Ship of Theseus: from ILO Standards to Outcome of Maternity Protection Policy

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Abstract

Previous research focuses on the question of whether international standards have prompted any improvement of labor and social standards by law or in practice. This paper complements the literature by showing that the way that international standards are translated and implemented at the national level matters as well. Using a novel historical database on paid maternity leave policies in 160 countries with a time series from 1883 to 2018, I document how informal sector workers in low- and middle-income countries (LMICs) fell by the wayside in the widespread adoption of the International Labour Organization (ILO) maternity protection standards. First, the analysis shows that while the adoption of the ILO Maternity Protection Conventions triggered the introduction and extension of maternity leave policies throughout the world, LMICs ignored the provision of social assistance benefits. Second, even when LMICs extended the coverage of maternity leave policies to the informal sector, the implementation constraints further hindered the access of women workers in the informal sector to maternity benefits.

Introduction

Founded in 1919, the International Labour Organization (ILO) has been long recognized as the most important standard-setter in the field of labor protection and social security (Langille, 2016: 477). Despite the ILO's strong emphasis on labor, its standards target *all* citizens, not just workers. The ILO proclaimed an ambitious goal to extend "social security measures to provide a basic income to all in need of such protection and comprehensive medical care" for the first time in its 1944 Declaration of Philadelphia, which was repeated in the Social Security (Minimum Standards) Conventions of 1952 (C102). Subsequent conventions and recommendations, covering various areas of social security – health care, old-age, disability, employment injury, unemployment, and maternity – have suggested a two-pillar social security system: social insurance for workers, and social assistance for the rest, to achieve universal coverage of social security.

However, the ILO has long been subject to criticism that its standard-setting activities benefited only workers in the formal sector, which meant that few in low- and middle-income countries (LMICs) would benefit from the spread of international labor standards (Boris, 2019; Seekings, 2008; Seidman, 2007).

Scholarly attention to the ILO's social security standards for *all* focused mainly on recent conventions, as LMICs have only started to adopt international standards that would address the needs of informal sector workers since the 2000s (Barrientos, 2011; Böger and Leisering, 2020; Deacon, 2013; Devereux, 2017; Hickey *et al.*, 2018; Leisering, 2018; Leisering and Barrientos, 2013; Seekings, 2019; von Gliszczynski and Leisering, 2016). Based on the marked resemblance between the recent international standards such as the Social Protection Floors Recommendation of 2012 (C202) and the Social Security (Minimum Standards) Conventions of 1952 (C102), Deacon (2013: 27) noted that the lack of social security coverage in LMICs is "perhaps not so much in the standards but in the way they were for decades interpreted and implemented." Although scholars provide evidence that supports Deacon's provocative thesis, showing that the impact of international standards does not reach workers in the informal sector in LMICs, as it and they are compromised at different stages of the policy process (Boris, 2019; Devereux, 2017; Fombad, 2013; Seekings, 2020), there has been no comprehensive effort to test this hypothesis. Using a new historical database of maternity leave policies (HDML) (Son *et al.*, 2020) with global coverage and extensive time series, this paper offers an innovative empirical test to fill the research gap.

In this paper, I focus on the ILO Maternity Protection Conventions (C3, C103, C183) and paid maternity leave. Paid maternity leave was the earliest social policy for women workers, which shapes women's economic empowerment by enabling mothers to maintain paid employment (Son and Böger, 2021). Despite the fundamental role of paid maternity leave, comparative welfare state research mainly focuses on the policy diffusion of traditional social policies that are geared toward the male breadwinner, neglecting (maternity) leave policies (Obinger *et al.*, 2013). Specifically, I argue that the ILO maternity protection conventions that contributed to the extension of maternity leave policies in the world did not, however, benefit informal sector workers in LMICs: due to the way these standards were interpreted and implemented. I built the HDML to capture the impact of the ILO Maternity Protection Conventions at different stages of the policy process. It measures legal standards of maternity leave policies in 160 independent states from 1883, when Germany adopted the first paid maternity leave policy in the world, until 2018. Leveraging these data, I employ a series of event history analyses that permit a comparison of the degree to which each ILO standard has been incorporated into national standards. Then, I examine whether there exists a substantial discrepancy between the level of generosity and entitlement of maternity laws and maternity expenditure in LMICs in comparison to high-income countries. Lastly, focusing on LMICs, I test whether women workers in the informal sector in LMICs would receive maternity benefits in practice if they are entitled to these benefits. The empirical evidence reveals that states introduced and extended maternity leave policies

shortly after the adoption of the ILO maternity protection conventions. However, most LMICs ignored the standard recommending the introduction of social assistance until the 1990s. Even once the statutory provision of maternity protection covered the informal sector, implementation challenges in LMICs further constrained the realization of ILO standards in this area.

This paper is organized as follows: in the next section, I briefly summarize the state of the art concerning the impact of ILO standards on laws and practices. It reveals that empirical research needs to examine the impact of ILO standards beyond the question of whether ILO standards prompted any improvement of labor and social standards by law or in practice, as the selective application of ILO standards in the formal sector brings about no substantial improvement on worker rights in LMICs, given the large size of the informal sector. The third section introduced the ILO Maternity Protection Conventions and the HDML. This is followed by analyses of the quantitative data, from which I conclude that the diffusion of the ILO standards resembles the Ship of Theseus, a Greek metaphor that calls into question one's identity when major components decay or are replaced along its journey. The ILO's early ambition to provide basic social security to *all* is hardly found in the Global South after its standards were interpreted and implemented at the national level.

The compromised impact of ILO standards on laws and practices

There is substantial literature on the impact of the ILO's global standard-setting, but this has yielded contrasting results depending on whether the focus is on the ILO's impact on legislation or outcomes. Some studies find that states' exposure to international labor standards through membership in the ILO, states' participation in the International Labour Conference, and ratification of ILO conventions, increases the probability of the introduction of social policies regardless of the level of economic development or types of political regimes (Böger and Leisering, 2020; Kim, 2010; Schmitt *et al.*, 2015; Usui, 1994). In a similar vein, shortly after the ILO specifies global blueprints of certain labor or social policies in the form of international standards, states have been shown to adopt the kind of policies identified in the conventions (Berkovitch, 1999). However, others fail to find evidence that states increase social expenditure or improve labor and social rights in practice after the ratification of ILO conventions (Peksen and Blanton, 2017). This is especially the case for LMICs (Boockmann, 2010; Strang and Chang, 1993). For example, after finding that the ratification of ILO conventions did not contribute to the expansion of social expenditure in LMICs, Strang and Chang (1993) argue that their empirical results contradict the conclusion of numerous articles in the International Labour Review that ILO conventions substantially influence the adoption of national policies in ratifying countries.

