Bank (2008).

⁴. World Development Indicators database, World Bank (2008).

⁵. UNESCO Institute for Statistics. (2008).

⁶. www.kosis.or.kr. (2006.12)

female labour force participation rate is 38 per cent⁷. Mexico, a middle income country, regarded as having a relatively inefficient labour market considering their level of economic development, should be an interesting country to assess for its current evolutionary phase of the female labour force activity. The human capital endowments of employed men and women are approximately equal, yet employment rates are much higher for men than they are for women. For the case of Chile, once again females outnumber the males. One outstanding feature of the Chilean economy in recent decades has been its consistently high growth rate. In 1998, it completed an uninterrupted cycle of 15 years of economic growth at an annual average rate of 7 per cent. Inflation, measured over the past three years, is the lowest it's been since the Great Depression of the 1930s. Despite this recent success, Chile still has an important unsolved problem to deal with: inequality between sexes in the labour market.

I will look at the cases of South Korea and the Philippines and compare them to the two Latin American countries, Mexico and Chile, in order to gain insight into the similarities and differences in labour market gender inequality in the two regions and in the developing world.

Various studies have been done by researchers related to the broad subject of women's employment. Less developed countries have been found to have different patterns of labour supply and employment when compared to more advanced countries in the developed world. Employment conditions also vary greatly base on different levels of economic, political and social conditions. Female employment gaps are related to the

⁷. Compared to the total labour force whose age is over 15 years old.

larger issue of overall gender equality both at home and in the workplace and serve as the main motivation of this paper.

2. Background Literature

The first section of the review focuses on the paper by Claudia Goldin, which presents an interpretive framework of several transition evolutionary phases leading to a revolutionary phase for women's employment. She investigates the chronology of the evolutionary phases from the late nineteenth century to the present time in United States. She separates three evolutionary phases from a quiet revolutionary phase, using the term "quiet revolution" since this phase was accomplished by people not aware they were part of a gradual transformation.

The second section of the review highlights studies concerning women's employment in the labour forces of less developed countries. Economists have become increasingly aware of the significance of studying female workforce participation in recent decades.

2.1. The chronology of women's labour market involvement in the United States

Claudia Goldin identifies four phases of changes of women's employment in the

United States in her 2005 work, “The ‘quiet revolution’ that transformed women’s employment, education, and family.” The first three phases are called “evolutionary” phases by the author and they are precondition phases that lead to a “revolutionary” phase. She examines the transitions from the evolutionary to revolutionary phases and from one evolutionary phase to the next by investigating various changes in exogenous factors. As defined by the author, Phase I: *The Independent Female Worker* occurred from the late nineteenth century to the 1920s in the United States; Phase II: *Easing the Constraints on Married Women’s Work* was from 1930 to 1950; and Phase III: *Roots of the Revolution* was from 1950 to around the mid-to late-1970s. She dates Phase IV: *The Quiet Revolution* from the late-1970s to the present time.

From the late-nineteenth century to the 1920s, the majority of female workers in the labour market were piece workers in the manufacturing or service sectors. A small percentage of female workers was traditional professionals, such as teachers and clerical employees. Most female workers tended to be poorly educated, the average education level among female workers was significantly less than the population average and most of them came from low-income households. During Phase I: *The Independent Female Worker*, a stigma permeated society regarding wives working outside the home due to the nature of the jobs they tended to have which were dirty, dangerous, and required long hours. The non-wage income elasticity was high; the earning wage substitution effect was dominated by the income effect of their labour supply as women in higher-income households generally did not work for a living in the labour market. Even with a very inelastic labour supply curve during Phase I: *The Independent Female Worker*, there was an increase in female labour force participation rates that mainly resulted from a positive

labour supply curve shift. The positive labour supply shift was caused mainly by higher levels of education for young females, decreases in the fertility rate, increased availability of higher quality jobs for women and changes in social attitudes toward working women.

From 1930 to 1950 the labour force participation rate of married women in the United States increased substantially. This period is defined as Phase II: *Easing the Constraints on Married Women's Work*. During this phase, the magnitude of non-wage income elasticity decreased and the wage substitution effect increased because of several changes in social factors. First, the author points out the increase in female labour demand combined with the increase in supply of high school-graduate females who could potentially work in the labour market. Increases in female labour supply and labour demand could be explained by the increase in office jobs such as clerical work brought about as a result of new information technology, by the reduction in the social stigma regarding working wives caused by new jobs for women since the office job is not as dirty or dangerous as factory work (Thus work for women became more accepted by their family), and by the increase in high school enrolment and graduation. Moreover, with the invention of new home technologies and the rise of part-time work, the substitution effect increased. In this second phase, female labour supply increased because of changes in both substitution and non-wage income effects, so that the labour supply curve became more elastic. And the overall demand for female workers increased as demand for clerical workers increased in the labour market.

By Phase III: *Roots of the Revolution*, defined as the time period beginning in the 1950s and ending in the 1970s by the author, the labour supply curve of female workers became considerably more elastic; its wage substitution effect increased substantially and

labour force participation of married women expanded because of a rise in part-time work. During Phase III: *Roots of the Revolution*, the non-wage income effect decreased in a similar fashion as in Phase II: *Easing the Constraints on Married Women's Work* as continued lessening of the social stigma against working married women influenced American society. Another change in a characteristic of female workers in Phase III: *Roots of the Revolution* compared to female labour in Phase I: *The Independent Female Worker* in the United States was that the average education level of female workers was higher than the average education level of all females in society (the reverse was true in Phase I: *The Independent Female Worker*). The biggest factor leading to the increase of female workers in the labour market in this period was the high rate of participation by married women compared to Phase II: *Easing the Constraints on Married Women's Work*. By the social acceptance of married women in the workplace and the creation of scheduled part-time jobs, more married women found it feasible to work. However, married women were still the secondary earners in their households, though their human capital continued to increase. Moreover, most women in the workplace had intermittent employment in various jobs such as secretaries, teachers, nurses, social workers, and librarians which needed formal education or vocational trainings. This period was defined as “the root of the quiet revolution” by the author; there were large increases in female labour demand and in the labour supply curve wage elasticity, though the majority of women had no plan for extended careers. This high percentage of women in the labour market was a precondition to go to the revolutionary phase.

The author defines Phase IV: *The Quiet Revolution*, which is from the late 1970s to the present time, as “the quiet revolution”. She mainly discusses two social indicators,

horizon and identity, to reflect the changes. A horizon, here, indicates whether at the time of human capital investment a woman perceives that her lifetime labour force involvement will be long and continuous or intermittent and brief. And an identity in this paper refers to whether a woman finds individuality in her job, occupation, profession, or career. Goldin uses data from the National Longitudinal Survey (NLS) of Young Women and NLS of Youth in 1968 and in 1979 respectively. This survey was used to see how expectations of being in the labour force changed over time for young women. The survey showed that young women became better at predicting and preparing for their future lifetime employment. The author supported this assertion by comparing the data about female and male college attendance and graduation rates.⁸ The rate of attendance and graduation from college for women increased while the gap with men with regards to college majors declined. At college women had the tendency to choose their major not with a consumption orientation but rather with an investment orientation, which is more valuable in the labour market. This led to females becoming relatively more competitive in the labour market. This fact of longer and more informed career horizons led to women spending more years in jobs and helped them to accumulate more job experience as well as increases in their salary.

Goldin also pointed out not only the delay in age of a woman's first marriage but also an increase in the divorce rate. Both of these factors led to a change in education and in work of women because both meant that more women regarded economic independence as valuable to them. This altered the identity of women and shifted them from a family-oriented world to a more career-oriented world. This change in attitude occurred for

⁸.Claudia Goldin used the data from Census of Population Intergrated Public Use Micro-data Samples (IPUMS) to get education information from 1940 to 2000.

women at all levels of education as well as in both low and high income families.

The new change in career horizon and identity reflected that young women were better prepared as job market candidates than in previous periods and that they decided to pursue a career rather than simply employment. These new phenomena were reflected by both women's earnings and types of occupations. Probable occupations shifted from traditional ones for women to more professional ones such as lawyer, physicians, and managers. The author grouped occupations in two categories, ones which are traditionally considered as women's work such as teachers, nurses, librarians, social workers, and the newer category of professional careers. She chose specific age-cohorts in each time from the 1940s to the 2000s, and she found there were substantial shifts in occupations of young women in this revolutionary phase.

The author also explores out-of-work spells among college graduate women by using a dataset from the Andrew W. Mellon Foundation. Regression results show that children are the most important factor related to the dependent variable which is total out-of-work spells for women, and a clear nonlinearity exists in the impact of successive numbers of children.

The author defines three evolutionary phases and one revolutionary phase; she identifies each phase by considering statistical observations such as labour force participation rates for females and males by age, marital status, and schooling. She also uses the data sets to look at the women's age at first marriage for birth cohorts, and the female-to-male ratio of college attendance and graduation rates as important indicators of women's new status in the labour market. Variables for women's earnings as a percentage of men's and for occupations of college graduate women also revealed the

changes in female labour characteristics in the labour market.

There is a recent paper which is also concerned about the process of transition in women labour force activity by Sacerdote and Feyrer (2008). They define three distinct phases in women's status generated by the gradual increase in women's workforce opportunities in the United States from the 1950s to the present time. In this paper, the first stage which is defined from the 1950s to the 1960s can be characterized by specialization in home-production and raising children by women. In this period, women earn lower wages relative to men and are expected to take all of the responsibilities related to child care at home. In an intermediate phase, women have improved but not equal labour market opportunities to those of men, but are still expected to do the majority of child care and household production. Working women in this phase have the strongest disincentives to having additional children; the more market opportunities are available, the higher opportunity cost of having children. In the final phase of developing transition by this paper, women's labour market opportunities begin to become similar those of men (paper chooses the word "equal" though). Female labour force participation is higher than in the intermediate phase, and this fact is contributed by the increased participation of men in the household work. Male participation in home production reduces the disincentives for women to have additional children, so fertility rates rise compared to the intermediate phase.

I would like to investigate the transformation in women's labour force participation rates for six countries by basically following a methodology by Goldin to identify the phases each country has passed through and currently is in. Economic researchers point

out that, if birth-age cohorts were different, the result would be a bit different⁹, and thus I would choose some specific age cohort to investigate the six countries' case in order to capture the effects of historical changes without biased result caused by cohort effects.

2.2. Female labour market activity in developing countries

Many studies have identified a U-shaped relationship in female labour market involvement. The U-shaped curve shows the relationship between women's labour market participation rate and economic development, where women leave the labour market at early stages of economic development and return when a white-collar sector develops.¹⁰ The U-shaped curve was originally observed in cross-sectional data from multiple countries as well. A large portion of the existing studies pertaining to female labour participation focus on changes in gender gaps for a single country. And there exist some past studies that examine and compare the cross-country variation in female labour force participation rates. Since the mid-1980s, a considerable amount of research on labour markets and discrimination (gender or otherwise) has been done by researchers; these works are based on a variety of perspectives including institutional and feminist view points. In developed economies, researchers have studied female labour force involvement by investigating unexplained gaps in labour market activity such as the gender gap in wages and occupational exclusions. Researchers also pointed out that developing countries have different appearances from developed countries in regard to the

⁹. The methodology of synthetic cohorts has been widely used. Goldin,1990; and Pencavel,1998.

