8 Gender equality since 1900

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This chapter provides an overview of global trends in gender equality in health, socio-economic resources and politics over the entire 20th century. It does so by extending the historical gender equality index (HGEI) introduced in the previous *How Was Life?* report back to 1900 and forward to 2010, and by including additional indicators. While progress since 1900 towards gender equality is visible especially in the dimensions of health and socio-economic resources, cluster analysis reveals that the groupings of countries by level of gender equality remains similar through time. The main exceptions are Southern Europe and the Nordic countries, which witness substantial improvements in the post-1950 period.

Introduction

Gender inequalities manifest themselves at all levels of society and are significant at a global scale, especially when women's decision-making capacity in politics, business and research are considered (OECD, 2016[1]). However, our knowledge of what instruments work best to eliminate gender inequalities remains limited by the fact that gender statistics provide information mostly on cross-sectional patterns. In the absence of systematic time-series data, we know little about the historical development of gender equality, let alone about the relative importance of different theories in explaining changes over time and between world regions (Carmichael, Dili and Rijpma, 2014[2]; Dilli, Carmichael and Rijpma, 2019[3]). Without this knowledge, it is much more difficult to develop the right tools to help eliminate gender inequalities.

Gender inequality implies economic and social costs. A recent estimate by Ferrant and Kolev (2016[4]) puts the economic loss at 7.5% of world GDP. Moreover, progress towards addressing this issue can be slow. Using the Global Gender Gap (GGG) index, which captures gender differences in health, economics, politics and household decision-making since 2011, the World Economic Forum (WEF, 2018[5]) estimates that at the current pace of progress it will take another 108 years to close the gender gap. For wages, it might take as long as 200 years (WEF, 2018[5]).

Such estimates are based on the assumption that the progress towards gender equality is linear and independent of the historical experiences of countries. But historical evidence shows that progress towards gender equality has not been linear (Carmichael, Dili and Rijpma, 2014[2]). The U-shaped hypothesis formulated by Goldin (1995[6]) implies that, in the case of the United States, industrialisation at the beginning of the 20th century coincided with a decline in the share of women participating in the labour force, which hit its lowest point around the 1920s. However, in the absence of historically comparable data across countries, it is impossible to conclude whether this profile is unique to the United States or holds globally. Progress towards gender equality has also experienced sudden setbacks. For example, with the collapse of the Soviet Union in 1989, the share of women in national parliament declined substantially as the previous quota system was phased-out (Carmichael, Dili and Rijpma, 2014[2]). These reversals in countries' progress towards gender equality cast doubt on even the WEF estimate of 108 years needed to achieve full equality between women and men.

In recent years policy analysts and researchers have come to a greater appreciation of the importance of a longer-term perspective for understanding the roots of gender inequalities. This is reflected in the development of datasets that allow for long-term comparisons across countries for a broad range of well-being outcomes. For instance, the World Bank (2015) has presented a dataset on women's legal rights that is available at a global level and covers the period since 1960. However, most datasets on gender equality lack a long-term historical perspective (Carmichael, Dili and Rijpma, 2014[2]; Dilli, Carmichael and Rijpma, 2019[3]).

In a chapter of the previous *How Was Life?* report, Carmichael, Dilli and Rijpma (2014[2]) presented data on women's well-being in socio-economic status, household position, politics and health from 1950 onwards for 20 major countries, as well as regional averages based on data for 112 countries. As gender equality has many facets (Sen, 1990[7]), that chapter relied on the Historical Gender Equality Index (HGEI) to capture its multidimensional nature. While this composite index highlighted that there has been significant global progress towards gender equality over the 20th century, it also confirmed the WEF view that there is still a long way to go. Among the countries covered in Carmichael, Dilli and Rijpma (2014[2]), none had achieved perfect equality by the 2000s, and large gender gaps persisted in many dimensions. In another study, we also showed that, despite progress towards gender equality in health, household decision-making, politics and socio-economic resources, there is limited evidence of global convergence towards a gender equal world (Dilli, Carmichael and Rijpma, 2019[3]). Despite the importance of developing a historical understanding of gender inequalities, and despite recent efforts in this direction, comparable historical gender statistics remain scarce on a global scale, especially for the period before the mid-20th century.

The lack of data limits the possibilities to understand the historical position of women. In the previous *How Was Life?* report, our HGEI covered only the period after 1950 due to lack of data on educational attainment and labour force participation by gender before that year. Given that for many of the industrialised countries, the gap in gender equality started to close before this period – as in the case of labour force participation in the United States (Goldin, 1995[6]) – coverage prior to 1950 is crucial to identify the conditions under which gender gaps might narrow. Moreover, the insight that the previous *How Was Life?* report provided into gender differences in economic empowerment remained limited, as we lacked data on key indicators such as women's wages. This chapter addresses these two shortcomings in the following ways. First, we extend the HGEI index back to 1900, and forward to 2010. This is as far back as current data allow, given our method, implying that for the first time we can provide an encompassing overview of gender equality over the full 20th century. Second, we present new data on the gender gap in wages in the 20th century. Third, we present new data on the share of female-headed households and how this has changed over time. In addition, we group countries according to their similarities and differences in the inequalities that women face in different dimensions of daily life, and identify countries where women are most disadvantaged. We do so by applying a cluster analysis on the composite HGEI index in two sub-periods (i.e. pre-1950 and post-1950) to assess whether the clustering of countries in terms of gender inequalities persists or changes over time as a result of improvements in any of the dimensions included in the HGEI index.

Description of the concepts used

This section describes how we measure the multifaceted nature of gender equality. Because gender inequality manifests itself in different dimensions of daily life, measuring it is often done using several indicators, as no single measure can capture all the dimensions in which gender inequality occurs. This chapter takes the extra step of introducing an overall composite index, based on indicators of how women fare relative to men in terms of health status, socio-economic resources, presence in national parliaments and age of first marriage. Combining these data into a composite index summarises the different indicators in a single standardised measure, giving insight into overall gender equality at national level (Dilli, Carmichael and Rijpma, 2019[3]). While the availability of historical data plays a role in the choice of our indicators, we rely on previous composite indices of gender equality, in particular the World Economic Forum's Global Gender Gap (GGG) and on the dimensions they identify as crucial in measuring women's position. Dilli, Carmichael and Rijpma (2019[3]) discuss the comparability of the composite index used in this chapter (which we label HGEI) with the existing indices such as the OECD's Social Institutions and Gender Index (SIGI) and the GGG, as well as the theoretical justification of our indicators and the method followed in constructing the HGEI in more detail. Here we provide a brief summary to guide the reader.

In constructing the HGEI, our goal is to provide a global overview of gender equality. Our choice of dimensions included in our composite index was constrained by both international comparability and data availability. Conceptually, our goal is to provide an overview of the differences between men and women in their agency to achieve desired life outcomes (Sen, 1999[8]; Nussbaum, 2000[9]). We include health, as it is key to being able to enjoy other aspects of well-being (Sen, 1999[8]). To capture this dimension, we consider differences between women and men in terms of life expectancy at birth and ratios of infant girls to boys. Second, we look at gender differences in ages at first marriage as an indicator of women's agency in the household; this is an important dimension, as the SIGI 2019 report has shown that discrimination in the family sphere is pervasive,, particularly in sub-Saharan Africa, MENA and Southeast Asia (OECD, 2019[10]). Third, we look at the share of women elected in national parliaments as a reflection of whether women are involved in the political decision-making process. Fourth, as a measure of gender inequalities in socio-economic resources, we use the differences in educational attainment and labour force participation between women and men. While education contributes to women's capacity to make meaningful life decisions, employment matters, because the income it generates gives women the ability

to live their lives independently from men and strengthens their bargaining position in the household. Since the HGEI is a composite indicator, we apply slightly different rules to those used in other chapters in this book when reporting regional averages. The 40% threshold of regional population covered by non-imputed data (the threshold used in Carmichael, Dilli and Rijpma (2014[2]) is now applied to the average of the six indicators, which means that if one indicator has lower coverage, it can be compensated by the other indicators.

While the HGEI summarises the multidimensional nature of gender equality, we also discuss in this chapter two new measures of gender equality, namely women's wages and the share of female-headed households. These measures are not included in the composite HGEI index for two main reasons. First, and most importantly, the time and country coverage of these indicators are more limited than for the indicators included in the HGEI (pre-1950 and global). Second, while the indicators included in the HGEI index provide insight into women's position relative to men, this is not the case for the share of female-headed households. This indicator captures whether women manage autonomously their own households, making this an institutional arrangement that in some cases could benefit women (Van Driel, 1994[11]; Chant, 1985[12]; World Bank, 1999[13]). In some countries, female headship appears to be a voluntary choice, and one that, in the case of Vietnam, is not associated with detrimental effects (World Bank, 1999[13]). However, female-headed households often face greater hardship and are substantially poorer than those headed by men. In an historical context, Horrell and Humphries (1997[14]) show that in England during the Industrial Revolution female-headed households were those where deprivation was greatest. In recent years, female-headed households are over-represented among the poor, and are often identified as the "poorest of the poor" (Bradshaw, Chant and Linneker, 2017[15]). As, depending on national contexts and periods, this indictor can have different implications for women's empowerment, it is excluded from the composite measure presented below.