One possible explanation for the discrepancy is that the impact of ILO standards is compromised at different stages of the policy process. A promising vein of research points out that workers in informal and less-recognized sectors are left out of the application of ILO standards due to the institutional features of welfare systems in LMICs and the limitation of the ILO. Reflecting their general tendency to provide social security only to privileged minorities (Haggard and Kaufman, 2008; Holland, 2017), LMICs tend to 'translate' or 'vernacularize' international standards in such a way as to narrow the scope of the application by not acknowledging workers in the informal sector, such as peasants and the self-employed urban poor, as "workers", or by using the loophole in international standards that allows states to apply social security systems for *all* only 'in accordance with national circumstances' (Boris, 2019; Deacon, 2013; Seekings, 2019; Seekings, 2020). The ILO was also negligent in placing the informal sector under the social security system, as it did not realize the significance of the informal sector in LMICs until the 1990s. Although the 1944 Declaration of Philadelphia included a provision for social assistance, at the time this was seen as a limited measure to cover children, invalids, aged persons, widows, and the self-employed (Devereux, 2017), rather than as a means to include those in the large informal sector in LMICs. The first time the ILO coined the term 'informal sector' was at the ILO World Employment Mission to Kenya in 1972, before which the informal sector in LMICs was treated within the ILO as a 'temporary problem' (Bangasser, 2000). Since the ILO expected that the informal sector would disappear along with economic development as it had in the high-income countries (van Ginneken, 1999: 3), it prioritized social insurance over a social assistance. Social assistance has rarely been mentioned in its technical assistance activities (Seekings, 2008) and has never been adopted as a resolution by the International Labour Conference from 1919 until 2019.[1] It was only in the 1990s that the ILO began to adopt conventions that explicitly targeted informal sector workers such as the Home Work Convention of 1996 (C177), reflecting a change in the ILO's strategy from eliminating informal employment to broadening the coverage of the social protection system to the informal sector (Boris, 2019: 157–165).

Even when LMICs extended coverage to informal sectors, they often failed to enforce labor and social policies due to high regulation costs and low state capacity (Basu and Van, 1998; Boockmann, 2010; Bosch *et al.*, 2013; Fombad, 2013; Seidman, 2007). For instance, in Latin America, employers in micro-enterprises are not motivated to register their employees in social security systems because states tend to regulate only middle- or large-sized firms in the formal sector due to the large cost of monitoring informal and illegal labor markets (Bosch *et al.*, 2013: 74–75). The ILO has not been successful in amending the implementation constraints in LMICs. Its monitoring involves comparing the text of conventions and national laws rather than using statistics on policy

outcomes, and, therefore, it is less likely to notice non-compliance in the stage of policy implementation (Boockmann, 2010: 682). Even if implementation failure is detected, ILO standards remain for the most part 'soft' laws without sanctioning power. The most powerful instrument at its disposal is the complaint procedure which enables trade unions to file complaints about persistent violations directly to the ILO. If states refuse to accept the Commission of Inquiry's proposed steps, the ILO could take cases to the International Court of Justice. However, this procedure has rarely been employed: the court had seen only 26 cases by 2007 (Hartlapp, 2007), and by 2020, only one complaint related to the Maternity Protection Conventions had been submitted.

The selective application of international labor standards in the formal sector means that most labor forces in LMICs would not benefit from the spread of the standards. Furthermore, it may have perverse incentives, forcing workers into the informal sector to avoid burden of paying contributions as well as making the poor subsidize social insurance benefits for formal sector workers through taxes and higher prices (Levy, 2008; Seekings, 2008). Yet, no study has systematically assessed the translation and implementation of ILO standards at the national level. This paper aims to fill the gap using paid maternity leave policy as an example. Historically, women used the ILO to pressure states into improving the maternity protection policies, compensating for their lacking political power within domestic political institutions (Berkovitch, 1999; Boris, 2019), although studies that focus on the recent expansion of leave policies put more emphasis on women's political representation at the national level (Htun and Weldon, 2018; Kittilson, 2008; Morgan, 2013). At the same time, women in LMICs constitute a large proportion of those engaged in precarious labor, such as domestic workers, home-based workers, and family workers: 92.1 percent of employed women in low-income countries and 84.5 percent of employed women in lower-middle-income countries are engaged in informal employment (International Labour Organization, 2018). Since women's economic rights are treated as secondary to their family responsibilities, women manage this tension by engaging in self-employment and other forms of informal work. If Deacon's thesis is correct, the impact of the ILO Maternity Protection Conventions would not reach most women workers in LMICs due to the way that states translate and implement the ILO standards. Building on these insights, I suggest the following propositions:

1. Although the ILO conventions triggered legislative change in maternity leave policies, LMICs tend to ignore international standards that concern the broadening of social security coverage to include the informal sector.
2. There is a substantial discrepancy between law and practice in LMICs especially regarding those engaged in the informal sector.

TABLE 1. Five components of the standards of the ILO Maternity Protection Conventions

	C3 (1919)	C103 (1952)	C183 (2000)
Benefit amount	Not specified (Article 3 (c))	2/3 of previous earnings (Article 4§6)	2/3 of previous earnings (Article 4§3)
Benefit duration	12 weeks (Article 3 (a), (b))	12 weeks (Article 3§2)	14 weeks (Article 4§2)
Coverage	Industrial, non-industrial (commercial) undertakings (Article 1)	Industrial, non-industrial (commercial), agricultural undertakings (Article 1)	Industrial, non-industrial (commercial), agricultural, atypical undertakings (Article 2§1)
Financing method	social insurance or public fund (Article 3(c))	social insurance or public fund (Article 4§4)	social insurance or public fund (Article 4§8)
Introduction of social assistance	None	social assistance (Article 4§5)	social assistance (Article 6§6)

The ILO Maternity Protection Conventions

The ILO had been the only standard-setter concerning maternity protection for women workers until the European Union implemented its own standards in 1992 (Pregnant Worker Directive 92/85/EEC). Other international organizations had long focused their attention on women as mothers rather than as income earners (Boris, 2019: 92). For instance, the Food and Agriculture Organization emphasized mother and infant health while the World Bank did not refer to women in its economic productivity plans for LMICs until the 1970s. In contrast, the ILO contributed to the extension of the statutory support for pregnant women workers in both ratifying and non-ratifying countries (International Labour Organization, 1965).