¹⁰. Sinha, 1967; Durand, 1975; Goldin, 1995; Horton, 1999; and Mammen and Paxson, 2000.

stage of women's labour force status.¹¹

John Humphrey's *Gender and Work in the Third World* (1987) concerns the sexual division of labour in the modern sectors of Brazilian society. He provides a systematic empirical investigation of the Third World's leading industrial nations, focusing specifically on the issues of women's and men's employment in the Third World. Even though the situation in Brazil cannot explain or be generalized to all the situations in the Third World, it still sheds light on a number of relevant questions regarding gender employment characteristics in the Third World. He discusses the relationship between gender and work in his book and points out that a preference for unmarried women by employer at the first stage of employment would have strong implications for the stability of the female labour force. Also, women could be devalued compared to male workers in terms of their working capabilities through a double process of marginalization of women from prestigious jobs and the devaluation of the kind of work that women carry out. Even women accept the notion that men need to earn higher wages because of their family obligations; the acceptance of a lower status by women reveals that they doubt their capabilities in the workplace. The author gathers data from various companies, the Research Department of SENAI in Sao Paulo, and CEBRAP¹² in Sao Paulo.

A study by Jose Pagan and Susana Sanchez (2000) is designed to analyze the factors that help explain the considerable gender differences in work force participation in rural Mexico. They examine gender employment differences in Mexico's rural labour market using data from the 1994 Survey of Rural Entrepreneurs and Financial Services¹³. They follow a standard employment selection model by assuming that the individual's

¹¹. Heyzer, 1986; Altonji and Blank, 1999; Goldin 1995; Satchi and Temple, 2006.

¹². Centro Brasileiro de Análise e Planejamento

¹³. SREFS; Encuesta Regional de Servicios Financieros a Unidades de Produccion Rural.

employment choice is based on a comparison between the utility of working and that of non-working. They employ a two-step probit model and their regression results indicate that structural factors of supply and demand in the labour market are primarily responsible for gender differences in female labour participation. Furthermore, they find that the presence of young children in the household impacts on women's workforce participation decision.

A study by Contreras, Puentes and Bravo (2005) focuses on the female labour force participation rate in Chile over a forty-year time period by using a synthetic cohort methodology. They decompose the participation rate in terms of age, year and cohort effects. Their study uses data from the Employment and Unemployment Survey which has been conducted every year by the Universidad de Chile since 1957. Using information from 1957 to 1997, they provide evidence regarding the evolution of female labour force participation in Santiago, Chile. The results in this study show that the age effect is significant to the analysis of female labour force participation, a similar conclusion to the one drawn by Goldin in her work¹⁴.

Studies focusing on labour supply and employment in less developed countries find that the country where natural resources account for a large amount of share for their exports and not manufactured goods, the real wage elasticity of labour demand is low. Thus Latin American countries and Asian countries have different types in labour demand. Asian economies rely more on human capital rather than natural resource as Latin American countries do. However, studies need to be updated since researchers focus on the rapid rate of population increase in the developing countries, which is not the case

¹⁴. Goldin (1991,1995,2005).

anymore. When the society was bearing a soaring rate of population growth, its young generations enter the labour market at an early age, thus its labour market has some special characteristics which are different from developed countries. The paper by Antecol (2000) analyzes cross-country differences in the gender gaps in labour force participation rates across home-country groups in the United States by using ILO data. The author uses labour force participation rate data from the ILO Yearbook of Labour statistics for various years. Antecol finds evidence of variation in the unadjusted gender gap in labour force participation rates across home-country groups in the United States. The author emphasizes cultural factors to explain why some groups of women work more relative to men than others.

There is a recent paper by Fogli and Veldkamp (2008), which is concerned with the transition in women's labour force activity across many countries. They focus on why the participation rate of women with children has risen so much faster than the aggregate participation rate in the labour market. They argue that learning is an important factor for the decision to enter the labour market. After observing others who successfully manage home responsibilities while maintaining employment, more potential female labour participants having children tend to choose to enter the market. There are also some studies concerning working mother in the labour market; the studies explain this new appearance as caused very much from the invention of new home-product facilities and the decline of child care cost by government subsidy.¹⁵ However, they could not explain why the participation transition happened at different times in different places.

¹⁵. Attanasio, Low, and Sanchez-Marcos (2008) and Del Boca and Vuri (2007) for child care costs.

3. Description of Data and Possible Variables for Analysis

Studies have shown that the labour force participation rates (LFPRs) of women vary systematically, at any given age, with their marital status and level of education, and among different socioeconomic groups. After considering these facts, I assembled fifteen variables as identified as central which include fertility, labour force participation, education attainments and other socioeconomic variables (see Tables 1 and 2).

Data on fertility, education, LFPRs, and a set of other socioeconomic variables have been collected for six countries in this paper. Data on female LFPRs are collected from two different sources. For two countries, Philippines and Chile, I use data from the World Bank which provides total LFPRs by sex but not age. Since the other four countries are OECD members, I can use data for LFPRs from OECD.STAT to see a specific age group which is 25 to 34 in this paper, for females and males. Selecting the appropriate group of women for analysis is important. Women's labour force participation is interrupted by pregnancy and child care, so reductions in participation are expected among women of childbearing age (Becker, 1975). These issues are discussed in detail by Goldin (1996), who identifies the labour force participation rate of women after their childbearing years as the most appropriate measure of long-term change. Since it is difficult to find data from one data source for all variables for the six countries, especially for less developed or poor countries, data have been collected from various sources.

The total fertility rate, a hypothetical cohort measure, is the average number of children that would be born per woman, assuming no female mortality at child bearing ages. The

standard method of calculating the total fertility rate is the sum of the age-specific fertility rates. These rates are provided for six countries (see Table 1). The female share of graduates by field of study in tertiary education is defined as the number of female students graduating in a particular field of study expressed as a percentage of the total number of graduates in that field of study, and data are collected from the World Bank, and made available in EDSTAT. Data on women's earnings and men's earnings have been collected from the Human Development Report for various years¹⁶, and they are calculated on the basis of data on GDP per capita (PPP US\$) and population from World Bank 2006. Because of the lack of gender-disaggregated income data, female and male earned incomes are crudely estimated on the basis of data on the ratio of the female non-agricultural wage to the male non-agricultural wage. Also made use of are the female and male shares of the economically active population, the total female and male population, and GDP per capita (PPP US\$)¹⁷. And the ratio of estimated female to male earned income is calculated on the basis of data for earned income for women and men. Estimates are based on data for the most recent year available during 1991–2005.

4. Labour force participation trends

The female LFPRs have increased strongly in most OECD countries over the past few decades. The timing of this increase has varied across countries, with some

¹⁶. Human development reports are published for the United Nations Development Programme, and they are published by Oxford University Press.

¹⁷. Human Development Report. (1997-2004).

countries starting earlier, for example, England, France and the United States. In the last two decades, the largest increases have been observed in lower income countries or less developed countries. If one focuses on a specific age group of women (25-34 years old) and for six countries, one can see that the female participation rate ranges from values close to or below 60 per cent in South Korea, Mexico, and the Philippines, to values well above 80 per cent in Finland and New Zealand; and for Chile, it is only around 40 per cent. In this section, I will examine and interpret findings for each of these countries.

4.1. Finland and New Zealand

Finland

In the first half of the 1990s, Finland suffered a huge economic recession. During the economic recession, LFPRs of both females and males, age from 25 to 34 were decreasing. However, the female labour force participation rate decreased much more than the one for males from 1990 to 1995. The female LFPR in Finland grew from the early 1970s to the 1990s before Finland faced an economic recession. For women, age from 25 to 34, without regarding marriage status, LFPRs increased from 63 percent to 84 percent from 1963 to 1989 (see Figure 2a).

Economic recession and post-recession in Finland in the 1990s brought distinguishable changes in the economic activities by women in their society. When the female labour force participation rate was at a peak in 1986 or 1987, it was above 85%,

where the fertility rate is lowest as 1.6. Even during the recession period, the fertility rate tends to increase little from 1.6 to 1.8 (see Figure 3a). This can be interpreted as young females leaving the labour market, and choosing to raise children during that time. During the recession, they could not find guaranteed stable work or enough salary can cover their opportunity cost of staying at home as a mother and housewife. The middle and second half of the 1990s could be explained as the post-recession recovery period. During this period, there is an increasing of temporary work in the young age women group, and a decrease in the compatibility between work and family.

And this rate has not decreased even after recovering from the economic recession. Compared to other countries which are included in this paper, Finland has not had a huge change in fertility rates for the past few decades; it has been relatively low even during the heavy economic recession in the 1990s. This could be explained by Finland's characteristic as one of the Nordic countries which have good public support for families and children as well as other types of social welfare systems¹⁸. Government support can contribute to the gender equality at work and it can help to sustain a total fertility rate above 1.75 (UNSTATS, 2003).¹⁹ Government policies and social systems in Finland are supporting dual-earners by a high level of maternity and parental-leave allowances and their long period of payment and a high level of day care services.

New Zealand

While the female labour force participation rate in Finland suffered from the

¹⁸.Chile, Mexico, and South Korea do not have this kinds of public supports (OECD).

¹⁹. Hoem (1993), and Brewster and Rindfuss (2000).

economic recession from the late 1980s or early 1990s, the female labour force participation rate in New Zealand is observed as providing a constant increase from 61% to 73% from 1986 to 2007. New Zealand had a recession; it was in 1997-1998, following the Asian financial crisis. During the recession female LFPRs decrease from 68% to 66%, not a very big decrease (see Figure 2b). Total fertility rate decreases as well, but also it is not a distinguishable change (see Figure 3a).

The LFPRs of females with different levels of formal schooling also diverged from one to another over ten years. The overall rise in female LFPRs was mainly driven by increases in the participation of females with post-secondary qualifications; at the same time, the participation of females with no post-secondary qualifications actually declined. Among women with post-secondary qualifications, the participation increases were concentrated among women aged 25 to 34 years.

While New Zealand's overall female participation is comparatively high by international standards among OECD member countries, it still has a lower female LFPR than that in Finland. The fertility rate in New Zealand is above the level of Finland for the whole period where data is available. It showed a big decrease from 1964 to 1978 corresponding to the acceptance of modern contraception. Even the singulate mean age of marriage is an average two years younger than the one of Finland women. This data implies that in New Zealand women get married younger and fertility rate is higher than in Finland. By an OECD economic survey (2005)²⁰, New Zealand has one of the lowest rates of employment among mothers with children under the age of 6 years in the OECD countries. And its female employment rates rise sharply once children enter school.