Historical sources

This section describes the sources used to capture the various dimensions of gender inequality. Table 8.1 presents an overview of the variables used to construct the composite index, which is now extended to 1900 and 2010, as well as the additional indicators of gender equality presented in this chapter, alongside their source and summary statistics. Table 8.1 also presents summary statistics for the underlying indicators of the HGEI.

The HGEI measures the position of women relative to men in terms of health status, household conditions, political representation and socio-economic resources. To measure gender differences in health status, we use the ratio of female-to-male life expectancy at birth and the ratio of girls to boys in the population between the ages of 0 and 5. We use data on the age at first marriage of women and men to capture the relative position of women in the household; those on the share of women (relative to men) among members of national parliaments to measure gender bias in political representations; and the female-to-male ratio in average years of schooling and labour force participation to measure socio-economic standing. For each indicator, we express gender differences in terms of ratios between women and men, implying that a score below 1 indicates bias against women, whereas a score above 1 indicates that women are outperforming men. The ratios allow for a straightforward interpretation of countries' progress over time in each dimension and in the overall composite index (see Dilli, Carmichael and Rijpma (2019[3]) for a more detailed explanation of the use of ratios). Because of our choice to use ratios, as well as the similarity of the indicators included in the GGG, we follow the method of the GGG index to construct our composite index (WEF, 2013[16]). First, for each variable, we truncate the ratios at the equality benchmark. Second, we take the weighted average of two sub-indices, i.e. health status and socio-economic resources, as these two sub-indices include two indicators, whereas gender equality in the household and in politics are captured by a single indicator, namely the gap in ages at first marriage and the share of women among members of national parliaments. Third, we normalise the underlying variables of each

dimension by using their standard deviations. Last, we take the arithmetic average of the four sub-indices multiplied by 100. We provide a more detailed discussion of our index in Dilli, Carmichael and Rijpma (2019[3]). The data in Table 8.1 refer to non-imputed and non-truncated data. Due to increased country coverage, some of the values shown in Table 8.1 differ from those presented in Carmichael, Dilli and Rijpma (2014[2]).

Table 8.1. Descriptive statistics for measures of gender inequality

All indicators are measured in ratios of female to male

Dimension	Indicator (all expressed as ratios between women and men)	Included in HGEI	Range	Mean (standard deviation)	Number of countries	Years	Source
Health	Life expectancy	YES	0.80-1.48	0.99 (0.06)	139	1870-2010	United Nations (2013[17]); lifetable.de, Human Mortality Database; Preston (1975[18])
	Sex ratio at young age (0 to 5)	YES	0.83-1.21	0.97 (0.03)	142	1870-2010	Mitchell (2007[19]); United Nations (2013[17])
Socio-economic standing	Average years schooling	YES	0.01-1.50	0.71 (0.30)	89	1870-2010	Barro and Lee (2013[20]); Barro and Lee (2015[21]); Lee and Lee (2016[22])
	Labour force participation	YES	0.05-1.11	0.58 (0.24)	140	1870-2010	Mitchell (2007); ILO (2010[23])
	Monthly wages	NO	0.57-1.03	0.88 (0.12)	34	1955-1985	De Zwart et al. (2014); ILO (2018)
Household decision-making	Age at first marriage	YES	0.64-0.96	0.87 (0.06)	70	1870-2010	Carmichael (2011[24])
	Female-headed households	NO	0.03-0.54	0.24 (0.097)	91	1970-2003	Minnesota Population Center (2018)
Political representation	Parliament seats	YES	0.00-1.29	0.09 (0.14)	137	1900-2010	Paxton, Green and Hughes (2008[25]); online electoral archives; Inter-parliamentary Union (2011[26])
HGEI			40.35-92.96	61.59 (7.50)	138	1900-2010	Carmichael, Dilli and Rijpma (2014[2]); Dilli, Carmichael and Rijpma (2019[3])

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Until recently, while measures on gender inequalities in health status, household conditions and political representation were available from 1900 onwards, data on socio-economic inequalities were available only from 1950 onwards. Recently, however, there have been improvements in the availability of educational attainment statistics disaggregated by gender: both Barro and Lee (2015[21]) and Lee and Lee (2016[22]) updated their datasets, which we use to compute our HGEI index. This allows tracking ratios of female-to-male educational attainment back to 1820. Progress has also been made in the digitalisation of statistics on labour force participation by gender. Using Mitchell (2007[19]), we have extended data on women's and men's labour force participation for a selected number of countries back to the 1900s. This allows us to re-compute the HGEI to explore trends in gender equality for the entire 20th century.

This chapter also presents new historical evidence on the economic position of women. The International Labor Organization (ILO) provides mean nominal monthly earnings of employees by sex and by economic activity since the 1970s. Additionally, for a selected number of countries, it is possible to gather information on the real wages of women and men since the post-war period. For instance, de Zwart, B. van Leeuwen

and J. van Leeuwen-Li (2014[27]) present wage data from ILO statistics for a number of developing countries from the mid-1950s onwards.

The indicator we use captures the share of all households that are female-headed using historical census data calculated for four points in time (1970, 1980, 1990 and 2000) from data available in the IPUMS database (Minnesota Population Center, 2018[28]). While the data from IPUMS are mostly available from the 1960s, for some Western countries these data extend back to the early 19th century. Together with efforts made by the Mosaic Project (n.d.[29])to digitalise historical censuses, these data will offer the opportunity to expand coverage to a number of Eastern and Southern European countries in the future.

We apply a cluster analysis on the HGEI index to identify countries where women are more disadvantaged in a global comparison, and whether countries remain or move out of this cluster over time. Clustering orders and organises data in such a way that each cluster consists of countries that are similar in terms of the underlying variable and dissimilar to other clusters (Zeumo, Tsoukiàs and Some, 2012[30]). This method has been used in multidimensional poverty measurement based on the capability approach (Ferro, Fluckiger and Weber, 2008[31]). It provides some insight into gender inequality in the world, without applying a pre-determined threshold level of disadvantage that women face across different societies.

Data quality

While recent years have seen important improvements in the collection and availability of historical gender statistics, the data used in this chapter have their limitations. First, while we extend the HGEI back to the early 20th century, we can do this only for countries for which Mitchell (2007[19]) provides statistics on women's labour force participation.

Second, while we extend the measures that provide insight into the position of women, we still lack data on many other aspects that matter for gender equality, such as the unequal allocation of time use in the home and violence against women.

Regarding women's wages, only data for a handful of occupations (bookbinders, spinners, sewing machine operators) are available in a sufficiently large number of countries for the period 1955-1985. This means that we can report only within-occupation wage ratios or ratios of the unweighted average wage across this limited number of occupations. Our analysis therefore considers simply the gender wage gap in specific occupations. This is important as occupations are often gender-segregated, with women clustering into lower paid occupations or occupations dropping in relative remuneration as the share of women rises.

The historical ILO wage data have a number of other limitations. For a large number of occupational categories, wage ratios are equal to 1, which suggests that some countries reported minimum (rather than actual) wages, or simply filled in the ILO questionnaire with identical wages for men and women. The fact that the ILO wage data for many developing countries (e.g. in sub-Saharan Africa) reported the same wages for men and women suggests this might especially be an issue with the data from that region. Therefore, rather than regional averages, below we present the trends in wages only for a selected number of countries. Moreover, the fact that we have data only for a number of occupations such as textiles, in which women often make up a majority of the labour force, means we should not discount the possibility that, in those limited cases, wages were in fact equal.

The data used for the HGEI that were included in the previous report are also subject to some caveats (Carmichael, Dili and Rijpma, 2014, p. 224[2]). For one, our measure does not capture how women are faring in absolute terms, but only relative to men. We are also not able to provide a full overview of gender disparities in some of the dimensions captured by other composite indices such as access to financial services. Finally, women often bear the burden of domestic duties and unrecorded care tasks, which our measures do not reflect (see Dilli, Carmichael and Rijpma (2019[3]) for a more elaborated discussion).