The ILO adopted the first Maternity Protection Convention (C3) at its very first conference in 1919 and has since updated the standards for maternity protection every three decades in two consecutive conventions (C103, C183), in 1952 and 2000, respectively. The ILO Maternity Protection Conventions include the five main standards, as Table 1 shows: benefit amount, benefit duration, coverage, financing method, and introduction of social assistance scheme. The ILO included standards that addressed maternity protection measures for *all* after the 1944 Declaration of Philadelphia. The second Maternity Protection Convention required states to broaden the coverage of maternity benefits to all employed women, including domestic workers and farmworkers, and to introduce a social assistance scheme for women who do not qualify for maternity insurance. However, the ILO succumbed to LMICs' complaints that it would be too costly to expand the coverage of maternity protection to all employed women, allowing states to adopt this standard in accordance with

the level of national economic development (Boris, 2019: 75). Given that the non-compliance of ILO standards with the compromise formulation is mostly taken for granted (Maupain, 2013), the provision of social assistance benefits was practically the only standard that pursued the universal coverage of maternity protection until 2000. The third convention consolidated its goal of broadening the coverage of maternity protection to all women by lifting the compromise formulation of the coverage standard and continuing to include the provision of a social assistance scheme.

The historical database of maternity leave policies in the world (HDML)

I built the HDML to trace the impact of the three ILO Maternity Protection Conventions at different stages of the policy process. It covers maternity leave policies in 160 independent states from 1883 to, 2018. The database includes five variables reflecting the five major components of the standards of the ILO Maternity Protection Conventions (see Table 1). Since the unit of the HDML is a country per year, in the case that multiple parallel maternity leave programs exist in a country (e.g. one for wage earners and the other for salaried employees), the program that covers the largest share of the population was chosen, i.e. wage earners, if population$_{wage\ earner}$ > population$_{salaried\ employees}$), but included all maternity leave programs in the coverage variable. The database was constructed using various sources: in particular, the ILO Legislative Series, the ILO reports to monitor implementation of the three Maternity Protection Conventions, and the U.S. Labor Department Social Security Programs Throughout the World reports (SSPTW) – the major sources of information about the historical development of leave policies (Gauthier and Koops, 2018: 12). Existing databases were used for verifying the validity and reliability of the HDML.

This paper draws on various measures from the HDML to capture the exclusion of informal sector workers in LMICs from the application of the ILO maternity protection standards in three steps. First, I built measures of the year when countries improved the five standards of maternity protection that are stated in the ILO Maternity Protection Conventions. Event history analyses allow us to examine whether states ignored the provision of social assistance benefits while incorporating other standards into domestic laws shortly after the adoption of the conventions. Since the ILO Maternity Protection Conventions have pursued the universal coverage of maternity benefits through the provision of social assistance benefits since 1952, the omission of the standard would indicate that states translated the ILO standards in a way to exclude informal sectors. Secondly, I built a composite generosity score that measures the generosity and entitlement of maternity leave laws. By testing a conditional effect of country income on the discrepancy between the generosity score of maternity leave laws and maternity expenditure, I investigate whether there exists a substantial discrepancy between laws and practices in LMICs in comparison to high-income

countries. Lastly, I examine whether the large discrepancy between laws and practices in LMICs comes from the informal sector. I calculated two *expected coverages* that estimate the proportion of women workers who are entitled to maternity leave benefits by law with different assumptions on the enforcement of maternity protection law in the informal sector. The first *expected coverage* assumes that if women workers in the informal sector are entitled to maternity leave benefits, or if states provide social assistance benefits, all women workers in the informal sector would receive the benefit, while the second assumes that no women workers in the informal sector would have access to maternity leave benefits despite their legal entitlement. The comparison of which *expected coverage* better predicts coverage in practice would allow us to detect the implementation constraints in the informal sector.

Empirical Analysis
Impact of the ILO conventions on legislative change

I use measures of the year when 160 independent states improved the five standards of maternity protection through the introduction or expansionary reforms of maternity protection policies from 1883 to 2018 as dependent variables. The expansionary reform in this article does not necessarily indicate the formal enactment of maternity leave legislation. States often change the substance of the legal conditions of maternity leave through administrative regulations instead of legislation, particularly in the case of the benefit amount or benefit duration. Conversely, the enactment of new maternity laws sometimes does not change any substance of the five standards of maternity leave. More specifically, I use five dichotomous measures of whether the five maternity protection standards, as stated in the ILO Maternity Protection Conventions, are extended at the national level. For instance, the amount variable indicates incidences when states extended the benefit amount of maternity leave. The amount variable, duration variable, and coverage variable include the first adoption of paid maternity leave since benefit amount, benefit duration, and coverage were extended in this incidence. In contrast, the financing variable and the social assistance variable do not include all adoptions of maternity leave but count only the incidences when specific types of social security systems, e.g. social insurance and social assistance, were introduced.

Figure 1 shows the share of countries per year that extended the provision of maternity protection in terms of the five standards of the ILO Maternity Protection Convention. The figure reveals a substantial variation of the five international standards in the degree that states incorporated them into domestic laws. While we can observe more than 250 events in which states extended the amount, duration, or coverage of maternity benefits, only 83 countries
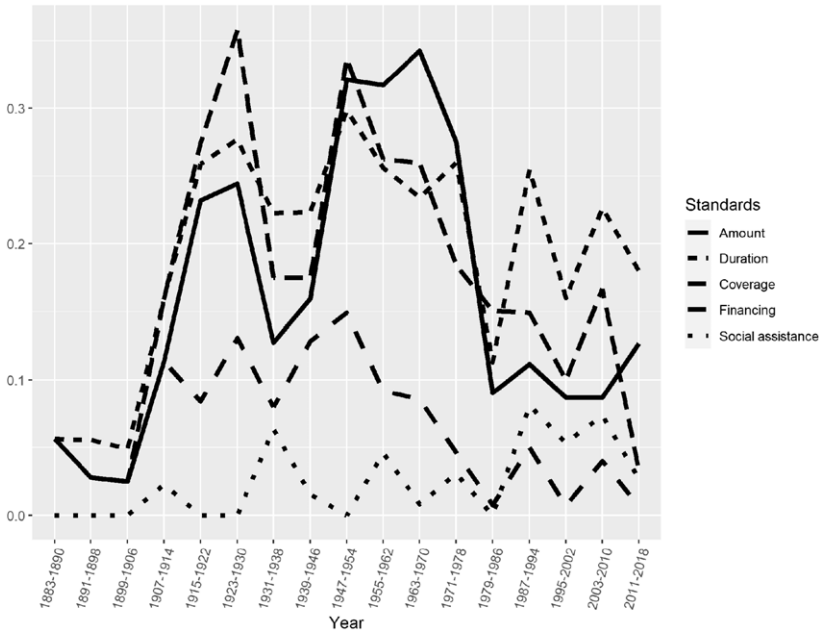
Figure 1. Share of countries per year that extended the provision of maternity protection by standards of paid maternity leave

changed their financing method to social insurance, and just 50 countries introduced a social assistance program.