²⁰. www.oecd.org/eco/surveys/nz

To some extent, this may reflect a lifestyle preference among New Zealand families and a belief that mothers want to and/or should stay at home to care for their children in the early years, although there is little hard evidence about what mothers' preferences are on this matter.

4.2. The Philippines and South Korea

The Philippines

Philippine culture has favored participation by women in the labour market which is from their historical or social backgrounds. Philippine culture has emphasized the independent economic roles of women, and there have been plenty of economic opportunities for women in their economy.

From the pre-Spanish colonization period, women not only worked in the fields and raised livestock, but also handled most of the trade. This tradition of women traders continues in the present, and women are frequently working in retail sales in market stalls and small shops.

Also, the Philippines have a unique educational system which is good for girls; among developing countries, it has a distinct education system which is modeled on that of the United States. This system results in a generally open education system to female and it brings a higher average education level to women. Public education for both sexes was introduced during the American colonization period. Educational attainment for both

sexes has been approximately equal since 1970s (see Figure 5). On the whole, women are likely to have human capital characteristics necessary for entry into the labour market, and they can be compatible with men in the labour market. From the statistical data, it is noticeable that the share of girls enrolled in tertiary level of education is a relatively high percentage rate, and it is possible to suppose that girls in the Philippines have relatively high levels of education attainment.

Although the fertility transition was well underway by the mid-1970s, the pace of fertility decline waned with political turmoil, a slowing economy, and the lack of enthusiasm for family planning at the national level (similar to South Korean in 1970s or China which still has the family plan at the national level). The majority of the Philippine population is Roman Catholic, although there are small Protestant and Muslim minorities as well. High birth rates have been sustained by traditional women's roles and pronatalist views associated with religious traditions, poverty, and limited economic opportunity by their traditional thoughts. As a result, the Philippines still have a higher level of total fertility rate than other countries in Asia (see Figure 3b). Another distinct characteristic from the data regarding the Philippines is that the hourly wage is pretty low for both sexes in this country²¹. From this fact, we could guess that most couples or families feel pressures about relying on only one person's earnings. As a result, households need a second earner or two earners to support a number of children. However, the estimated earned income ratio between male and female workers in the Philippines is still lower than in Finland and New Zealand, even as it is higher than in the other three countries in this paper.

²¹. Human development report (2006).

South Korea

From the late 1960s, the South Korean economy has experienced remarkable economic growth and it has had major changes in industrial structure. By considering this economical development, it should have developed economic and social circumstances (or conditions) for female labour force involvement.

Along with an export-oriented growth strategy, South Korea created the rapid incorporation of female labour in dominant export industries such as textiles, clothes, and footwear which need handcraft working. These kinds of industries were assessed to provide over half of all export earnings in the early 1970s, the beginning of its development plans by the central government. Since the beginning of the industrialization process during the early 1970s, women have been rapidly incorporated into the labour force, and female workers have played a significant role in South Korean export-led economic growth as they provided relatively cheap labour. Like in other developing countries, industries (employers) in South Korea preferred young unmarried female workers for labour-intensive export industries.

Compared to other Asian countries such as Japan, Singapore, and Taiwan, however, or considering its high level of GDP per capita, South Korean women's LFPR is relatively low, especially in the age group of 25-34 for now. Although South Korea has achieved remarkable economic development within a relatively short span of time, gender disparity seems to be problematic.

This could be explained by the tendency of South Korean women or social pressures on South Korean women related to economic participation decision in their life-cycle.

Their decision on working is heavily affected by their life-cycle stages and marriage, child bearing, and child raising, and these are working as important factors to reduce women's participation in the labour market. Some studies concerning the status of women in South Korea argue that South Korean families, on the basis of the Confucianism, create different social relations and ideologies, including gender relations and family ideologies.²² That is, the traditional family ideology in South Korea reacts to the exigencies of the nation's intense industrialization in different ways from western family ideology. South Korea's exclusive family ideology provides a survival strategy that enables the families to protect its members from the relatively weak national policies and social programs (Some researchers point out that the South Korean government's public supports are pretty weak, and for this reason sometimes when they study OECD countries, they exclude South Korea as well as Mexico.).

The South Korean political situation does not have a preference to women to be representatives at the elite level (see Figure 8). Political elites include legislators, governmental officials, political party officials and other opinion leaders from diverse public and private sectors who influence the policy-making system. Among the six countries in this paper, South Korea has a lowest female share in parliamentary seats. Until 2004, it was lower than 6 percent; from 2005, it has becoming greater than 10 percent. This statistic implies that South Korean women failed to achieve a breaking-through into the male domain of political power.

²². Chang(1997), Cho(1996).

4.3. Chile and Mexico

Chile

Chile also has an export-led economy like South Korea, which has experienced growth for over 15 years, except for a recession in 1999. In the 1990s, Chile grew at an unprecedented average 6.8 percent per year until 1999, when it was affected by the East Asian crisis.

Most of core industries in Chile are different from the case of South Korea which relied on female labour a lot. The most important export product for Chile is copper, and other important export products are salmon, forest products, fresh fruit, fishing, fishmeal, wines, and other minerals. Thus Chile did not require cheap female labour for their export industries. Chile has seen a steady and remarkable increase in female labour force participation over the past twenty years, from 29 percent in 1986 to 39 percent in 2007 (see Figure 1). Nonetheless, even at its current level, Chile has one of the lowest rates of women's participation in the labour market as compared to other OECD countries (which are generally higher than 55 percent).

Mexico

Mexico achieved considerable economic growth from the 1950s to the early 1980s when most of countries in the world experienced economic recessions. Mexico is one of the major participants in world trade, and with the negotiation of the North American Free

Trade Agreement, there has been increased interest in the Mexican economy. Mexico became a member of OECD in 1994, but per capita income in Mexico is much lower than among other OECD members.

During the 2000s, Mexico experienced changes that include multiple transitions in the economic, social, political, and demographic areas. The rate of fertility decline did not begin in Mexico until the mid-sixties (see Figure 3b). The fertility rate stayed high and even rose before the decline was occurred. It is one of the results from gradual the spread of family planning by the central government. The period 1970-1976 saw a big drop in fertility; the fertility rate was an average of over six children per woman in 1970; then fell to three children in 1976; afterwards it decreased to less than three children in 1990 until reaching around 2.4 children by 2002 (see Figure 3b).

5. Assessments of the Evolution of Female Labour Forces

It seems unlikely that any of the countries in this paper are in Phase I of Goldin's typology anymore, when we consider their female LFPR and other relevant socioeconomic factors. Any of six countries have the characteristics of Phase I, which are characterized by little or no learning on the job, or poorly educated working females. However, it is still difficult to tell if they are in Phase II or III given the limited data available.

In the case of the two developed countries in our example, Finland has already

established itself in the last phase, referred to by Goldin as the quiet revolution phase, whereas indicators suggest New Zealand is positioned at the beginning of this final stage. From the late 1980s to today, both indicators of female labour force participation in Finland (total female labour force participation and labour force participation rate for females age 25 to 34) have been stable and relatively high compared to the other countries in this analysis (see Figures 1 and 2). Girls' enrolment in tertiary education also does not show any big changes from the 1980s to today and this is also the case for the fertility rates (see Figures 5 and 3a). Finland has the highest ratio of estimated female to male earned income among the six countries (see Figure 7) ; this is an indication of Finland's position in having moved through the evolution phases of female labour force development. This ratio has been above 70% since 2000 in Finland. Enrolment of girls in tertiary education reached a relatively high level in the 1970s, peaked in the 1980s and has maintained that level up to the present time. Female labor force participation rates are no longer soaring; however, they have reached and maintained high levels in Finland. The LFPR for women ages 25 to 34, education levels, and singulate mean age of marriage all seem to indicate that Finland is perched at the outset of the revolutionary phase; that is to say, that it is certainly at the end of Phase III, if not already in Phase IV. According to Goldin's identification strategy, in order to conclude this with a higher degree of certainty, we would require time series data regarding occupation changes and the average number of years women have spent at their work.

New Zealand remains in Phase III given the available data, and it is ready to begin the last phase in female labour force evolution. Its LFPR for females is still increasing and

it has not shown sudden growth from the late 1980s to today. The fertility rates also reached a steady level after the late 1980s. Chosen majors of tertiary educated girls have tended toward the social sciences, business and law, and away from education, in recent years. Girls' enrolment share in tertiary education is still growing since the 1970s, but the rate of growth is decreasing. Based on the level of fertility rates and female LFPRs, indications are that New Zealand is currently in Phase III and has been since the mid1990s.

South Korea has shown remarkable economic development in certain areas for the last few decades. From the late 1960s to the early 1980s, female labour force trends in this country imply a prolonged positioning in Phase I of female labour force development despite this high level of overall economic development. Rapidly, the country changed to Phase II after the democratic protest movement against the military government in the 1980s. Further, the evolution from Phase II to Phase III was also very prompt. South Korea, however, was not ready to have a lot of highly educated female workers. The society, to this day, is still conservative in its attitudes toward female labour. Furthermore, the fertility rate is still declining, and the LFPR of females is increasing. The ratio of estimated female-to-male earned income is lower than 50% though the female education level has risen so that young women are better prepared than before to enter the labour market. The ratio of estimated female-to-male earned income is low relative to its female education level and LFPR. When we look at the percentage of women with a seat in parliament (see Figure 8), we get an indication regarding female status in society; as such, it would seem that South Korea has not been very successful in encouraging women to take part in politics. This fact is not limited to the political

perspective; the low percentage of women with a seat in the national parliament suggests that there is an equity issue in society. Based on the data, women are not equally treated with the same opportunities as men, and this is clearly evident in the labour market outcomes of men and women. Thus, while this country has achieved considerable economic development, its female labour force development still remains in Phase II. South Korea still has some significant societal attitudes to overcome before entering Phase III.

The Philippines have a unique historical and political background for female education and female labour force participation. Even though the Philippines does not have as high a level of per capita GDP as other developing countries in this project, it has established solid foundations for having an upward female labour force trend. The Philippines entered Phase III before South Korea by regarding their female tertiary educational level and social acceptance of women in the labour market, though South Korea achieved a higher level of economic development. The ratio of estimated female-to-male earned income is close to 60%. The total female labour force participation rate is lower than 40%, but this percentage is for all age groups meaning that it understates the actual percentage of working age females who are active in the labour market. The percentage enrolment of girls in tertiary education is high; it is similar to the case of Finland (even higher than Finland in recent years), and girls' majors from tertiary educations are mostly in education, social science, business, and law (see Figures 5 and 6f). The gender situation in the Philippines is characterized by women's advancement in politics and academics and by their professional excellence. However, women are still required to do housework on top of their outside work, especially in rural areas and for

less educated women. Given these sets of indicators, it is evident that women in the Philippines have made significant strides relative to other Southeast Asian countries. Nevertheless, it is still controversial (and debatable) to say that their female labour force is ready to move into Phase IV, because females are still regarded as second earners in the household, and we can find evidence for it from the ratio of female to male earned income.