A further concern is the limited comparability of these measures across countries. Our indicators (except the educational attainment indicator) rely on official statistics, implying that our measures are collected within a given legislative framework. For instance, we can make comparisons based only on legally documented marriages, whose definition differs in different national contexts. Similar issues occur when measuring women's political participation as well as women's engagement in economic activity. For instance, our measure of political representation of women in national parliaments does not provide any insight into the grassroots political activity of women.

When available, data quality is typically quite high (see Table 8.2 and Annex Table 8.A.1). The overwhelming majority of the data used in this chapter comes from official statistical agencies or is the product of historical research using similar sources and methods.

Table 8.2. Quality of gender data on education and labour force participation

	Western Europe	Eastern Europe	Western Offshoots	Latin America and Caribbean	Sub-Saharan Africa	Middle East and North Africa	East Asia	South and Southeast Asia
Average years of schooling								
1820	2	2	2	2	2	2	2	2
1870	2	2	2	2	2	2	2	2
1913	2	2	2	2	2	2	2	2
1950	2	2	2	2	2	2	2	2
1973	2	2	2	2	2	2	2	2
2008	2	2	2	2	2	2	2	2
Labour Force Participation								
1820	2	2	2	2	2	2	2	2
1870	2	2	2	2	2	2	2	2
1913	2	2	2	2	2	2	2	2
1950	1	1	1	1	1	1	1	1
1973	1	1	1	1	1	1	1	1
2008	1	1	1	1	1	1	1	1

Note: 1. High quality: the product of official statistical agency (national or international); 2. Medium quality: the product of economic-historical research using the same sources and methods as applied by official statistical agencies; 3. Moderate quality: economic historical research, but making use of indirect data and estimates; and 4. Low quality: estimates based on a range of proxy information. In case of multiple sources, the lowest quality source is given.

Main highlights of historical developments in gender equality

This section presents trends in individual measures of gender equality and then trends in the HGEI index by world region since 1900, as well as the results of our cluster analysis.

Historical developments in different aspects of gender inequality

While Carmichael et al. (Carmichael, Dili and Rijpma, 2014[2]) presented educational attainment data from 1950 onwards, Figure 8.1 presents gender differences in educational attainment since 1900. It is clear that a few regions experienced progress towards gender equality in education prior to the mid-20th century. This trend is especially visible in Western and Eastern Europe and in former Soviet Union countries, which show a tendency towards greater equality in this measure since the 1920s. While Latin American countries displayed greater gender equality in education already in the early 20th century, much of the narrowing of the gender gap took place from the mid-20th century onwards. As noted by Carmichael et al. (2014[2]), there was no gender gap in education in the Western Offshoots already in the 1950s, and Figure 8.2 shows

that a similar pattern was already visible around the 1920s. For the regions that lag behind in the process of closing the gender gap in education, trends prior to the mid-20th century show that they experienced the most progress after the 1950s. A clear improvement in women's education is visible in the MENA region, which made the most progress starting from the 1970s, and in East Asia from the 1960s onwards. In the other countries in Asia and sub-Saharan Africa, progress in closing the gap has been more limited.

Figure 8.1. Ratios of female-to-male average years of schooling across world regions
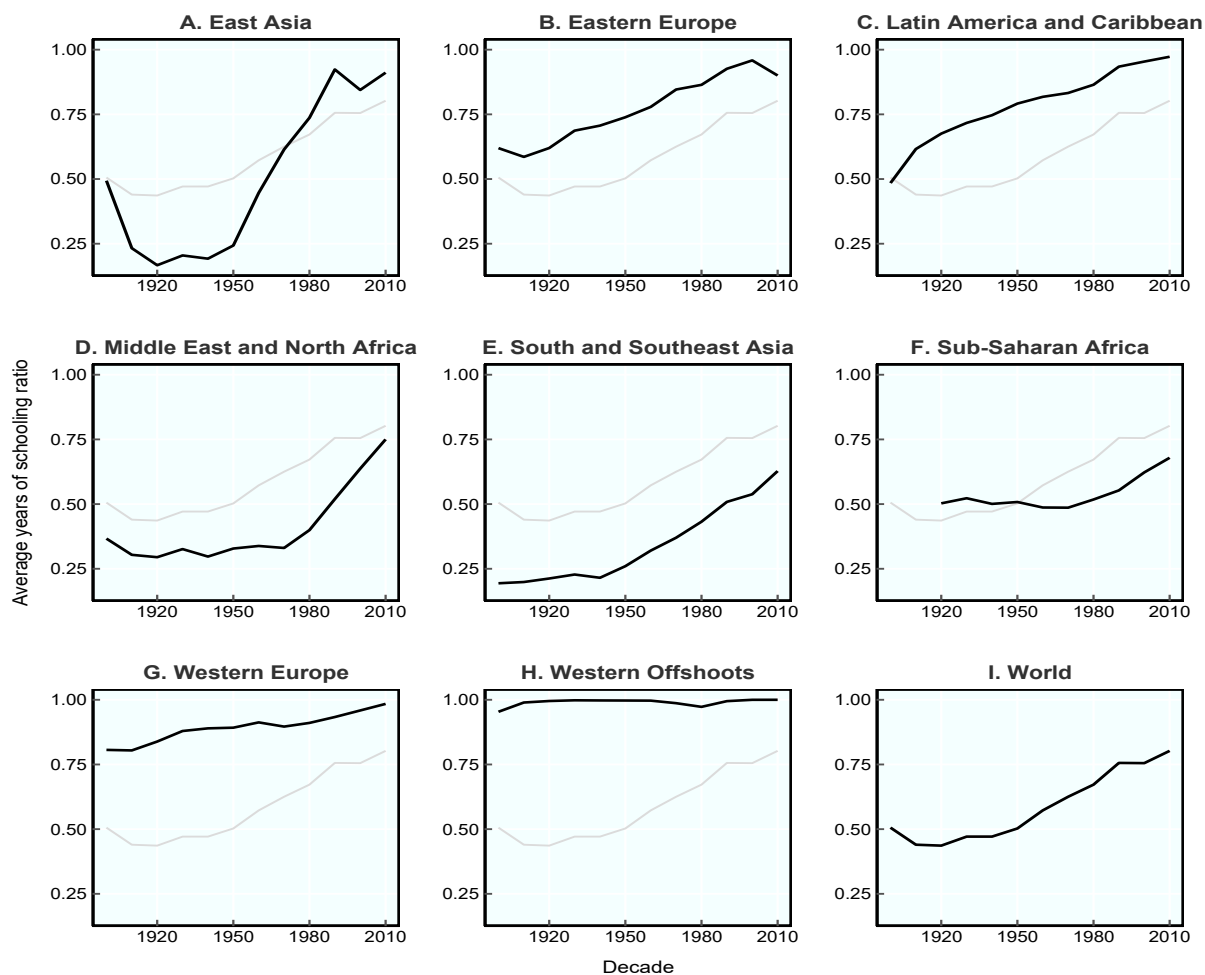
Decennial averages

Note: Grey lines show world average.
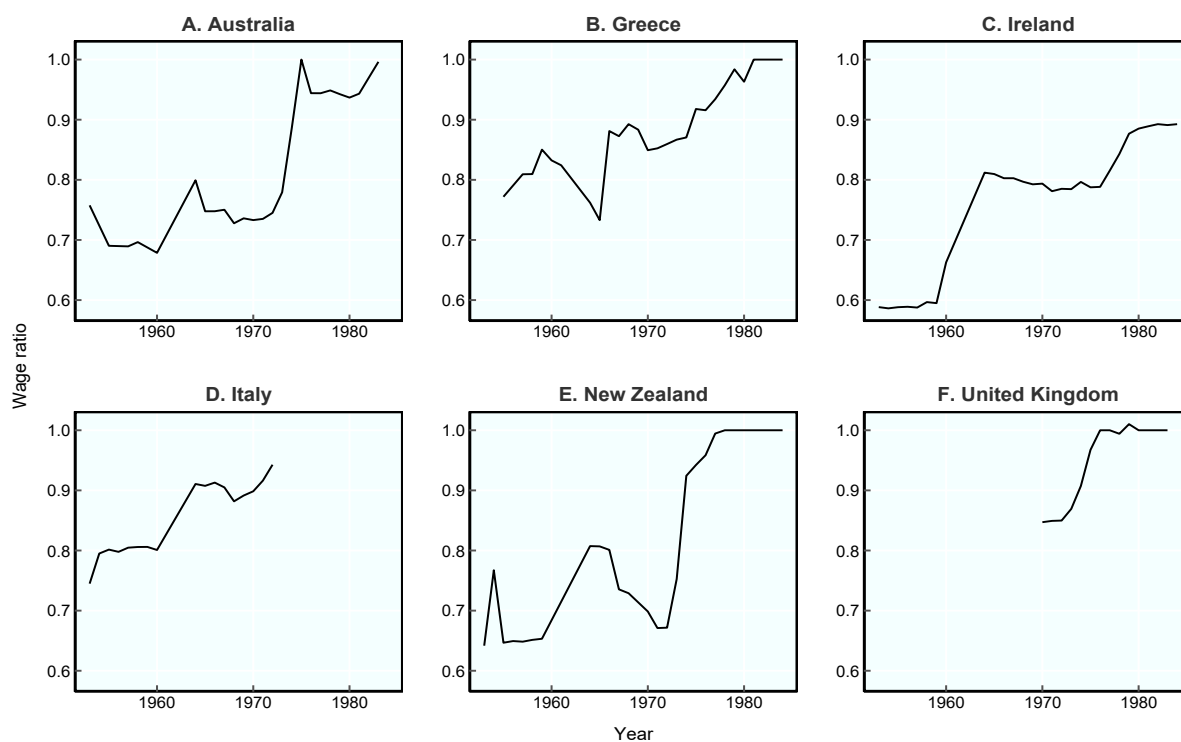Source: Clio-Infra, www.clio-infra.eu.