To systematically analyze the impact of the ILO conventions on the timing of the extension of maternity protection policies, I estimate a Cox proportional hazards model with standard errors, adjusted for clustering in countries. I use two types of event history analyses, a recurrent and a non-recurrent, depending on the maximum number of legislative changes per standard. Namely, states extend benefit amount, benefit duration, and coverage more than once to conform to the ILO standards that are updated every three decades, while states transition the financing method of maternity leave benefit from employer liability to social insurance or introduce social assistance schemes only once. The countries in recurrent analyses are considered until 2018 while the countries in non-recurrent analyses are considered until they introduced social insurance or social assistance. The number of countries in non-recurrent analyses is also smaller than the one in recurrent analyses due to the cases that predecessor states (e.g. colonies, USSR, and Yugoslavia) had already institutionalized social insurance or social assistance, reflecting the exclusion of dependent states from the empirical analyses. Although the main research interest of this paper is the influence of ILO conventions on independent states' behavior, I acknowledge that this exclusion would induce underestimation of colonial experience's

influence on social policy expansion in former colonies, many of which have introduced social policies during their colonial time (see Appendix 1 for details). The recurrent event history analysis is stratified by how many reforms each country has already adopted: since the logic behind the timing of the first and the fifth legislative change, for instance, would be different (Box-Steffensmeier and Jones, 2004: 160–161). To test the robustness of the results in terms of temporal dependency, I estimate logistic regressions with a cubic polynomial approximation (Carter and Signorino, 2010).

The key explanatory variable is the three ILO Maternity Protection Conventions. Based on prior research on the effectiveness of ILO conventions (Berkovitch, 1999; Helfer, 2006), I expect that states will extend provisions of maternity protection shortly after a large number of states have initial access to ILO conventions – namely, when member states submit a convention to the competent national authorities within eighteen months from the adoption of the convention. Thus, the ILO Convention variable identifies the years 1921, 1954, and 2002 as dichotomous variables. I set a five-year period during which the effects of ILO conventions can unfold because it is expected that the effects of the conventions would fade as the salience of the maternity protection issue, awakened by the submission of the conventions, fades within a reasonable period. I include several control variables to take alternative determinants of the initiation and extension of maternity leave policies into account. The regression models include ILO membership, logged GDP per capita, the change in total fertility rate, political regime type (democracy), initiation of other welfare programs, religion, and colonial heritage (see Appendix 2 for operationalization of variables).

Are the ILO Maternity Protection Conventions influential in the extension of maternity protection policies in the world? That seems to depend on the standard. Shortly after states have access to newly updated ILO standards, they tend to adopt the standards into domestic laws concerning benefit amount, benefit duration, coverage, and financing method as shown in Table 2. However, Model 5 shows that the ILO Maternity Protection Conventions do not influence the timing of the introduction of social assistance schemes. Particularly, LMICs tend to omit the standard that could benefit informal sector workers. Among 20 countries that adopted social assistance schemes before the 1990s, Chile was the only LMIC. Many LMICs began to introduce social assistance programs for pregnant women and their infants only after the 1990s, regardless of the adoption of the ILO conventions, as Figure 1 shows. This trend may reflect a change in the ILO's strategy from eliminating informal employment to broadening social security coverage to cover informal sector workers in the 1990s, prior to which the ILO was also negligent in applying its standards in informal sectors in LMICs. For instance, the ILO's lax enforcement of social assistance standards gave LMICs sufficient room to ignore this element. In its observations on

TABLE 2. Event history analyses: legislative changes of maternity protection policies

	(1)	(2)	(3)	(4)	(5)
					Social assistance
	Amount	Duration	Coverage	Financing	tance
ILO Convention 003	1.764*	2.011*	1.739*	2.359	
	(2.03)	(2.34)	(2.09)	(1.74)	
ILO Convention 103	2.843***	2.234**	2.604***	2.954*	1.883
	(4.37)	(2.64)	(3.49)	(2.27)	(0.81)
ILO Convention 183	0.449	1.050	1.322	1.528	1.284
	(−1.81)	(0.17)	(0.97)	(0.70)	(0.42)
ILO membership	2.156***	1.840*	2.440***	2.035*	12.24*
	(3.63)	(2.49)	(3.71)	(2.21)	(2.41)
Logged GDP per capita	0.934	1.169**	1.016	1.230	1.248
	(−1.06)	(2.81)	(0.25)	(1.73)	(1.56)
Change of total fertility rate	3.317	1.191	1.211	2.514	0.690
	(1.89)	(0.31)	(0.29)	(1.56)	(−0.30)
Democracy	1.346*	0.763	0.881	0.904	2.715**
	(2.22)	(−1.95)	(−0.84)	(−0.37)	(2.93)
Initiation of other welfare programs t-1	1.045	1.648*	1.862**	2.370***	3.008***
	(0.17)	(2.46)	(3.23)	(3.88)	(4.81)
Religion (Christianity as reference group)					
Islam	1.012	0.730*	0.634**	0.495*	0.241*
	(0.07)	(-1.97)	(-2.80)	(−2.07)	(−2.33)
Other religions	0.714	0.705	0.830	0.556	0.414
	(−1.61)	(-1.79)	(-0.89)	(−1.71)	(−1.55)
French colony	0.801	0.337*	0.470*		
	(−0.89)	(-2.56)	(-2.49)		
British colony	1.072	0.917	0.912		
	(0.38)	(-0.58)	(-0.60)		
Observations	12267	12267	12267	5433	10588
Number of countries	160	160	160	118	159
Number of events	257	314	259	83	50
Log-likelihood	−870.758	−979.889	−894.151	−316.566	−179.296

*$p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

non-compliance, the ILO did not bring up the issue of social assistance until 1982, when it suggested that the Bolivian government should try to introduce social assistance or lower the qualification period.[2]

The results remain robust after changing estimation methods to logistic regressions with a cubic polynomial approximation (see Appendix 3). Taking a brief look at the control variables, states tend to adopt or extend maternity leave policies in a similar timeframe to the introduction of other welfare programs. While ILO members extend paid maternity leave policies more frequently than non-ILO members, Islamic countries improve the statutory support for working women to maintain paid work and maternal duty less

frequently than majority-Christian countries. It is also notable that the benefit duration and coverage of maternity protection of former French colonies was stagnant after independence, as France transposed its high standards, 14 weeks of maternity leave for all employed women, onto its colonies during colonial times (Schmitt, 2015; Son, 2022).