It is very tricky to trace Chile and Mexico through the phases suggested by Goldin because of the limited data available regarding the two countries' female labour forces. But recent data sets provide clues that give insight into their current phases. Both Latin American countries have export-leading economies; however, female labour participation does not have as high rates as South Korea which also has had an export-leading economy for the beginning of its economic development. Because of their industrial structure, female LFPRs of Mexico and Chile are not sufficiently high to regard them as being in the Phase III in the evolution phases. Their total labour force participation rate is 29% in 1980 and 35% in 2006 for Chile and Mexico shows a similar pattern (see Figure 1). When we compare these rates with those of the other four countries in this paper, they both have lower levels than any of the other countries. The ratio of estimated female to male earned income is less than 40% for both countries for recent time periods. This reflects that the level of female earned income is not the similar level of that of men in both countries. Though there are more females in the labour force in both countries, the work of females is still limited; opportunities for employment tend to be limited to areas such as hand craft (e.g., sewing) or small market selling (e.g., craft or spice stands), which is widely regarded as appropriate female employment in many

cultures of this region.

However, girls' enrolment share in tertiary education shows sufficiently high rates to have developed evolutionary phases. Mexico, for example, showed 20% in the 1970s and 50% after 2005, and Chile showed higher percentage enrolment share by girls in tertiary education than Mexico before 1992. From 1993 on, the share is lower than that of Mexico, but it still has a high percentage rate relative to South Korea (see Figure 5).

The two countries have similar patterns for total fertility rates. In Mexico, the rate shows over 6 children per household in the 1970s, less than 4 children in 1976 and drops to 2.3 children in 2002. In Chile, the total fertility rate shows 4.81 children per household in 1960 and it decreases to 2.5 children in 1976; and in 2002, it shows 1.9 children per household.

Both countries are trying to enter Phase III in Goldin's scheme, but I am not sure they are there yet. The best I could tell here is they are close to it.

6. Summary

This essay assesses and compares the recent evolution of the female labour forces of six countries. The countries range in level of development from emerging economies to fully developed ones. This has been done to lend insight into differences in the experience of women in the labour markets of countries at similar stages of development as well as experiences of women in countries with significantly different levels of

economic maturity. Countries have also been chosen so as to illuminate differences in the female worker's experience in different geographic areas. Finally, each of the countries has distinct historical, political and cultural backgrounds that should, in theory, lead to different experiences for female labour market participants throughout the respective evolutions of the countries' labour markets.

Building on Goldin's 2005 work which researches the chronology of women's labour development in the United States from the 1920s to present day, this essay conducts a similar analysis on the labour markets of New Zealand, Finland, the Philippines, South Korea, Mexico and Chile. The analysis is undertaken, based on Goldin's methodology, attempting to provide the current evolutionary or revolutionary phase which each country's female labour force finds itself in, based upon available data evidence. In some cases, analysis is limited by the lack of available quality datasets. The phases, in Goldin's work, consist of three evolutionary phases and a *quiet* revolutionary phase. Variables such as female labour force participation rates, graduation rates and education levels, incidences of female participation in different areas of education, average age of women's first marriage, divorce rates, wage differentials, and female occupations are considered and used to help determine what phase of development each country's female labour force has recently completed, has entered or remains in.

The first two countries that are considered are the developed countries, Finland and New Zealand. Finland's stable and relatively high female labour force participation rate, high female enrolment in tertiary education, and small gap between male and female earned income all indicate that it is perched at the outset of the quiet revolutionary phase of female labour market evolution, if not in this final stage already. New Zealand, based

on analysis of similar variables would seem to be in a similar position. Based on the level of fertility rates and female LFPRs, indications are that New Zealand is currently in Phase III and has been since the mid 1990s.

South Korea is an interesting case. Its impressive economic development allowed for considerable expansion of opportunities for female workers, but social attitudes and political ideas have also served to limit its female labour market progress. Available data suggests that, while in certain ways South Korea's female labour force shows characteristics associated with Phase III, social hindrances have kept the female labour market in the second phase of evolution. The second Asian country considered, the Philippines, is characterized by a progressive view of female labour market participation relative to its level of economic development. Nevertheless, low female wages relative to male counterparts and women's position as second earners in the household make it difficult to place the country's female labour force in the final stage of evolution. It is likely that this country's female labour force lies somewhat in a position which is best described as both Phase III and Phase IV.

Very limited data on both Chile and Mexico made the analysis of these countries very difficult. As such, conclusions reached regarding the stages of evolution that these two countries' female labour forces have reached must be taken with a healthy scepticism. The limited indicators that are available suggest that both countries are struggling to enter the third phase.

A key finding of this paper, that should be considered in future research work related to labour market development, is that the cultural and societal background of a country tends to have a significant impact in shaping the national workforce. To date, research has, at

least, underestimated this impact and often times ignored it completely when they conduct cross-country studies. Future research conducting a similar analysis on these countries would be useful as more reliable data becomes available. Furthermore, this analysis is easily extended to other countries and doing so would provide insight into areas of commonality as well as differences that may be explained by non-quantified characteristics of these countries such as cultural standards and societal norms.

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Appendix I

Variables	Country						Source
	Finland	Chile	Korea	New Zealand	Mexico	Philippines	
Female/male labour force participation rate	1963-2007	1990-2003	1980-2007	1985-2007	1991-2007	1996-2001	http://stats.oecd.org
Girls enrollment share in tertiary schooling	1970-2007						World Bank (EDSTATS)
Female median age at first marriage	1981-2003	x	1990-2005	x	x	x	each country
Marriage, singulate mean age of women and men	1930-1996	1945-1992	1945-1995	1951-1991	1970-1980	1945-1990	http://unstats.un.org (Wistat)
Fertility rate by specific age-group	1952-2003	1952-2003	1960-2001	1964-2003	1960-2002	1952-2002	http://unstats.un.org
Majors in tertiary school (female)	1999-2007						World Bank (EDSTATS)
Women's earning share men's earnings	1999-2005	1999-2004	1999-2007	1999-2005	1999-2006	1999-2004	Human Development Report (UNDP)
LFS by educational attainment by sex and age	1999-2003	x	1991-2003	1997-2003	1995-2003	x	http://stats.oecd.org
LFS by level of education	1995-2005	1990-1994	1995-2005	1995-2005	1995-2005	2004/2005	World Bank
Employment by activities female	1990-2006	x	1992-2006	1991-2006	1991-2006	x	http://stats.oecd.org
Girls to boys ratio, tertiary level enrolment	1999-2004						http://data.un.org
Women's share in parliament	1997-2007						http://data.un.org
Female enrolment and graduation in tertiary	1980-2006						World Bank (EDSTATS)
Education enrollment and field of study	1970, 1980, 1996				1970, 1980, 2001		http://unstats.un.org

Table 2: Variables and Definitions	
Variables	Definition
Female/male labour force participation rate	The ratio of the labour force to the working age population, percentages (ages 25 to 34).
Girls enrollment share in tertiary schooling	Girls' enrollment share, tertiary is the number of girls enrolled in tertiary education, expressed as a percentage of the total number of students in tertiary education.
Marriage, singulate mean age of women and men (Wistat)	The estimates the mean age at marriage from proportions single age.
Fertility rate by specific age-group(Fertility rate, total (national data))	The number of children that would be born per woman.
Female share of graduates by field of study (% , tertiary)	The number of female students graduating in a particular field of study , percentage.
Women's earning share men's earnings	The ratio of earned income by female and male.
Estimated earned income, female(PPP US\$)	Compensation from participation in a business, including wages, salary, tips, commissions and bonuses.
Estimated earned income, male(PPP US\$)	Compensation from participation in a business, including wages, salary, tips, commissions and bonuses.
LFS by educational attainment by sex and age	The labour force participation by education attainments by sex, percentages.
LFS by level of education	The labour force participation by education level.
Employment by activities female	Civilian employment and the number of employees, by economic activities (1);by professional status (2).
Girls to boys ratio, tertiary level enrolment	The ratio of students enrolled in tertiary school.
Women in parliamentary seats, percent	Seats held by women in national parliament, percentage.
Female enrolment and graduation in tertiary	A distribution of enrollments and graduates by field of study and female share in each field.
Education enrollment and field of study	Education enrolment at third level by sex and field of study.

Appendix II

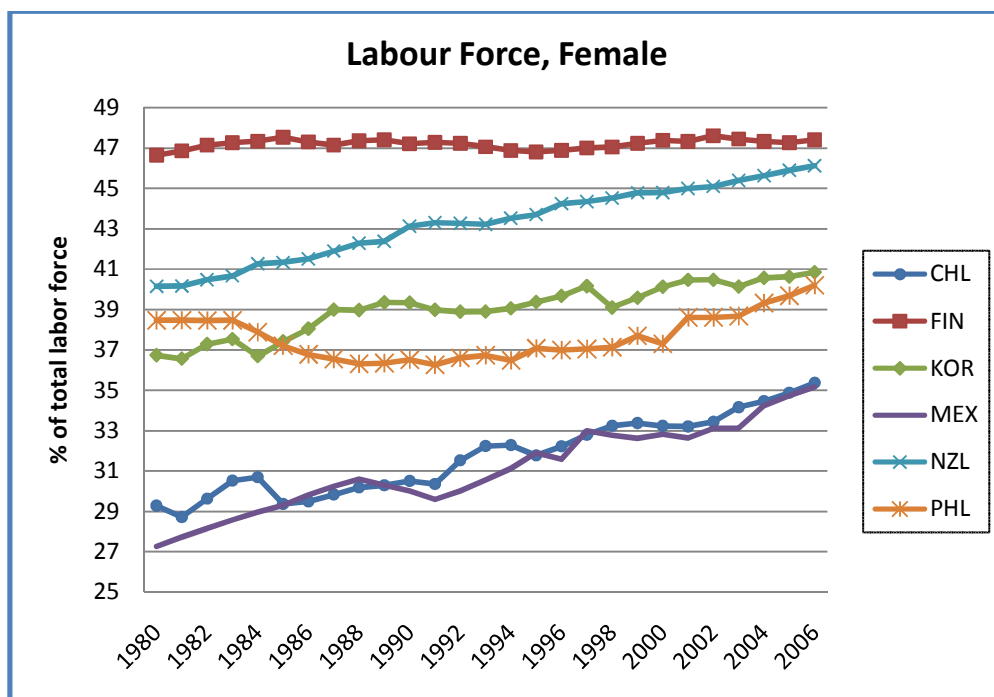


Figure 1: Total Female Labour Force, in six countries.