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Figure 8.2 presents trends in the share of female-to-male labour force participation for the 20th century. While data are scarce, Eastern Europe (including former Soviet Union countries) was at one point by far the most equal region in this dimension of gender equality, with the highest ratio (at 0.9) in 1970. While this region's position has since slipped, it was still one of the best-performing regions in the world in 2010 (together with the Western Offshoots). While Western European countries and the Western Offshoots were close to the world average in the first half of the 20th century, progress towards gender equality in labour force participation accelerated after the 1970s, which Goldin (1995[6]) describes as part of the "Quiet Revolution" associated with the expansion of the service sector. The Middle East and North Africa as well as South and Southeast Asia perform poorly in this aspect of gender equality, being among the worst-performing regions throughout the period and showing only limited progress. Overall, we can observe a small U-shaped curve in this measure in a number of the regions.

Figure 8.2. Ratios of female-to-male labour force participation across world regions
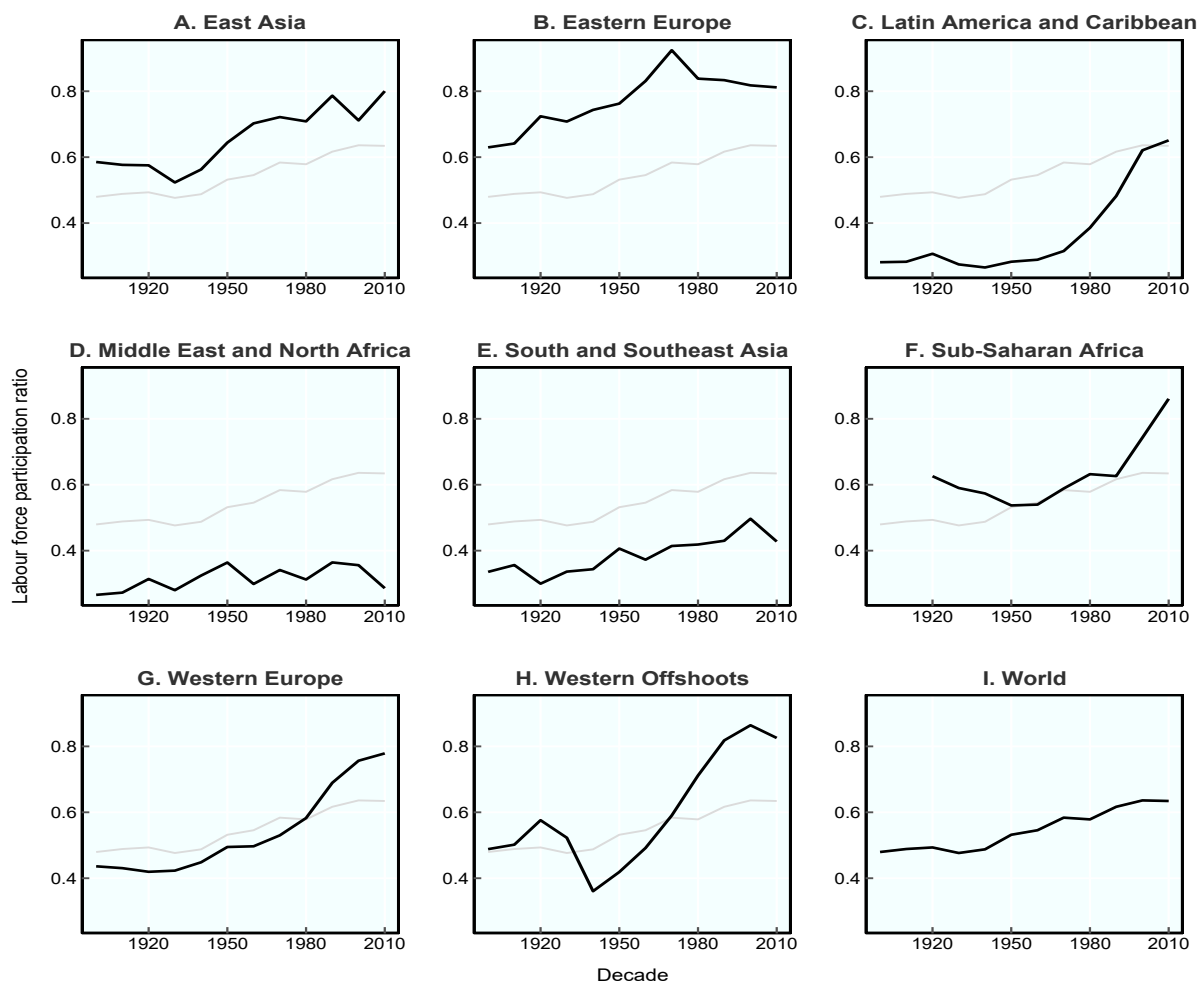
Decennial averages

Note: Grey lines show world average.
Source: Clio-Infra, www.clio-infra.eu.

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Figure 8.3 shows trends in the gender wage gap for the handful of occupations for which data are available for both men and women from the ILO for a 30-year period. This figure shows that, in those occupations in which women's participation was deemed important enough to record their wages, the gender wage gap declined in the second half of the 20th century. By the 1980s, women were receiving wages similar to those of men in four (Austrialia, Greece, New Zealand and the United Kingdrom) of the six reported countries. These occupations are, however, those that typically earn near minimum wages. At the same time though, the historical record also shows that the status of these occupations declined over time, leading to a drop in both the number of men in these occupations and in their relative remuneration, hence exaggerating the narrowiing of the gender wage gap (Pan, 2015[32]).

Figure 8.3. Ratios of female-to-male average wages across selected countries, 1955-1985

Source: Clio-Infra, www.clio-infra.eu.

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Figure 8.4 presents developments in the share of female-headed households by major world region. This share increased quite strongly in Western Europe, Latin America and North America from the 1970s onwards, with increases also recorded in other regions. The higher life expectancy of women compared to men is an important factor driving these changes, as it results in a higher number of widows following the death of their male partner. Conversely, the share of female-headed households is quite low in the Asian and MENA regions.