The gap between laws and practices in LMICs

To examine whether there exists a large gap between laws and practices in LMICs in comparison to high-income countries, I tested a conditional effect of country income on the discrepancy between the level of generosity and the entitlement of laws and expenditure. I drew on the generosity score from the HDML that measures entitlement and generosity of maternity leave laws in each country. I used the equation of the generosity scores of the Comparative Welfare Entitlements Dataset (CWED) but with an adjustment. Originally, the generosity scores of the CWED standardize and aggregate various *de jure* and *de facto* conditions of welfare programs using (1) benefit amount, (2) benefit duration, (3) contribution period, and (4) *de facto* coverage (Scruggs, 2014). Since the research interest of this paper lies in capturing the discrepancy between laws and practices, I substituted *de facto* coverage to *de jure* coverage that measures in which employment sectors workers are entitled to maternity leave benefits. Following the standards of the ILO Maternity Protection Conventions, coverage is categorized into four sectors: industrial, commercial, agricultural, and atypical. *De jure* coverage scores are generated through the addition of these four categories, yielding a variable ranging from 0 to 4, 0 indicating the absence of maternity leave policy, and 4 indicating full coverage of the four sectors. The adjusted equation follows:

Maternity generosity score = z(Benefit replacement rate) + z(Benefit duration weeks) - z(Benefit contribution weeks) + z(*De jure* coverage categories)

Regarding dependent variables, the ILO Social Security Expenditure Database provides maternity expenditure as a percentage of GDP in mostly LMICs while the OECD expenditure database provides expenditure data for high-income countries. Although the OECD expenditure indicator provides the expenditure on cash benefits of both maternity and parental leave and the ILO expenditure indicator concerns only maternity leave, the Pearson correlation between the OECD and ILO indicators shows high and significant correlation in overlapped cases ($r = .8$, $p = .0002$). To operationalize the conditional hypothesis, I construct interaction terms between GDPs per capita and the generosity score of maternity leave policies. Although the HDML provides generosity scores for 160 countries with long time periods, the expenditure data only allows for the inclusion of 52 countries. The restricted samples include 27 high-income countries, 24 middle-income countries, and 1 low-income

country, so a low proportion of low-income countries may cause the downward-biased estimation of a gap between laws and practices (see Appendix 4 for the full list of countries and their attributes). The period coverage of the dependent variable is also limited, covering only one or two years per country between 1989 and 1999. Thus, I use the average maternity expenditure from 1989 to 1999 as dependent variables and include independent and control variables in the standard of 1995 in OLS cross-section models.

As 'dependent variable problem' studies in the field of comparative welfare research argue, demand factors: such as the ratio of the elderly population and the unemployed, may blur the correlation between the generosity score and welfare expenditure (Clasen and Siegel, 2007). Therefore, all models include demand factors: such as the total fertility rate and the ratio of female labor participation as control variables. Regression models also include many additional variables that are considered by comparative welfare state research as important variables of welfare expenditure. The Dublin-Watson test found no autocorrelation problems and the VIF scores also proved that no variables meet the conventional VIF threshold of 10. However, the Breusch-Pagan test revealed that one of the regression models has the heteroscedasticity problem. Since the presence of heteroscedasticity makes the OLS standard errors incorrect, I employed robust standard errors in the model.

The regression analyses capture a large discrepancy between law and practice in LMICs. Model 3 in Table 3 shows that generosity scores in LMICs do not correspond to maternity expenditure even after controlling for demand factors, while Model 2 shows a tight link between generosity and expenditure in high-income countries. Evidence from Model 4 further supports the conditional argument. The interaction effect variable between GDP per capita and maternity generosity score is positive and statistically significant ($\beta = .040$, p $= .013$), implying that the higher GDP per capita a country has, the more tightly linked the generosity of maternity leave policies will be with maternity expenditure. Figure 2 plots the predicted value of maternity expenditure on maternity generosity score at different levels of GDP per capita. The plot clearly shows that maternity generosity score is positively correlated with maternity expenditure with a 95 percent confidence interval in high-income countries (1 standard error above the mean of logged and scaled GDP per capita), whereas the relationship is unclear in low-income countries (1 standard error below the mean).

The gap between laws and practices in the informal sector

To capture the gap between coverage in laws and practices in the informal sector, I calculate *expected coverage* based on the HDML to estimate the proportion of women workers entitled to maternity leave benefits by laws with which I compare coverage in practice. I multiply the above-mentioned *de jure* coverage, the

TABLE 3. OLS regression analysis: maternity expenditure

	Maternity expenditure in percentage of GDP			
	OLS		Coefficient test	OLS
	All	High-income	LMICs	All
	(1)	(2)	(3)	(4)
Generosity score	0.028 (0.018)	0.047* (0.025)	−0.004 (0.025)	0.022 (0.017)
Total fertility rate	−0.066* (0.039)	0.015 (0.149)	−0.106*** (0.037)	−0.056 (0.037)
Female labor participation rate	0.008*** (0.003)	0.015** (0.006)	0.003 (0.002)	0.007*** (0.003)
Democracy	−0.080 (0.109)		−0.050 (0.073)	−0.023 (0.105)
Logged and scaled GDP per capita	0.025 (0.051)	0.080 (0.105)	−0.167** (0.063)	0.030 (0.048)
Logged and scaled GDP per capita*generosity score				0.040** (0.016)
Constant	−0.001 (0.217)	−0.666 (0.391)	0.141 (0.112)	−0.054 (0.206)
Observations	52	27	25	52
R²	0.324	0.410	0.493	0.412
Adjusted R²	0.251	0.303	0.359	0.333

Note: Model 2 does not include polity as all high-income countries are democratized. *p<0.1; **p<0.05; ***p<0.01
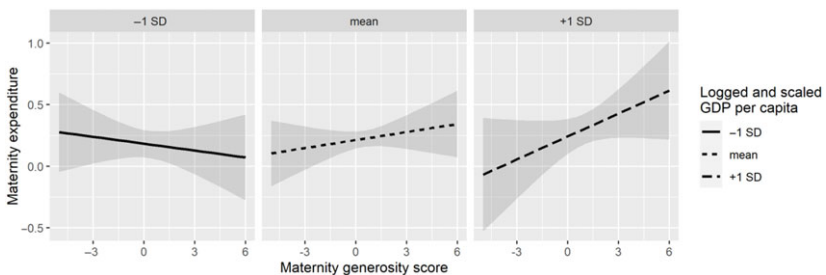

Figure 2. Predicted maternity expenditure on maternity generosity score by GDP per capita

variable that measures in which sectors women workers are legally entitled to maternity leave benefits, with the ratio of female employment in each employment sector of all female employment to calculate the *expected coverage* of maternity leave. However, a special problem arises when calculating the *expected coverage* of the informal sector: while most legislation covers all employees in

industrial, commercial, or agricultural sectors without disaggregating them into a detailed list of occupations, no maternity leave policies in the world cover all informal sectors. The expansionary reforms regarding informal sector workers are gradual, extending from one group (e.g. self-employed) to another group (e.g. domestic workers). Since no data exists regarding the proportion of female employees in disaggregated types of informal employment, I built two *expected coverage* indicators that embed two "extreme" assumptions: (1) all informal sector workers are covered if a maternity leave policy covers at least one informal sector or if states provide social assistance benefits; and (2) states would not enforce maternity leave laws in the informal sector. For example, if a maternity leave policy covers female employees in industrial, commercial, and agricultural sectors, as well as domestic workers, the first *expected coverage* indicator would be calculated as 100 percent. The second *expected coverage* indicator, by contrast, would be calculated as "(ratio of female employment in industrial, non-industrial, agricultural sector)*(1-ratio of female employment in informal sector)." Here, the ratio of informal sector workers is not simply deducted because the informal sector is a terminology based on types of employment rather than sectoral classification. The aggregated ratio of women workers in industrial, commercial, and agricultural sectors is 100 percent. The comparison of which *expected coverage* predicts coverage in practice would allow us to better detect the implementation constraints in the informal sector.