Source: World bank, 2007

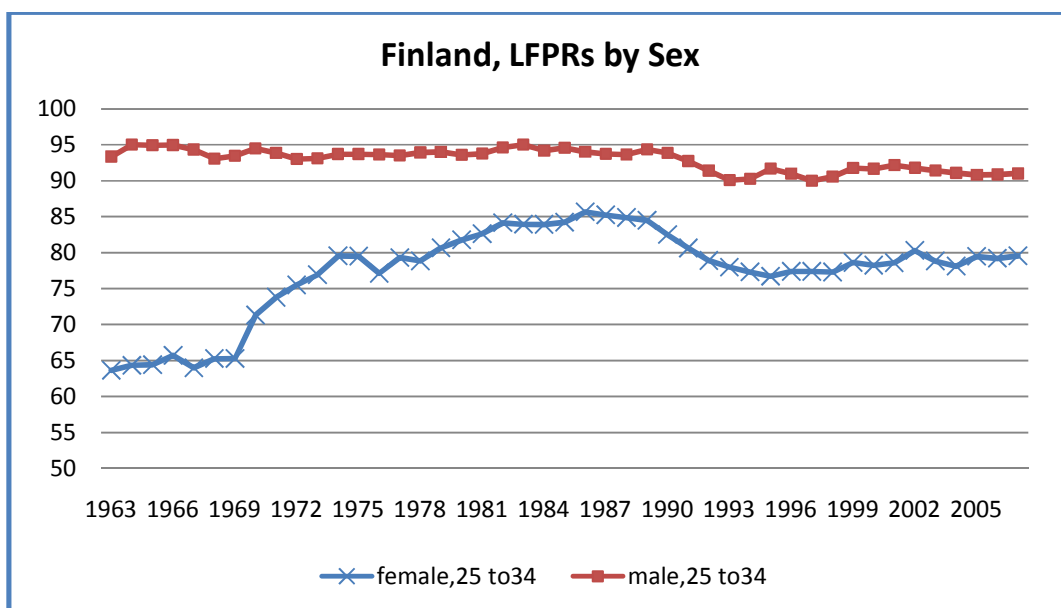


Figure 2a: Labour Force Participation Rates for Females and Males by Age 25 to 34 in Finland: 1963 to 2007

Source: OECD.stat

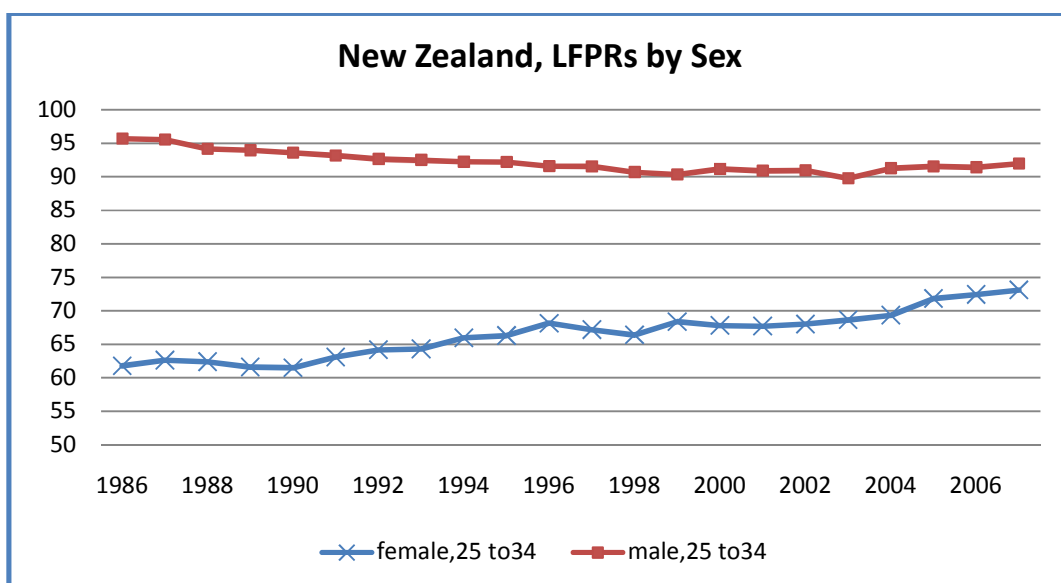


Figure 2b: Labour Force Participation Rates for Females and Males by Age 25 to 34 in New Zealand: 1986 to 2007

Source: OECD.stat

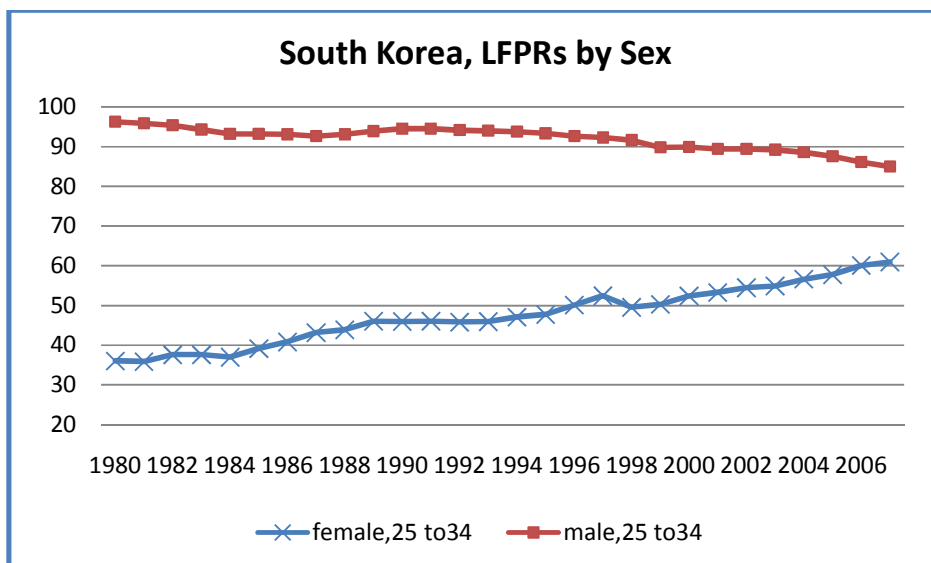


Figure 2c: Labour Force Participation Rates for Females and Males by Age 25 to 34 in South Korea: 1980 to 2007

Source: OECD.stat

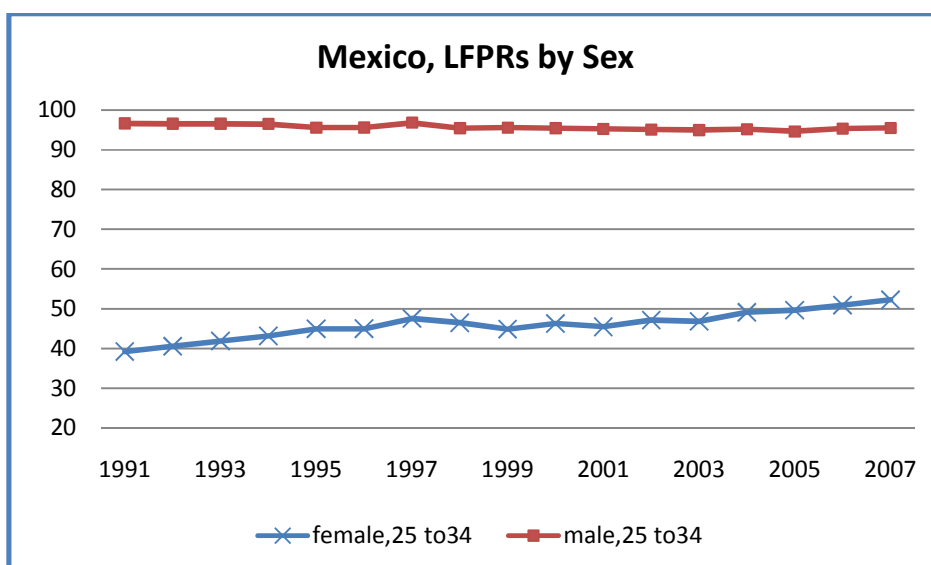


Figure 2d: Labour Force Participation Rates for Females and Males by Age 25 to 34 in Mexico: 1991 to 2007

Source: OECD.stat

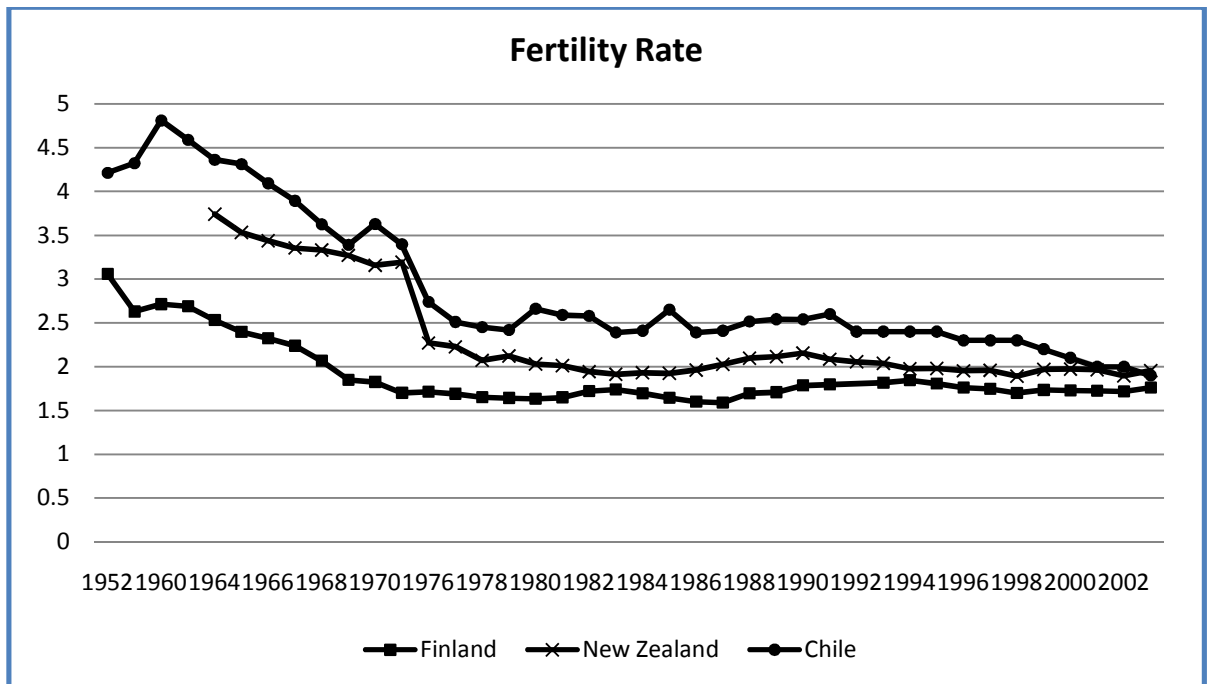


Figure 3a : Total Fertility Rate: six countries for various years

The total fertility rate in a particular year is the average number of births a woman would have during her reproductive life if she were exposed to the fertility rates characteristic of various childbearing age groups in that year.