Figure 8.4. Female-headed households as a share of all households, 1970-2010

Decennial averages
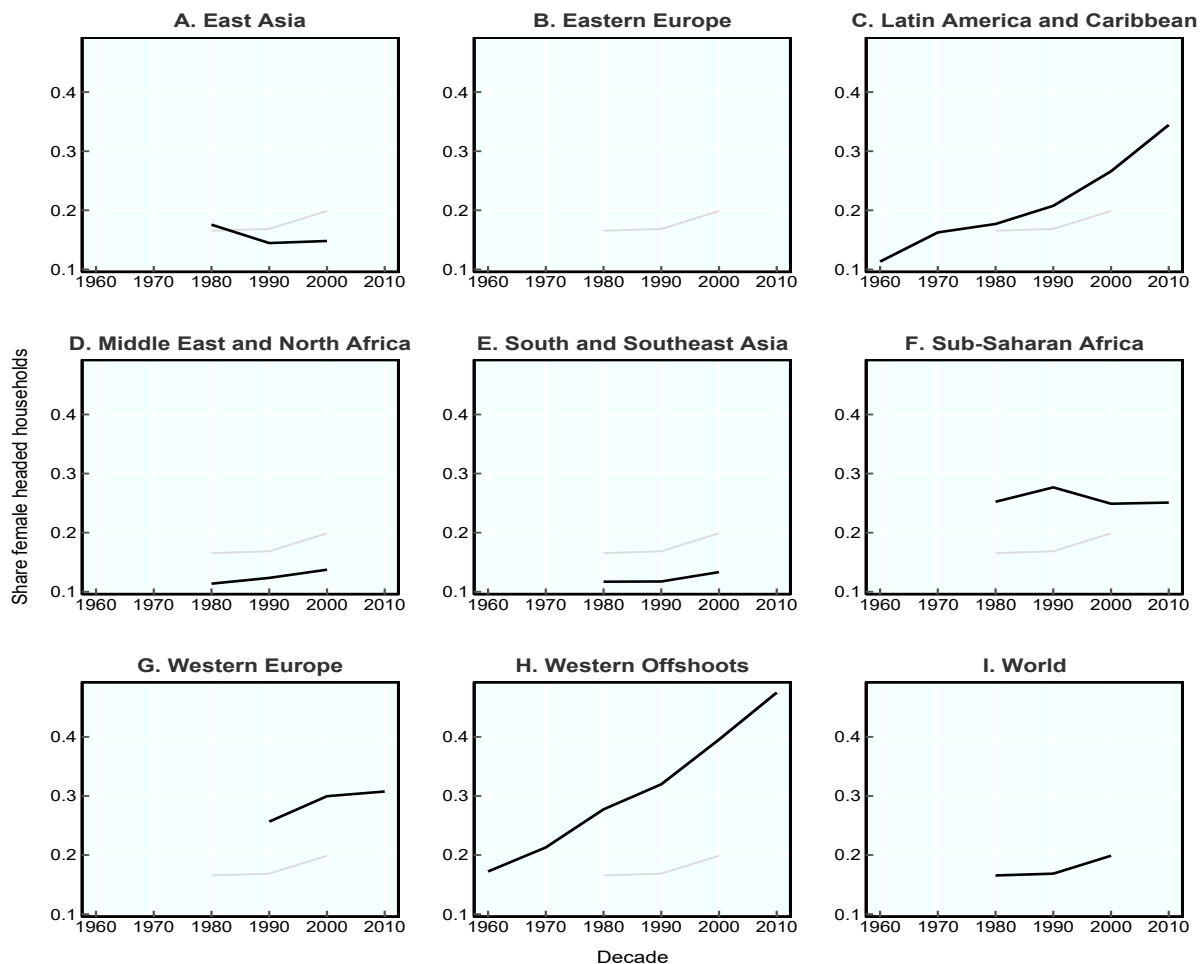
Note: Grey lines show world average.
Source: Clio-Infra, www.clio-infra.eu.

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Historical developments in a composite measure of gender inequality

Before discussing historical trends in our composite indicator of gender equality (HGEI), we briefly compare it to similar indices for the more recent period. Annex Figure 8.A.1 shows the relation of the HGEI with the SIGI, the GGG and the Gender Inequality Index (GII) in 2000. Overall, the HGEI is strongly correlated with the GGG and the GII over recent years, which gives us confidence in the ability of the HGEI to measure gender equality in an historical perspective. The correlation with the SIGI is somewhat weaker (-0.54) but is in line with expectations.[1] While the SIGI focuses on social institutions as determinants of gender equality, the HGEI focuses on outcomes. While we expect drivers and outcomes to be correlated with each other, many dimensions beyond institutions shape gender disparities.

Figure 8.5 shows trends in our composite gender equality index (HGEI), extended back to 1900, across major world regions. As already documented by Carmichael, Dilli and Rijpma (2014[2]), our composite measure of gender equality exhibits a steady upward trend (i.e. lower inequality), especially in the second half of the 20th century, which can be observed for all regions of the world. However, global progress is limited. While in 1900 the value of our gender equality measure at the world level was 56, it reached a value of 70 (out of a possible 100) in the 2010s, well short of the theoretical maximum.

Looking at regional averages reveals differences. The highest gender equality scores are achieved in Western Europe, the Western Offshoots and East Asia. Gender equality in other regions, particularly the Middle East and North Africa and South and Southeast Asia, remain well below the world average. Latin America shows similar trends as the world average. Sub-Saharan Africa reaches the world average around the 1960s, but in the period since then it falls slightly below the global mean.

Figure 8.5 shows that Western Europe, Eastern Europe and the former Soviet Union and the Western Offshoots were outperforming the rest of the world at least since the middle of the 20th century, and were closing the gender gap. This strong performance reflects higher levels of female parliamentary representation, higher female labour force participation and a higher female-to-male life expectancy ratio. For the latter measure, this high performance partly reflects the lower life expectancy of men.

For the other indicators, an interesting question is to what extent these developments reflected the existence of socialist regimes in Eastern Europe and the former Soviet Union after the World Wars. Unfortunately, data coverage before 1950 is insufficient to assess regional averages in the pre-socialist period. At the same time, levels of gender equality in individual indicators (sex ratios, schooling ratios and labour force participation ratios) in Hungary, Bulgaria, Romania, Poland and the Czech Republic show performance equal to or above the global average performance already in the first half of the 20th century. However, the performance of these countries on the HGEI deteriorated after the 1990s, especially due to a drop in female parliamentary representation. It should also be noted that this region was historically characterised by high levels of patriarchy – sex- and age-related dominance within the household (Gruber and Szołtysek, 2015[33]), which suggests strong improvements in gender equality over the course of the 20th century.

Progress outside Europe and the Western Offshoots was limited in the first half of the 20th century, but started to accelerate from the 1940s onwards. The Middle East and North Africa and South and Southeast Asia remain the least gender egalitarian regions throughout the period. Furthermore, although Eastern Europe and the former Soviet Union made substantial progress towards gender equality, this trend reversed after the 1980s. East Asia bucks the trend observed in the rest of Asia, performing above the world average in the second half of the 20th century.

Figure 8.5. Composite Historical Gender Equality Index across world regions, 1900-2010