I use the number of contributors of maternity leave insurance and registered people within the social assistance scheme as coverage in practice (International Labour Office, 2010: 144–149). It measures the number of *potential* beneficiaries of maternity benefits and does not perfectly capture the number of *actual* beneficiaries. The number of *actual* beneficiaries is usually lower than the number of contributors as employers may refuse to pay maternity benefits to women workers who are legally eligible for maternity benefits due to lack of inspection and weak collective power (Boris, 2019). Unfortunately, comparable data about the *actual* beneficiaries across countries do not yet exist. Hence, the empirical estimates on the link between coverage in law and practice may be downward-biased, as our alternative measures count only the cases in which women workers are not registered in maternity protection programs or give up contributing insurance. Nonetheless, case studies on implementation constraints in the informal sector argue that a large proportion of informal sector workers may not even be registered in the social insurance system due to additional costs for employers (Bosch *et al.*, 2013). The ILO provides data on the number of *potential* beneficiaries of 90 countries in 2010, thus the case number in the empirical analysis decreases (see Appendix 4 for the full list of countries and their attributes). As the indicator is composed of categorical values (0-9, 10-32, 33-65, 66-89, 90-100), I employ ordered logistic regressions but with a modification. The extremely low proportion of LMICs that reached near-universal
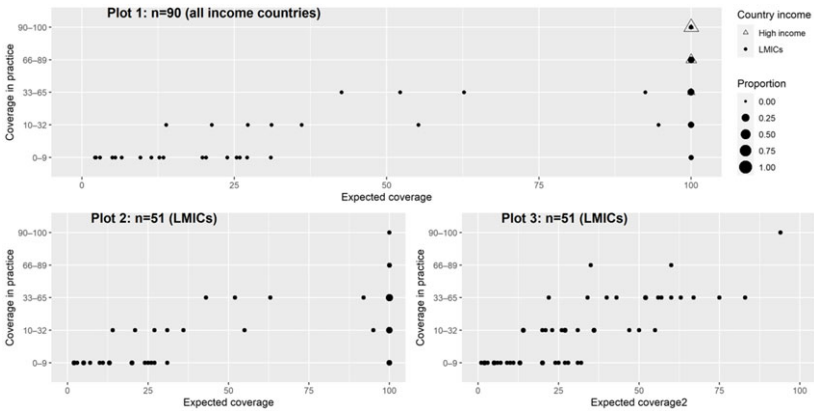
Figure 3. Bivariate scatterplots of two *expected coverages* and coverages in practice

coverage makes it impossible to test the proportional odds assumption. Therefore, I merge the two categories of 66-89 and 90-100. Brant tests revealed that the ordinary logistic regression models with the modified dependent variable do not violate the proportional odds assumption.

Figure 3 shows three bivariate plots of the *expected coverage* of maternity protection policies and coverage in practice with different sample sizes. While Plot 1 shows the patterns of the first *expected coverage* in all 90 countries, Plots 2 and 3 show correlations between two expected coverage variables and coverage in practice in 51 LMICs. The sample size decreases further in Plots 2 and 3 due to limited coverage of the informal employment data that is required to build the second *expected coverage*. While the limited samples of the earlier OLS regression analyses included disproportionately small numbers of low-income countries, the distribution of country income is relatively balanced in this sample that includes 19 upper-middle-income countries, 20 lower-middle-income countries, and 12 low-income-countries. The size of points shows the proportion of countries by country income group.

Plot 1 shows that women workers in all sectors were legally entitled to maternity benefits in most countries – namely, 62 of 90 countries in 2010. All high-income countries covered female employees in the industrial, non-industrial, and agricultural sectors, as well as women workers in at least one of informal sector. Maternity protection policies in the majority of LMICs, 36 of 64 countries, provide the same level of legal coverage. Only six LMICs exclude female employees in the agricultural and informal sectors from their maternity insurance system, of which two countries provide social assistance benefits. However, in practice, high-income countries are separated from LMICs by a wide gulf in terms of coverage of maternity benefits. While only 9 of 26 high-income countries fail to reach 100 percent of coverage in practice,

TABLE 4. Ordered logistic regression analysis: coverage in practice

	Coverage in practice	
	(1)	(2)
Expected coverage	0.018	
	(0.012)	
Expected coverage2		0.074***
		(0.024)
Total fertility rate	−0.501	−0.384
	(0.445)	(0.433)
Logged and scaled GDP per capita	2.818***	1.959**
	(0.846)	(0.983)
Democracy	−0.579	0.531
	(0.905)	(0.820)
Observations	51	51
McKelvey & Zavoina R²	0.736	0.777

Note: *p<0.1; **p<0.05; ***p<0.01

no LMICs, except Latvia and Serbia, achieve universal coverage. The median of coverage in practice in LMICs is between 10 to 32 percent of employed women, while the median for high-income countries reaches 90 to 100 percent. Less than 9 percent of women workers in one-third of LMICs would potentially receive maternity benefits.

Plots 2 and 3 demonstrate that the second *expected coverage* predicts the coverage in practice more precisely. The median of the second *expected coverage* (27 percent) matches better with the median of coverage in practice (10-32) than the median of the first *expected coverage* (63 percent). For instance, the second *expected coverage* predicts that 6 percent of working women would be eligible for maternity benefits in Cambodia even if the maternity protection laws cover all employment sectors including handicraft establishment and self-employment. Only 0 to 9 percent of working women would potentially receive maternity benefits. The results of ordinary logistic regression models that control for additional variables in Table 4 provide further evidence that women workers in informal sectors are not likely to receive maternity benefits, regardless of whether the statutory provision of maternity protection covers the informal sector.

Conclusion

As the most prominent standard-setter in the field of labor and social policy, the ILO has long been subject to comparative welfare studies. Previous empirical research, however, fails to document the nature of the ILO's 'soft power'. They examine either the impact of ILO conventions on legislative changes, or labor and social rights in practice; while many scholars, including Bob

Deacon, argue that the ILO's 'soft power' may prompt states to introduce or extend social policies, but is insufficient to control the way that ILO standards are interpreted and implemented at the national level. Although in the context of LMICs a large proportion of workers are left outside the purview of international labor laws as a result, no study had yet systematically traced the journey of ILO standards at the national level. To address this blind spot, this article examined how the impact of the ILO Maternity Protection Conventions (C3, C103, C183) becomes compromised at different stages of the policy process, using a new historical dataset of paid maternity leave in the world.