Source: UNSTATS

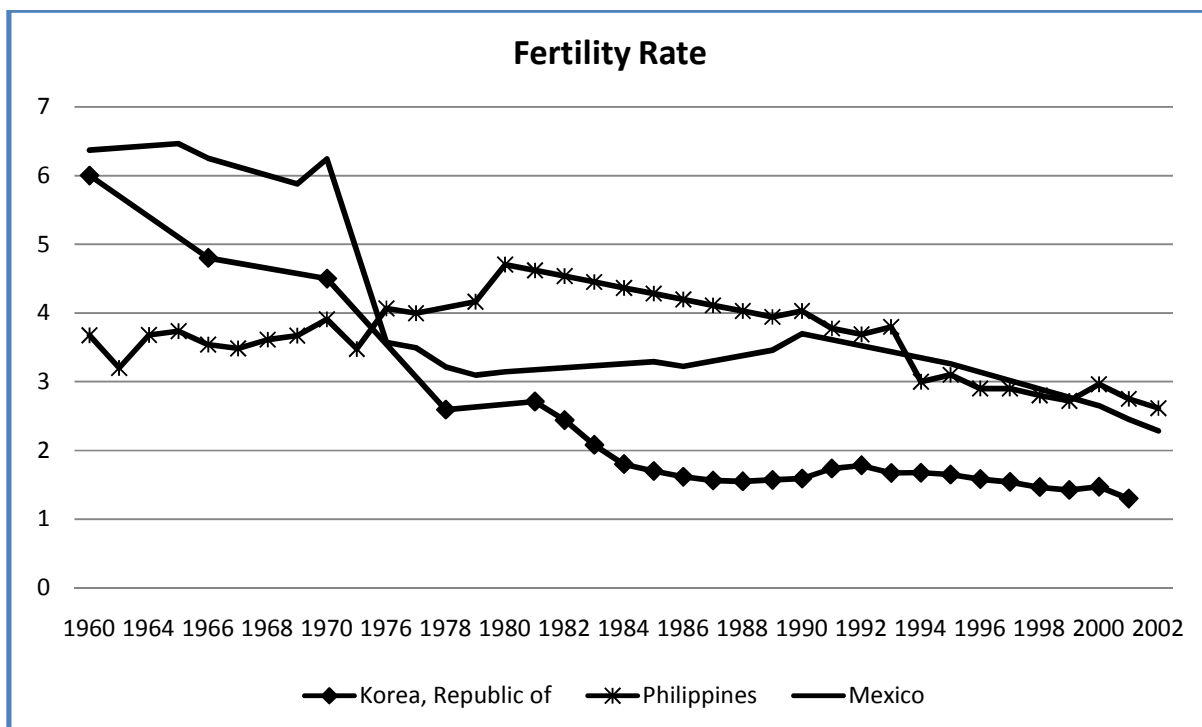


Figure 3b : Total Fertility Rate: six countries for various years

Source: UNSTATS

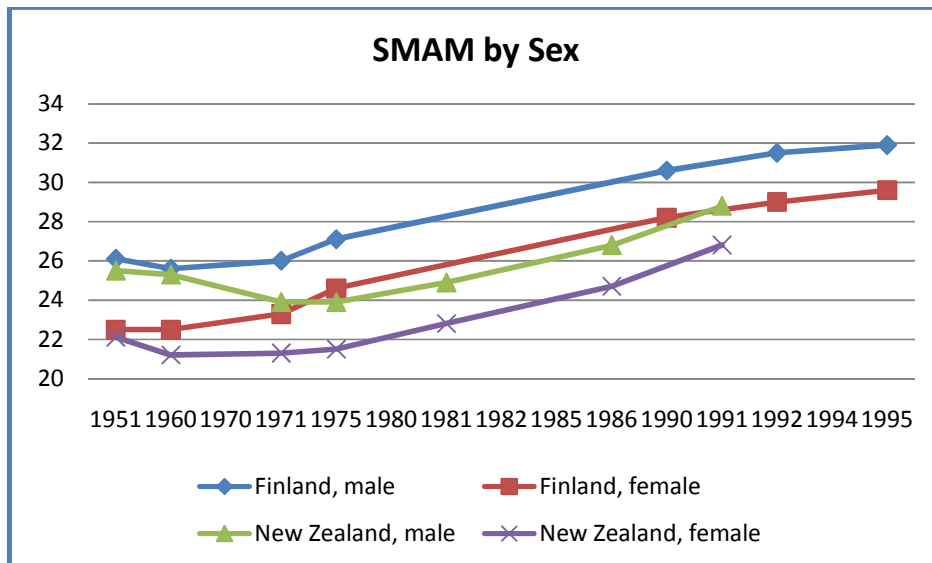


Figure 4: Singulate Mean Age of Marriage by Sex in Finland and New Zealand
 Source: UNSTAT from 1951 to 1996 for Finland, from 1951 to 1991 for New Zealand

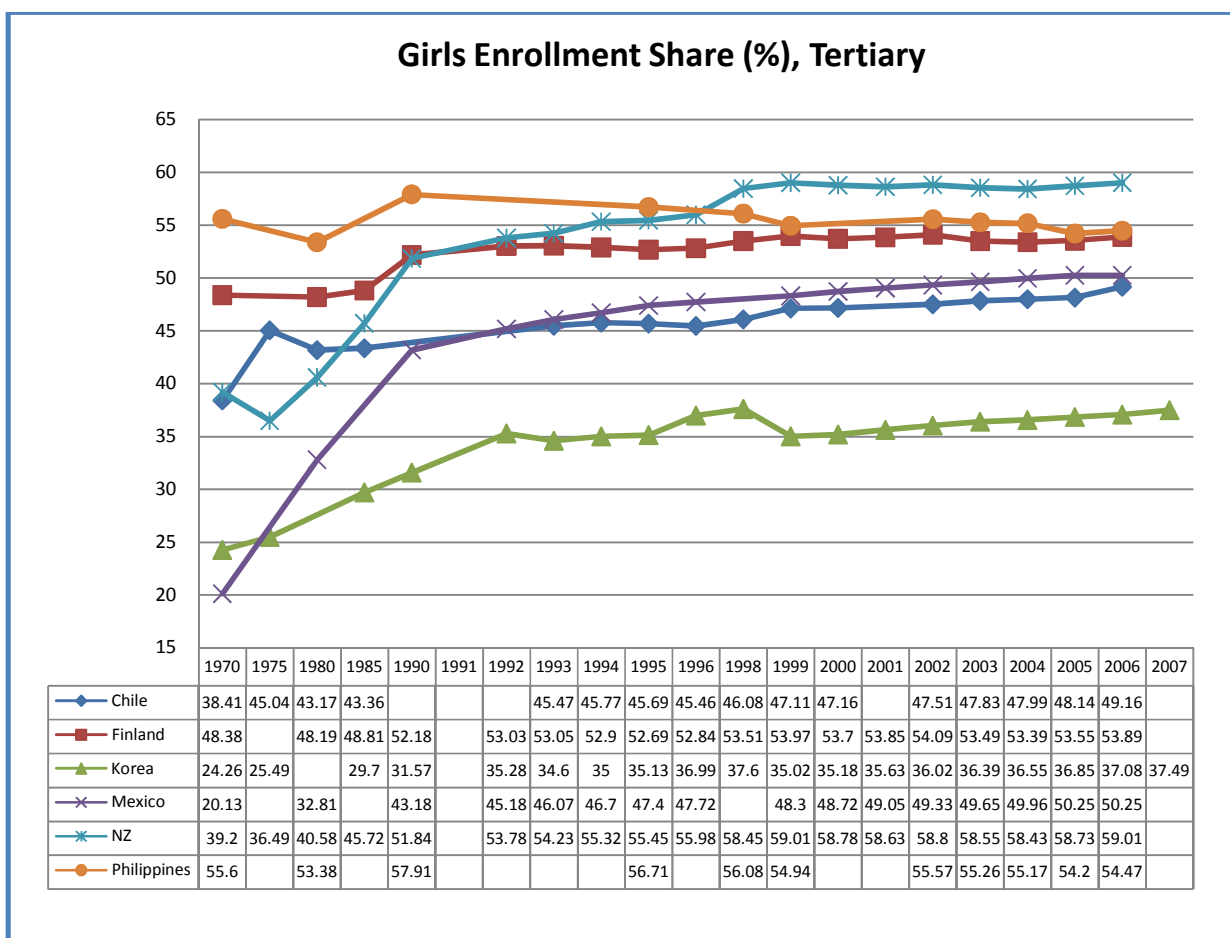


Figure 5: Girls Enrolment Share in Tertiary Education

Source: World Bank (EDSTAT), 2007

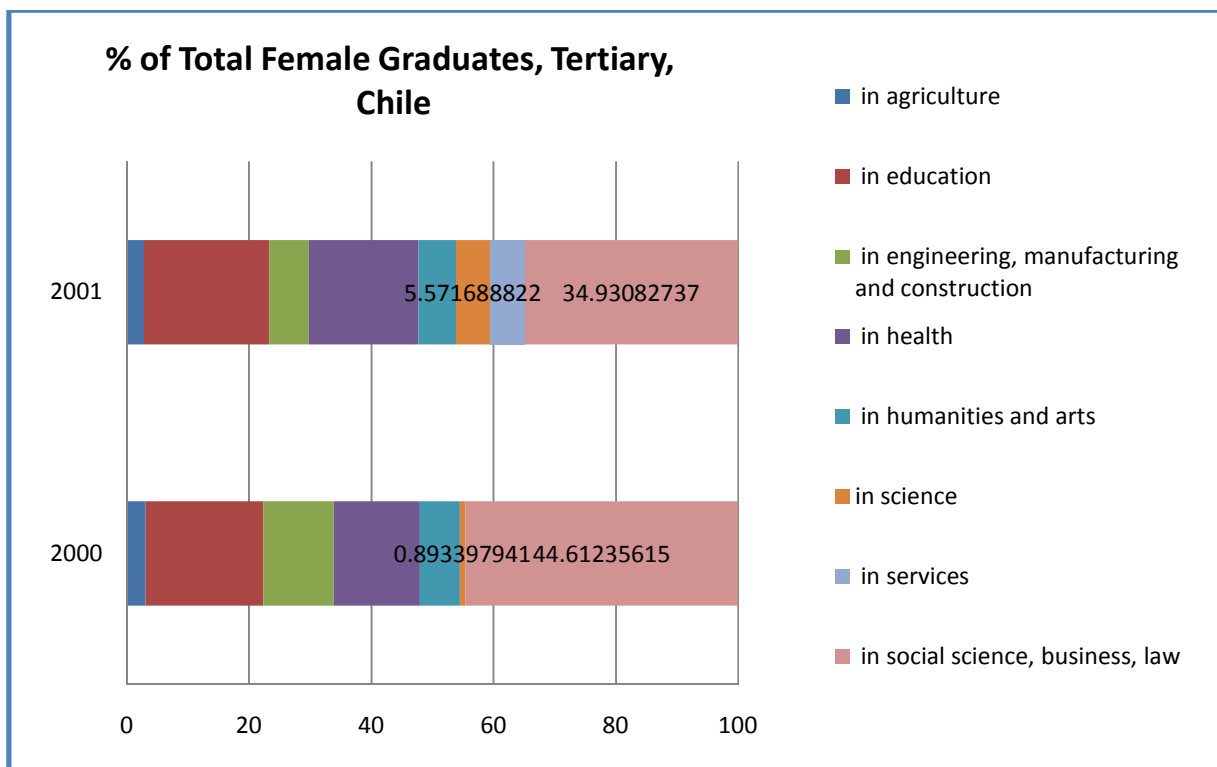


Figure 6a: Female Share of Graduates in Major (% , tertiary) in Chile.
Source: World Bank, 2007