Decennial averages
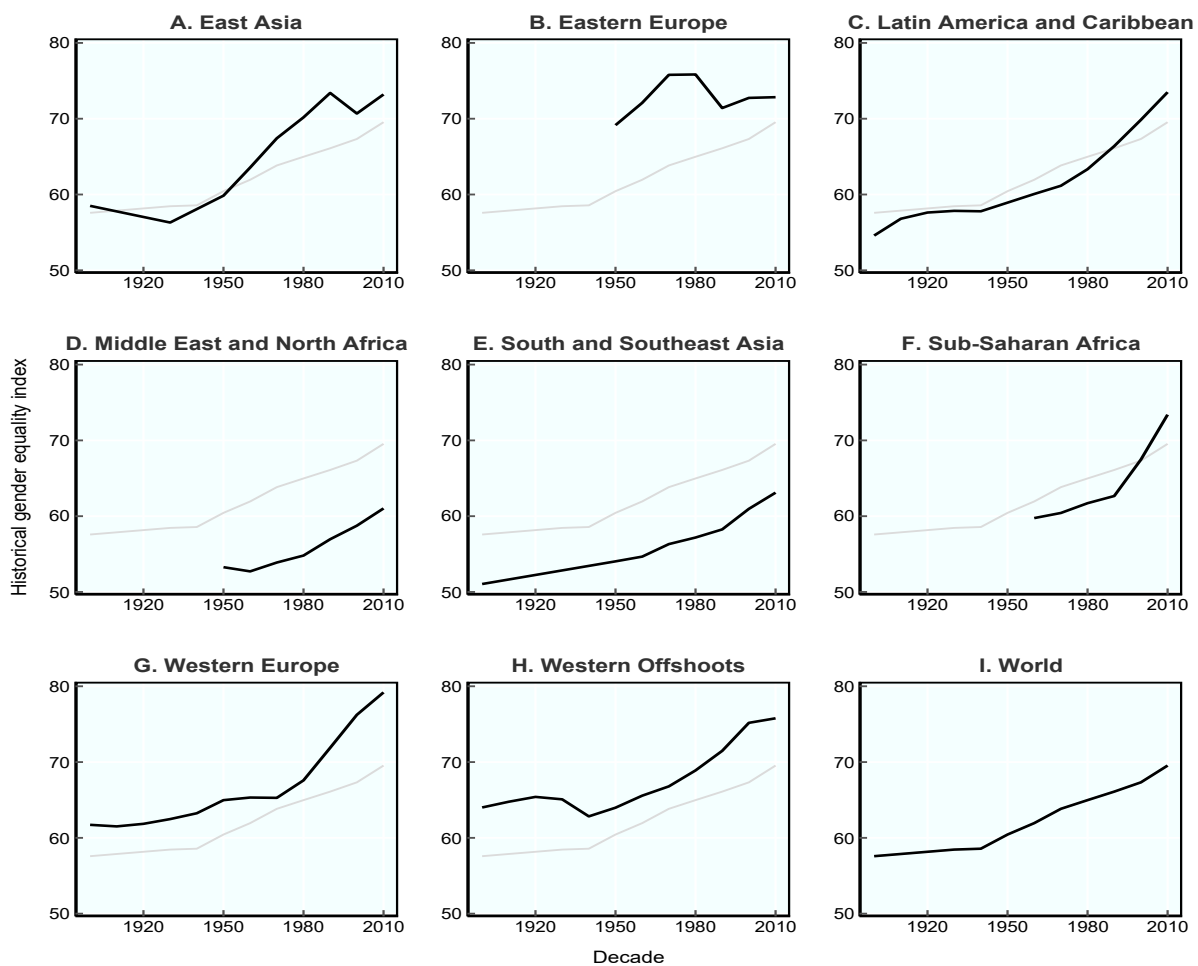
Note: Grey lines show world average.
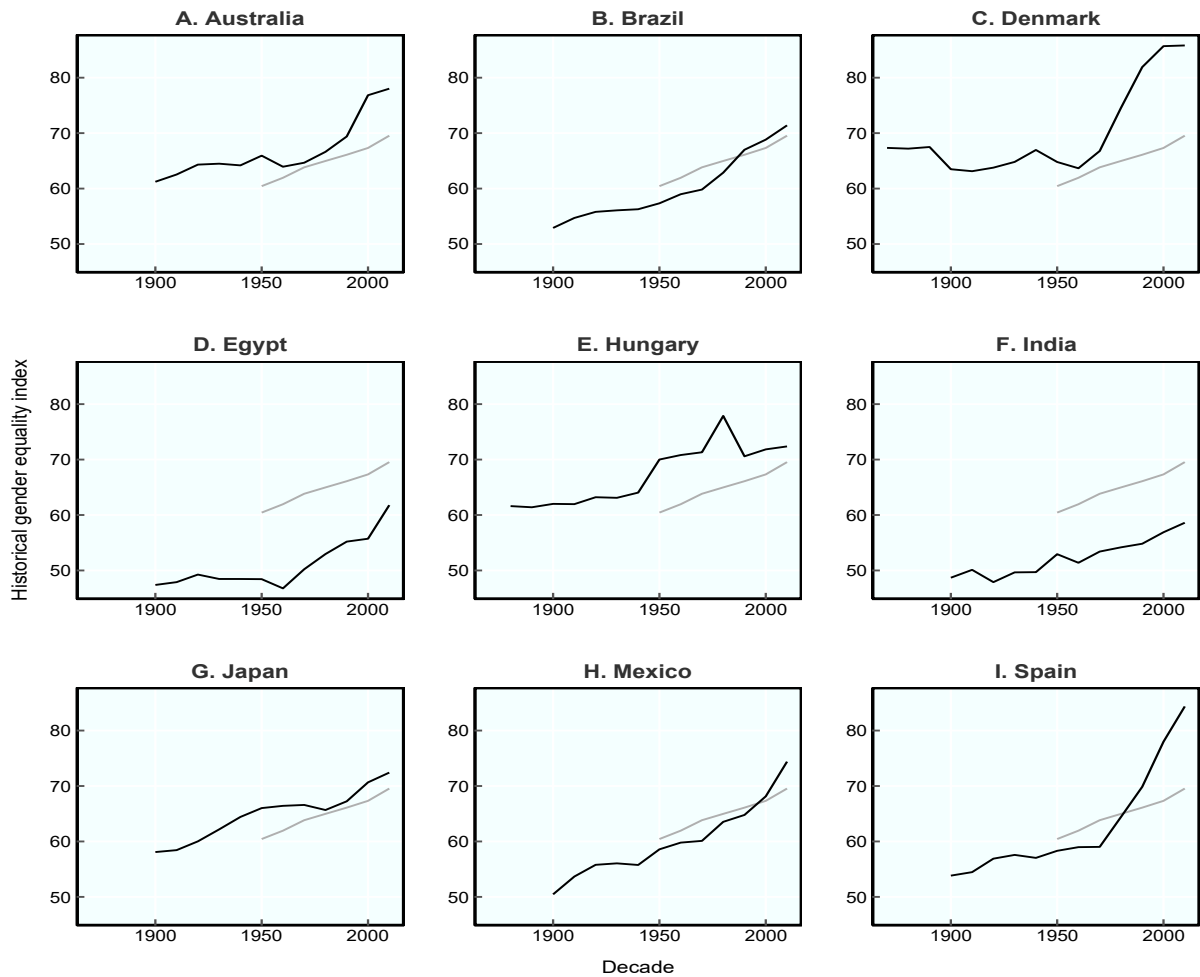Source: Clio-Infra, www.clio-infra.eu.

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Figure 8.6 shows the diversity in countries' progress towards gender equality within regions. Mexico shows a steady increase from the 1910s onwards, which accelerates from the 1960s onwards. In Europe, Hungary and Denmark are above the world average for the entire period, while progress towards gender equality was more limited in Spain until the 1970s, after which it became among the highest-scoring countries in the 2010s. India and Egypt are some of the worst performers in the world throughout the 20th century, with very limited progress. In 2010, these two countries were still far below the world average and even below the values achieved by some countries in 1900. Mexico and Japan are both fairly close to the world average throughout the period.

Figure 8.6. Composite Historical Gender Equality Index in selected countries, 1900-2010

Note: Grey lines show world average.
Source: Clio-Infra, www.clio-infra.eu.

StatLink https://stat.link/ie21lp

Figure 8.7 presents the results of the cluster analysis for the pre-1950 and post-1950 periods. These sub-periods were selected to reflect the moments when progress towards gender equality is visible in different regions (see Figure 8.6), and coincide with those identified in Goldin's (1995[6]) observation of the presence of a U-shaped relationship between economic development and women's labour force participation in the United States over the 20th century. We limit the cluster analysis to 32 countries for which we have data over the entire 20th century. Four distinct clusters emerge from the analysis, with some countries shifting between these clusters and with the difference between clusters getting larger over the 20th century.

The first cluster is composed of Egypt, Pakistan, India and Bangladesh and identifies the group of countries where women are among the most disadvantaged according to the HGEI. Countries in this group have the lowest female labour force participation and educational attainment, and score the worst in health outcomes in a global comparison. This cluster also includes countries with the largest gap in marriage age between men and women. While these countries made some improvement in a few of these dimensions, such as increasing women's educational attainment and life expectancy since the 1950s, progress has been too limited for each country in this cluster to move out of it in the post-1950 period. This is no surprise given that Pakistan, for instance, scores 50 points on a 100-point scale in the pre-1950 period, and only 53 points in the post-1950 period. In both Pakistan and Bangladesh, gender inequalities continue to manifest themselves in the most extreme version of the "missing girls" phenomenon (OECD, 2019[10]). In 2010, 2 020 000 and 2 907 000 girls were estimated to be missing based on the demographic reports in Bangladesh and Pakistan respectively (United Nations Fund for Population Activities, 2013[34]).

The second cluster is made up of countries with the second-largest gender inequalities in various dimensions of daily life. An important characteristic of this cluster is that the countries move closer to those where gender inequalities are less pronounced, and further away from the first cluster where women face the largest disadvantages in all dimensions of gender inequalities. This cluster includes the Southern European countries (Spain, Italy, Portugal), Latin American countries (Mexico, Cuba, Argentina), South Africa and Myanmar in the pre-1950 period. Countries in this cluster have moderately high gender differences in education and labour force participation, which distinguishes this cluster from the better-performing countries in the third and fourth clusters in the pre-1950 period. In contrast to the first cluster, countries in this group feature relatively small differences in the health and household dimensions and show similar performance to the other countries in the third and fourth clusters. As a result of improvements in education and labour force participation, Spain and Portugal move into the third cluster in the post-1950 period. For instance, Spain, which scores on average 56 points on 100-point scale in the pre-1950 period, scores 69 points in the post-1950 period, a value similar to Australia, France and Switzerland in the same period. Argentina and Cuba also make a similar shift to the third cluster as a result of the increase in women's political representation and education.

The third cluster is composed of moderately gender-equal countries. This cluster includes most countries in continental Europe (Austria, the Netherlands, Belgium, Germany, France, Sweden, Denmark), Eastern Europe (Russia, Bulgaria, Hungary, the Czech Republic, Romania) and English-speaking countries (United Kingdom, Ireland, Australia, New Zealand) in the pre-1950 period. This cluster is characterised by smaller gender inequalities in health, marriage age and socio-economic resources than those in the second cluster. The lowest-performing country in this cluster is Belgium, which starting from a score of 62 in the pre-1950 period reached 72 in the post-1950 period. Also in the post-1950 period, Sweden, Norway and Denmark moved from this cluster to the top-performing fourth cluster because of progress they made towards gender equality in both socio-economic resources and politics.