The findings demonstrate that the existing literature should take the interpretation and implementation process of international standards into account when studying international influences. The empirical analysis of 160 independent states in the period between 1883 and 2018 supports the widespread notion that the ILO is a "promoter of social security legislation around the world" (Böger and Leisering, 2020; Schmitt *et al.*, 2015; Schmitt, 2015; Usui, 1994). However, it also reveals that the LMICs ignored the social assistance element while incorporating other standards into domestic laws, which reflects institutional features of their welfare system to cover only a small population of privileged workers. The comparison between *de jure* and *de facto* conditions of maternity protection policies points out that even when states broaden the coverage of maternity protection policies to the informal sector, the implementation constraints in LMICs further hinder the ILO standards from benefiting informal sector workers.

This paper provides the first empirical overview of the journey of ILO standards in the national context. Its main argument is that LMICs tend to selectively apply ILO standards in comparison to high-income countries. Consequently, the empirical analysis treats all LMICs as one group. However, the degree of discrepancy between the formal adoption of international labor standards and state practices varies largely between LMICs. In a few cases, such as Chile, and Cuba, LMICs' long endorsement of the ILO Maternity Protection Conventions has led to the improvement of maternity protection provisions by law as well as to a large proportion of women workers' rights to maternity protection in practice – namely, 66 to 89 percent of women workers (Addati *et al.*, 2014). More frequently, a high official standard of maternity leave policies, often driven by the ILO, is not connected to the extension of expenditure or coverage in practice. For instance, in the 1990s Brazil provided 17 weeks of maternity leave with full pay to all employed including self-employed and domestic workers and yet the country spent proportionally less than Germany, which provides only 14 weeks of maternity leave with full pay. Or take Cameroon, where only 0.6 percent of mothers with newborn children receive maternity cash benefits even though their maternity insurance is supposed to cover all employed, except the self-employed. A more detailed analysis of socio-economic and political

development that contributed to the consolidation of social rights, which the ILO has promoted, would be a promising avenue for future research enhancing our understanding of policy diffusion as well as the lack of social security coverage in LMICs.

Acknowledgments

Notes

1 https://www.ilo.org/global/about-the-ilo/how-the-ilo-works/departments-and-offices/jur/legal-instruments/WCMS_428590/lang–en/index.htm
2 I looked into the annual compliance reports and observations of the CEACR (Committee of Experts on the Application of Conventions and Recommendations) concerning the Maternity Protection Conventions from 1932 until 2018 to measure the salience of social assistance system within the ILO monitoring system.

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Appendix 1. The implications of excluding dependent states from the empirical analyses

Dependent states are excluded from the empirical analyses in the following ways. The estimation for the introduction of social insurance and social assistance covers 118 independent states and 159 independent states whose predecessor state (e.g., colonies, USSR, and Yugoslavia) had not already institutionalized social insurance or assistance schemes. For instance, African countries with a French colonial history have never introduced social insurance systems as independent states because the French colonial power already institutionalized social insurance systems for maternity leave benefits during the colonial era, and the former colonies inherited the social security systems after gaining independence. In a similar vein, colonial heritage is not controlled for when analyzing the adoption of social insurance since no former French colonies that had already institutionalized social insurance during colonial times entered the analysis. Australia is also omitted from the analysis

when analyzing the introduction of social assistance systems, since it introduced a social assistance program before its independence.

Since the main research interest of this paper is the influence of ILO conventions on independent states' behavior, I exclude dependent states from the empirical analyses in this paper. However, I acknowledge that the empirical findings may provide an incomplete overview of the influence of colonial experience on social policy expansion by excluding dependent states, many of which have introduced social policies during their colonial time. When including all dependent states in analyses, colonial heritage has a positive impact on adopting social policies, including paid maternity leave policies (Böger et al. 2022), while its impact turns non-significant or even negative once dependent states are excluded (Schmitt 2015; Schmitt et al. 2015). More specifically, it is expected that colonial heritage would negatively impact social policy expansion during the post-colonial era since colonial powers often transposed their own high standards of social policy onto the colonies. For instance, the first provision of maternity leave in French colonies replicated the French standard of maternity leave in 1952, 14 weeks of maternity leave at half-pay, which was generous even in comparison to the leave of other European countries at that time and even satisfies the current ILO standard (C183, 2000), which may have given the former French colonies less incentive to extend paid maternity leave after their independence (Son 2022).

However, I argue that my key finding that the ILO Maternity Protection Conventions prompted the extension of paid maternity leave policies still holds despite the exclusion of dependent states. A large number of dependent states that adopted or extended paid maternity leave during colonial time, as the ILO pressured colonial powers to acknowledge more responsibility for the welfare of colonial inhabitants. Böger et al. (2022) provide empirical evidences that the (French) colonialization had significant impact on the adoption of paid maternity leave in the world including dependent and independent territories. More specifically, all French colonies adopted the first paid maternity leave in 1952 and extended it in 1955, namely shortly after the adoption of the second ILO Maternity Protection Convention. Son (2022) demonstrate that France's conformity to ILO Maternity Protection Convention explains the early adoption and institutional features of paid maternity leave in former French colonies.

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Appendix 2. Operationalization of variables

Variable	Operationalization	Data Sources
Dependent variable:		
Legislative changes of maternity leave policies	1 = if paid maternity leave is introduced or extended benefit, length of leave, or coverage or 1 = if social insurance or social assistance system is introduced	Historical Database of Maternity Leave (HDML), self-constructed
Expenditure	Maternity expenditure as percentage of GDP	ILO Social Security Expenditure Database
Effective coverage	The number of employed women who are actively contributing to a maternity insurance scheme or who are registered to a social assistance program providing maternity cash benefits as percentage of all female employee *Examples:* 0-9, 10-32, 33-65, 66-89, 90-100	ILO Maternity and Paternity at work
Independent variables:		
Submission of C003	1 from 1921 until 1925, otherwise 0	Self-constructed
Submission of C103	1 from 1954 until 1958, otherwise 0	Self-constructed
Submission of C183	1 from 2002 until 2006, otherwise 0	Self-constructed
Generosity score	Maternity generosity score = z(Benefit replacement rate)+ + z(Benefit duration weeks) - z(Benefit qualification weeks) + z(Legal coverage categories) *Note:* Legal coverage scores are generated through addition of these four categories, yielding a variable ranging from 0 to 4, 0 indicating the absence of maternity leave policy and 4 indicating full coverage of the four sectors.	Historical Database of Maternity Leave (HDML), Variables: *fam_mat_leave_amount_repl_own, fam_mat_leave_dur_ben _own2, fam_mat_leave_con_own, fam_mat_leave_cov_own2*
Expected coverage	(Legal coverage of maternity benefits by employment sector)*(the ratio of female employment in each employment sector as percentage of female employment)*(1 – the ratio of female employment in informal employment and informal	Legal coverage of maternity benefits: Historical Database of Maternity Leave (HDML), Variable: *fam_mat_leave_cov_own2* Ratio of female employment in each employment sector: World Development Indicators, Variables: *SL.IND.EMPL.FE.ZS, SL.SRV.EMPL.FE.ZS,*