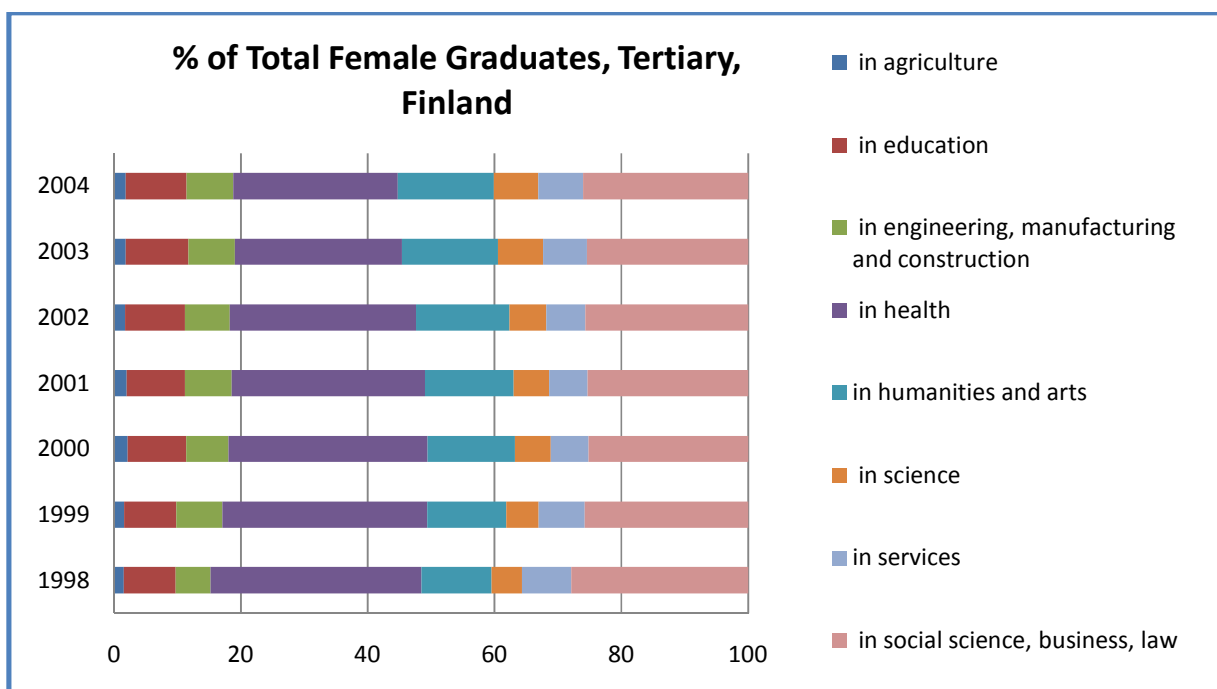


Figure 6b: Female Share of Graduates in Major (% , tertiary) in Finland.
Source: World Bank, 2007

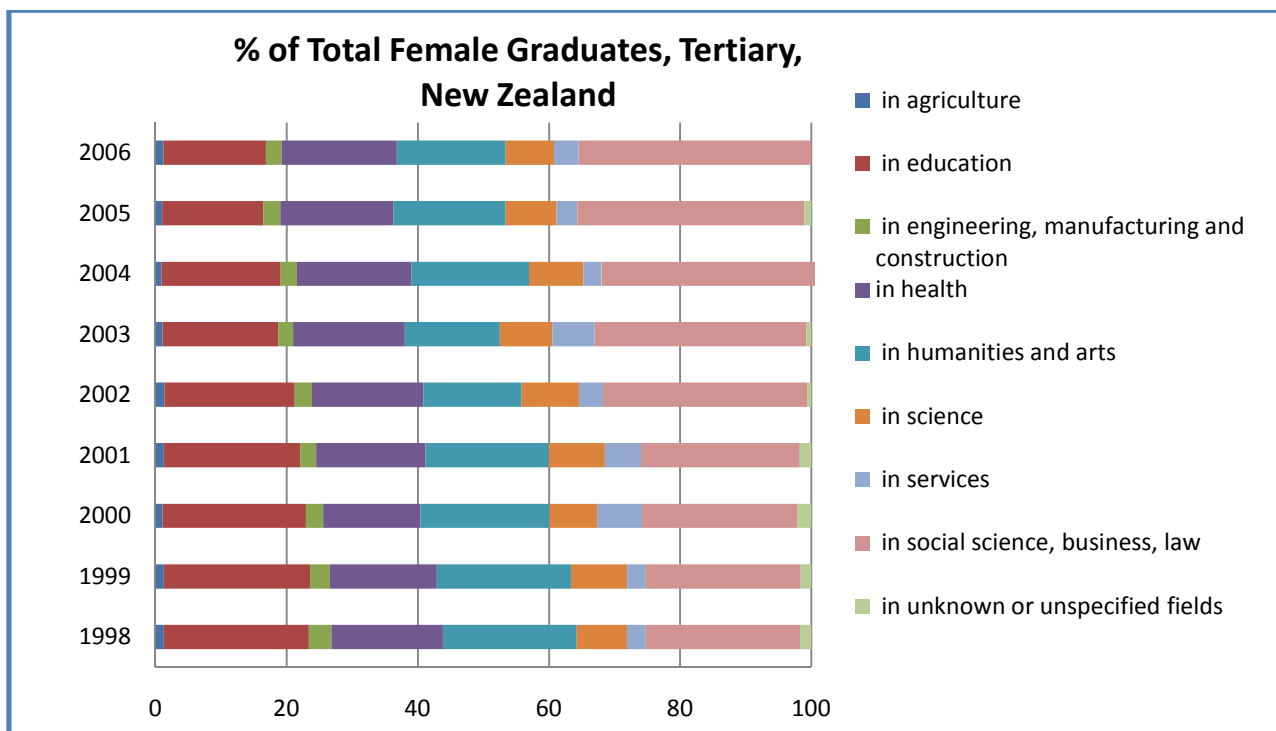


Figure 6c: Female Share of Graduates in Major (% tertiary) in New Zealand.
Source: World Bank, 2007

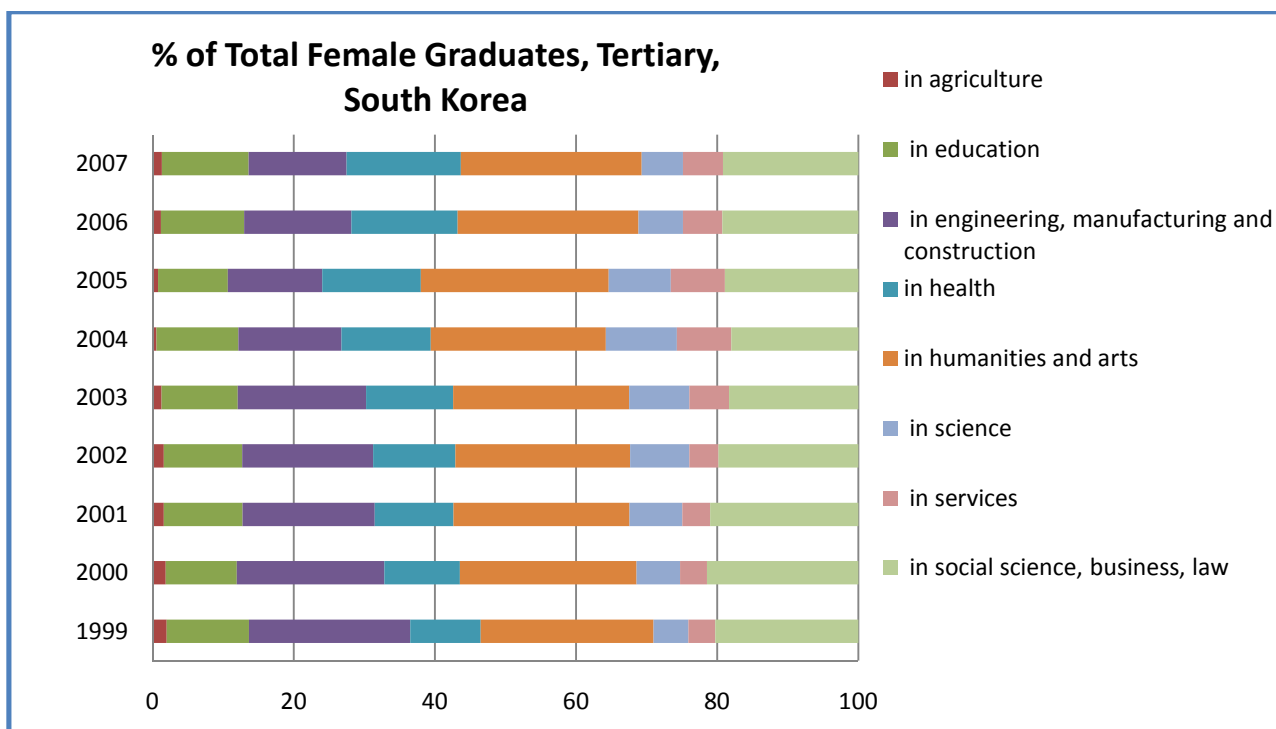


Figure 6d: Female Share of Graduates in Major (% tertiary) in South Korea.
Source: World Bank, 2007