The fourth cluster includes the most gender-equal countries. While in the pre-1950 period, it includes only Finland, Canada and Poland, Canada and Poland move to the third cluster in the post-1950 period, while Sweden, Norway and Denmark join the group of top performers on account of strong gains in women's parliamentary representation. However, none of the countries in this cluster gets close to the 100 score, with Sweden attaining the highest scores (90 in the 2000s; 92 in the 2010s).

Figure 8.7. Cluster analysis based on the HGEI in pre- and post-1950 periods

Source: Clio-Infra, www.clio-infra.eu.

StatLink ᵐˢᴾ https://stat.link/zbmhil
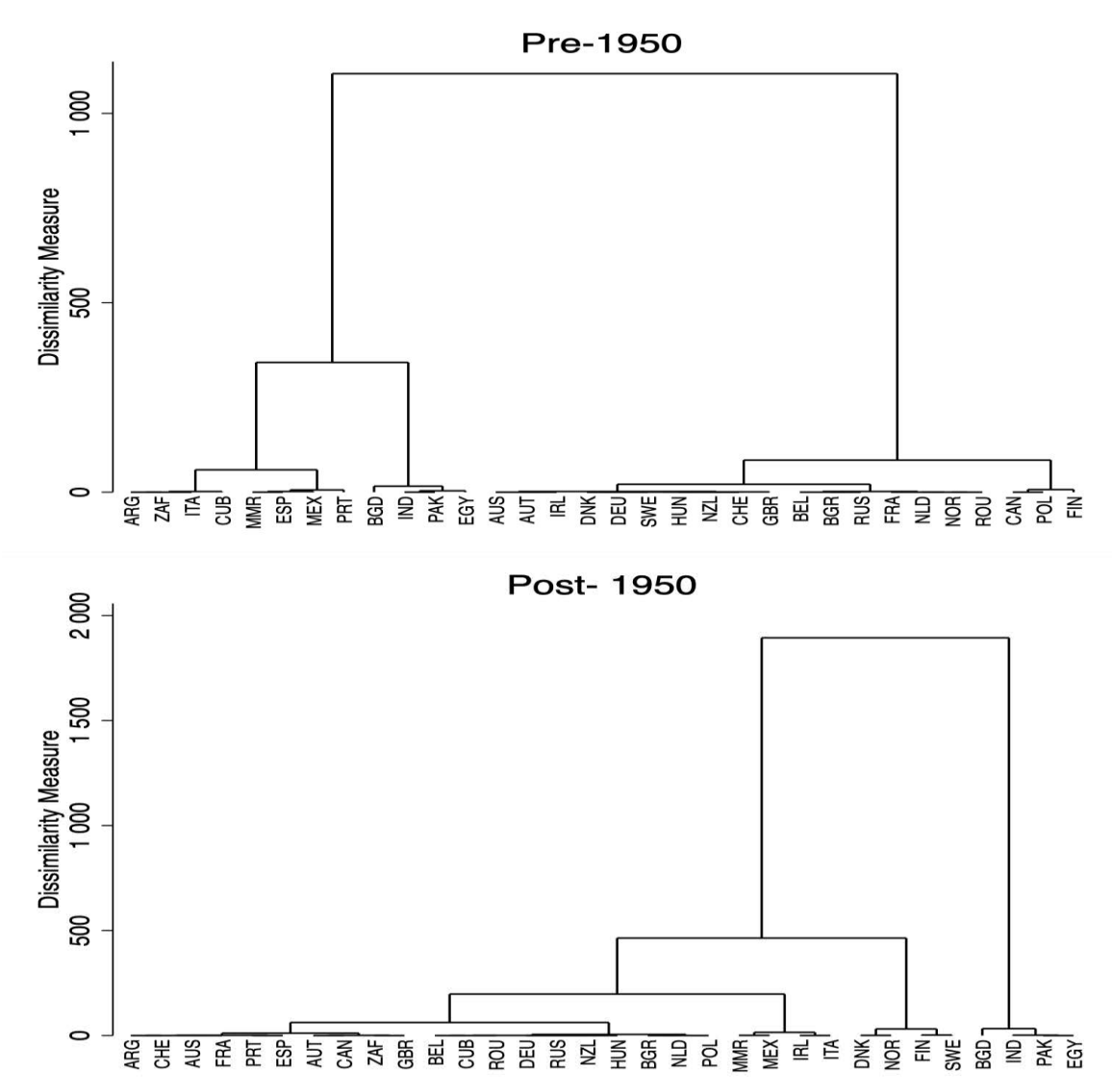
Correlation with GDP per capita

In recent decades, gender equality has received attention not only as a valuable development outcome in itself but also as a crucial contributor to long-term economic development. Figure 8.8 provides an illustration of the relation between gender equality and GDP per capita during the course of the 20th century. A positive correlation between the HGEI and GDP per capita is visible throughout the period. This positive relation is stronger in the first half of the 20th century, while it weakens thereafter. This also implies that a 10% increase in per capita GDP is associated with a 0.4 point increase in the HGEI in the earlier period, but to an increase of only 0.2 points in the latter period. It should however be remembered that many more countries are covered by the HGEI in the second half of the twentieth century than in 1900.

One interpretation of these findings is that they support the U-shaped hypothesis on the relationship between gender equality and economic development postulated by Boserup (1970[35]), who hypothesised that in the early phases of development patriarchal institutions limit both women's occupational opportunities and increase the gender gap. Goldin's U-shaped hypothesis may explain why, in Figure 8.8, a stronger positive relationship between HGEI and GDP per capita is observed in the early 20th century. However, the pattern mainly reflects higher country coverage after the 1950s.

Figure 8.8. HGEI and GDP per capita, 1920-2010

Decennial averages; logarithmic scale
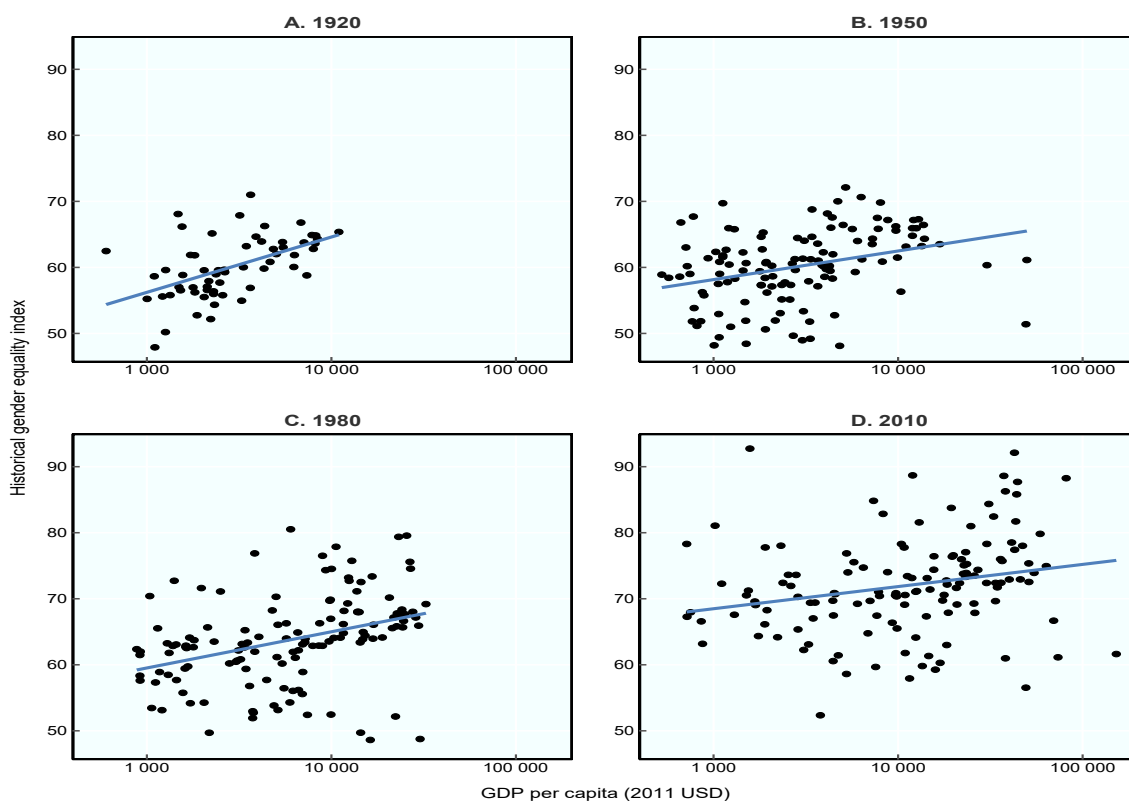

Note: Blue lines show the regression line.
Source: Clio-Infra, www.clio-infra.eu.