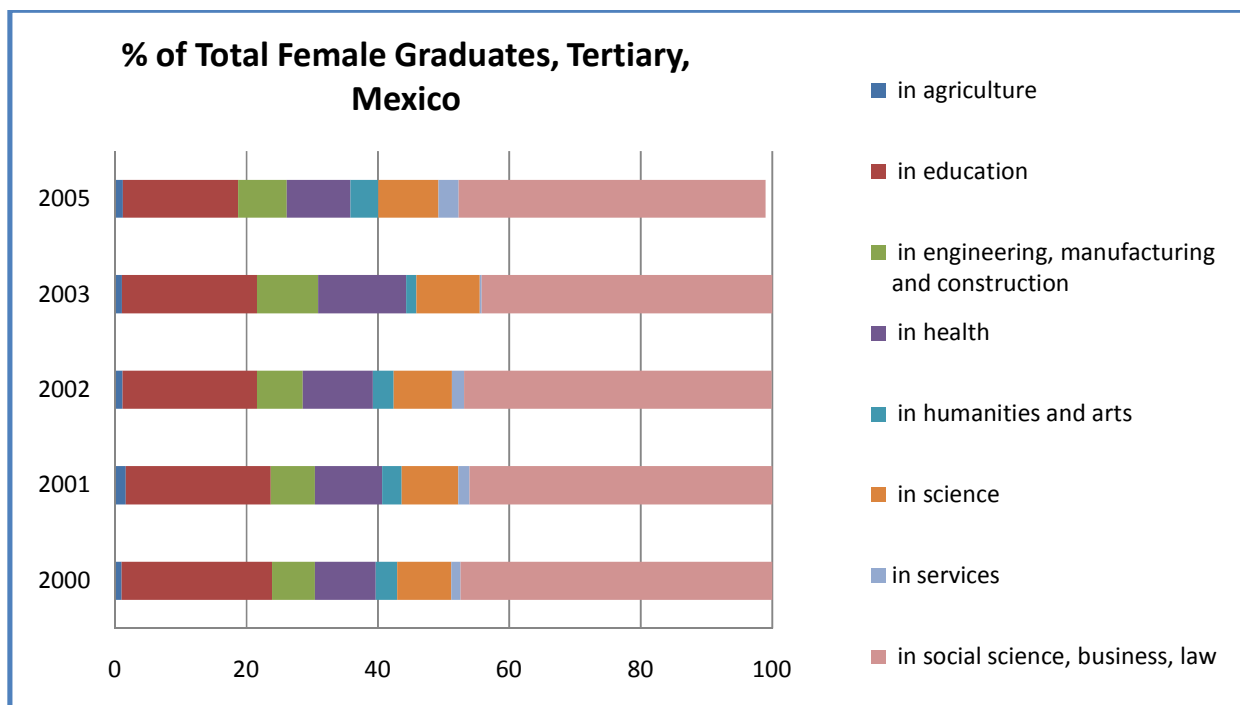


Figure 6e: Female Share of Graduates in Major (% tertiary) in Mexico.
Source: World Bank, 2007

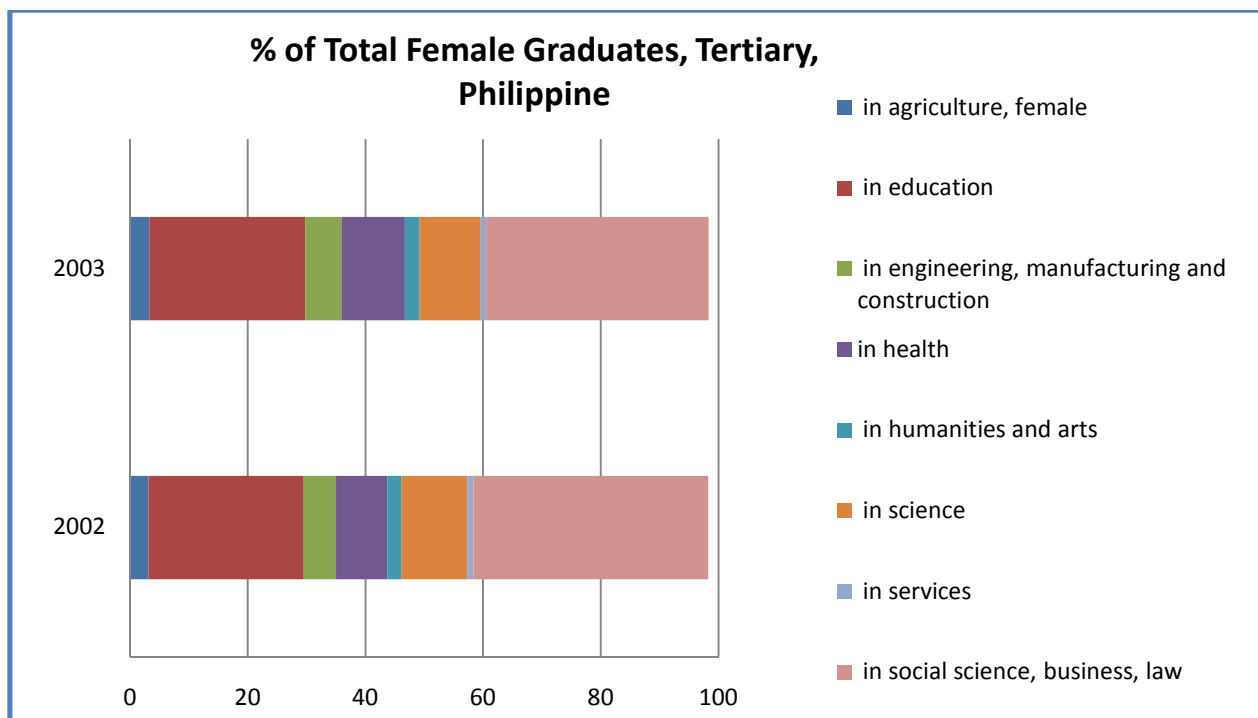


Figure 6f: Female Share of Graduates in Major (% tertiary) in the Philippine.
Source: World Bank, 2007

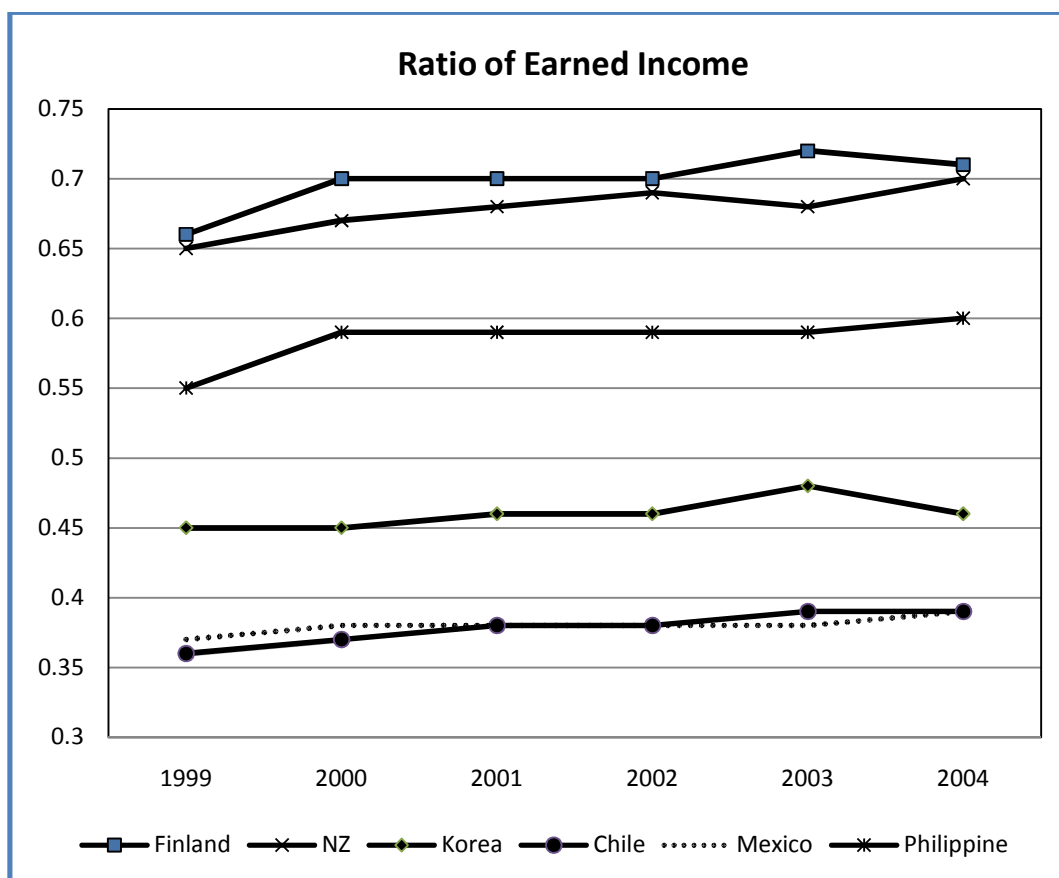


Figure 7: Ratio of Estimated Female to Male Earned Income.

Source: Human Development Report, 2006, United Nations. Web: hdr.undp.org.

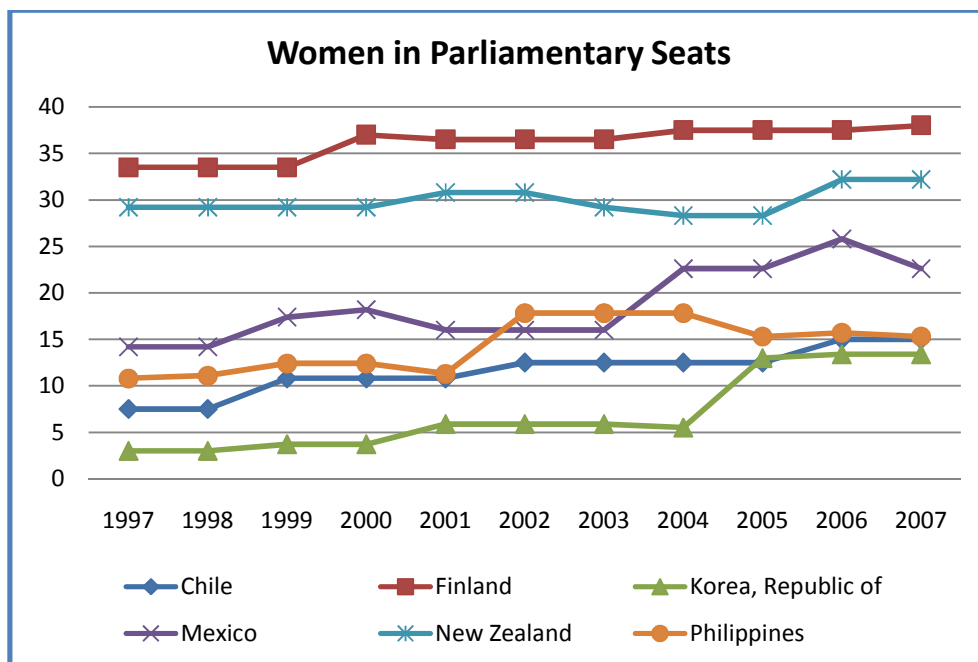


Figure 8: Women in parliamentary seats, per cent
Source: UNDATA, 2007