StatLink 🖳 https://stat.link/scb467

When limiting analysis to the 33 countries for which we have data over the whole 20th century, Figure 8.9 shows that the correlation between the HGEI and GDP per capita declines over time from a high of close to 0.8 in 1900 to under 0.5 in 1980 (with a slightly upward movement in the period between the two World Wars). In later years, an increase in the correlation coefficient in the 1980s and 1990s is followed by a small decline in more recent years.

Figure 8.9. Correlation coefficient between the HGEI and GDP per capita for 33 high-coverage countries, 1890-2010

Pearson correlation coefficient
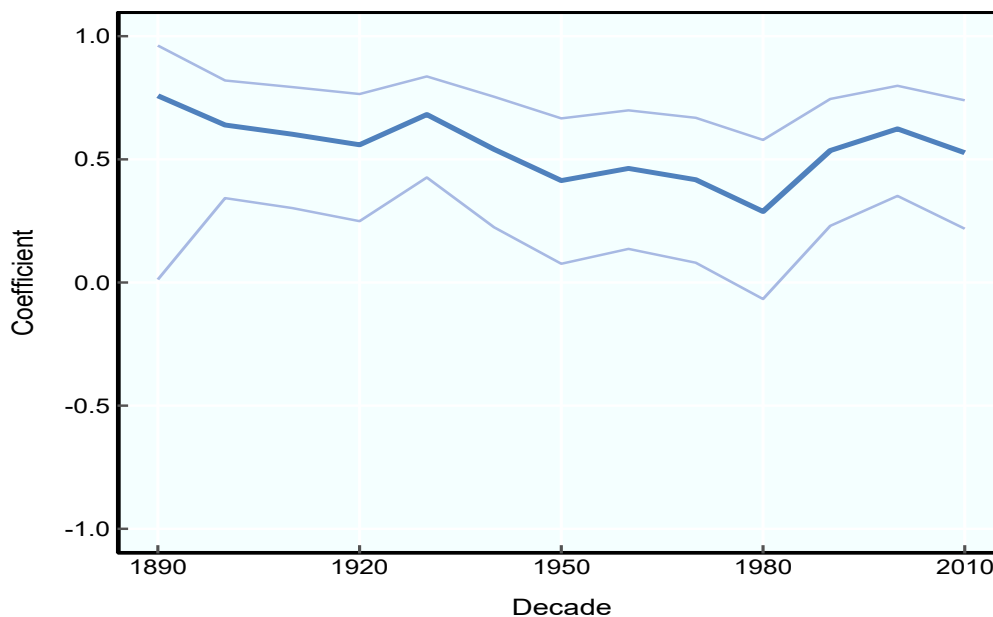
Note: The thick and thin lines depict the correlation coefficient and the 95% confidence interval, respectively.
Source: Clio-Infra, www.clio-infra.eu.

StatLink ⫘⫘⫘ https://stat.link/q6inge

Priorities for future research

This chapter has provided new evidence on global developments in gender equality over the 20th century. The aim was to improve our understanding of the progress towards gender equality and its drivers. We presented additional data on women's educational attainment and labour force participation, pushing coverage back to 1900. This chapter also presented three new historical indicators of women's position: gender differences in unemployment and in wages, and the share of female-headed households in the second half of the 20th century. We also extended our composite indicator, the Historical Gender Inequality Index (HGEI), back to the beginning of the 20th century.

Despite these additions, historical data on gender inequality remain limited. With regard to the economic position of women, our indicator on wages covers only a few countries and only a selected number of occupations. Work being conducted in Utrecht by the Race to the Bottom team, under the supervision of Elise van Nederveen Meerkerk, should provide additional sources for this measure in the near future, while work by Humphries and Weisdorf (2015[36]) and de Pleijt and van Zanden (2018[37]) has extended our knowledge of wages in earlier historical periods. This is a field where additional historical research would be valuable, including on measures capturing women's income and wealth.

Moreover, coverage of the HGEI prior to the 20th century remains limited to 32 countries across the world, which means that the regional trends presented in this chapter are based on only a few countries. In addition, our country coverage for the early 20th century is larger for the European countries and Western Offshoots than for the world's other regions. To achieve a more representative coverage, the collection of women's labour force participation data in the pre-20th century should be prioritised. Additional research into marriage ages, life expectancy and infant sex-ratios for the period before 1940 for non-European countries would allow extending our information further.

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Annex 8.A. **Additional evidence**

Annex Table 8.A.1. Data quality on the other gender indicators

	Western Europe	Eastern Europe	Western Offshoots	Latin America and Caribbean	Sub-Saharan Africa	Middle East and North Africa	East Asia	East Asia	South and Southeast Asia
Wages									
1950	2	2	2	2	2	2	2	2	2
1973	2	2	2	2	2	2	2	2	2
2008									
Female-headed households									
1973	2	2	2	2	2	2	2	2	2
2008	2	2	2	2	2	2	2	2	2
Parliamentary representation									
1820	1	1	1	1	1	1	1		1
1870	1	1	1	1	1	1	1		1
1913	1	1	1	1	1	1	1		1
1950	2	2	2	2	2	2	2		2
1973	2	2	2	2	2	2	2		2
2008	2	2	2	2	2	2	2		2
Age at first marriage									
1820	3	3	1	1	1	1	1		1
1870	2	3	2						
1913	2	2	2	2					
1950	1	1	1	1	1	1	1		1
1973	1	1	1	1	1	1	1		1
2008	1	1	1	1	1	1	1		1
Sex ratios among adolescents									
1820	2	2	2	2	2	2	2		2
1870	2	2	2	2	2	2	2		2
1913	2	2	2	2	2	2	2		2
1950	1	1	1	1	1	1	1		1
1973	1	1	1	1	1	1	1		1
2008	1	1	1	1	1	1	1		1

Annex Figure 8.A.1. Relation between the Historical Gender Equality index and the SIGI, GII and GGG in 2000
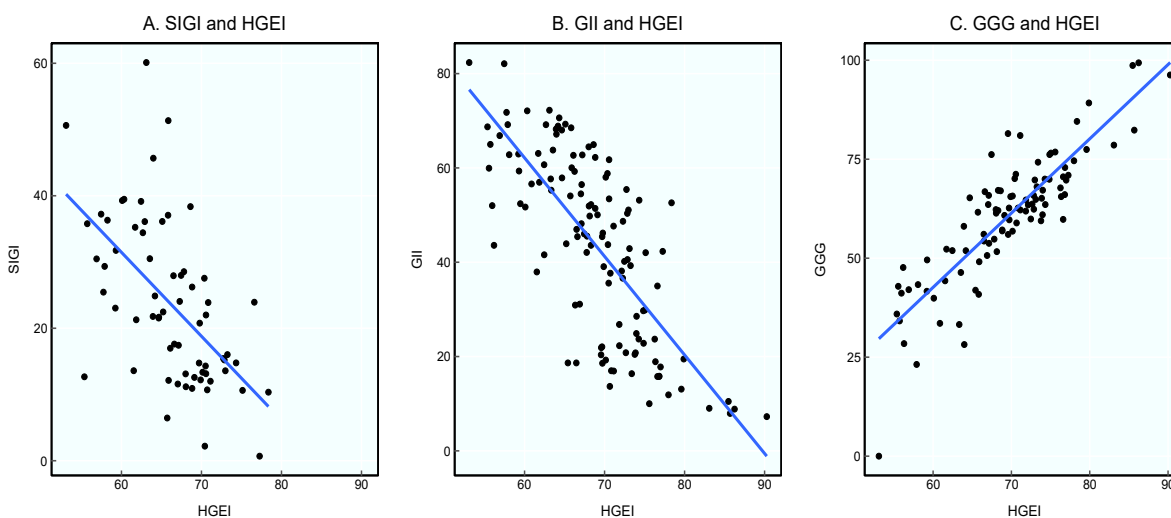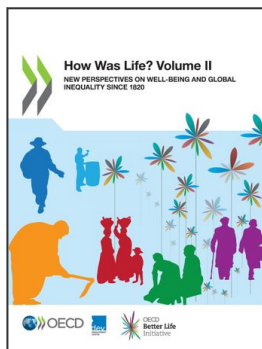

Note: Blue lines indicate regression fit.
Source: Clio-Infra, www.clio-infra.eu.

Note

[1] The two indicators are negatively correlated, as a higher score on the HGEI indicates more gender equality whereas a higher score on the SIGI refers to a context where institutions discriminate more against women.