Continued

Variable	Operationalization	Data Sources
	sector of female employment in non-agricultural sector as percentage of female employment, if legal coverage of maternity benefits does not cover any type of atypical employment) The aggregated ratio of female employment in each employment sector, i.e., industrial, non-industrial, and agricultural sector is 100 percent. I used the value of the ratio of female employment in informal employment in prior or subsequent year if the value in 2010 is missing. *Examples*: If legal coverage of maternity benefits is women employees in industrial, services, and agricultural sectors as well as one or more types of atypical employment, expected coverage is 100 percent. If legal coverage of maternity benefits is women employees in industrial, services, and agricultural sectors, expected coverage is: (ratio of female employment in industrial, services, and agricultural sectors, i.e., 100 percent)*(1- ratio of female employment in informal employment and informal sector).	*SL.AGR.EMPL.FE.ZS* Ratio of female employment in informal employment: ILO STAT, Variable: *IFL_COMP_INFEMP*
Expected coverage2	(Legal coverage of maternity benefits by employment sector)*(the ratio of female employment in each employment sector as percentage of female employment)*(1 – the ratio of female employment in informal employment and informal sector of female employment in non-agricultural sector as percentage of female employment)	Legal coverage of maternity benefits: Historical Database of Maternity Leave (HDML), Variable: *fam_mat_leave_cov_own2* Ratio of female employment in each employment sector: World Development Indicators, Variables: *SL.IND.EMPL.FE.ZS, SL.SRV.EMPL.FE.ZS, SL.AGR.EMPL.FE.ZS* Ratio of female employment in informal employment: ILO STAT, Variable: *IFL_COMP_INFEMP*

Continued

Variable	Operationalization	Data Sources
	Examples: If legal coverage of maternity benefits is women employees in industrial, services, and agricultural sectors as well as one or more types of atypical employment, expected coverage2 is: (ratio of female employment in industrial, services, and agricultural sectors)*(1 - ratio of female employment in informal employment and informal sector). If legal coverage of maternity benefits is women employees in industrial, services, and agricultural sectors, expected coverage2 is: (ratio of female employment in industrial, services, and agricultural sectors)*(1 - ratio of female employment in informal employment and informal sector).	
Control variables:		
ILO membership	1 = if states is ILO member	NORMLEX, Country profile

Logged GDP per capita	Logged gross domestic product divided by mid-year population in 2011 international dollars	Gapminder,
		    Variable: gpdpc
		    Maddisson Project, Variable: cgdppc

Logged and scaled GDP per capita	Logged and scaled gross domestic product divided by mid-year population in 2010 international dollars	World Development Indicators, Variable: *NY.GDP.PCAP.KD*
Change of total fertility rate	Total fertility rate t - Total fertility rate t-1 *Note:* Total fertility rates for Serbia and Montenegro, Yugoslavia, USSR, and Czechoslovakia are calculated as weighted average of member states based on the proportion of population of the member states since Gapminder use only the contemporary independent states as the unit of historical data.	Gapminder for population and total fertility rate The Human Fertility Database (East/West Germany)

Continued

Variable	Operationalization	Data Sources
Initiation of other welfare programs t-1	Lagged number of newly adopted social protection programs against old-age, sickness, unemployment, industrial accident, or family allowance *Note:* Missing values are filled based on the U.S. Labor Department Social Security Programs Throughout the World reports (SSPTW) and the ILO reports that were the major sources of the SPaW.	Social Policy around the World (SPaW), Variable: oldage_yearlaw, sick_yearlaw, unemp_law, working_yearlaw, family_yearlaw
Religion	Christianity = if the majority of the population in a state are adherent to Christianity Islam = if the majority of the population in a state are adherent to Islam. Other religions = if the majority of the population in a state are adherent to other religions that are neither Christianity nor Islam.	World Religion Data from the Correlates of War Project, Variable: chrstgenpct, islmgenpct, udgenpct, shntgenpct, budgenpct, zorogenpct, hindgenpct, sikhgenpct, bahgenpct, taogenpct, jaingenpct, syncgenpct, confgenpct, syncgenpct, anmgenpct, othrgenpct
Total fertility rate	Total fertility rate (births per woman)	World Development Indicators, Variable: *SP.DYN.TFRT.IN*
Democracy	1 = if democracy	Boix, Miller, and Rosato, 2018, Variable: *democracy*
French colony	1 = if previously French colony	Self-constructed
British colony	1 = if previously British colony	Self-constructed
Female labor participation rate	Female labor force as the percentage of total labor force	World Development Indicators, Variable: *SL.TLF.ACTI.FE.ZS*

Appendix 3. Logistic regression analysis with a cubic polynomial approximation

	(1)	(2)	(3)	(4)	(5)
	Amount	Duration	Coverage	Financing	Social assistance
ILO Convention 003	2.121*	2.307**	2.201**	2.624*	
	(2.53)	(3.00)	(2.87)	(2.53)	
ILO Convention 103	2.568***	1.506	2.604***	2.386*	1.218
	(4.08)	(1.53)	(4.05)	(2.07)	(0.26)
ILO Convention 183	0.601	1.111	1.424	1.694	1.379
	(-1.47)	(0.45)	(1.39)	(0.98)	(0.65)
ILO membership	1.856**	1.664*	2.207***	2.024*	13.32*
	(2.74)	(2.44)	(3.61)	(2.16)	(2.51)
Logged GDP per capita	0.960	1.134*	0.964	1.256*	1.272
	(-0.58)	(1.98)	(-0.54)	(1.97)	(1.45)
Change of total fertility rate	2.257	1.403	1.135	2.790	1.005
	(1.89)	(0.69)	(0.23)	(1.65)	(0.00)
Democracy	1.364*	0.874	0.958	0.849	2.782**
	(2.05)	(-0.96)	(-0.28)	(-0.60)	(2.71)
Initiation of other welfare programs t-1	0.999	1.403	1.621*	2.620***	3.652***
	(-0.00)	(1.54)	(2.43)	(3.84)	(4.72)
Religion (Christianity as reference group)					
Islam	1.000	0.772	0.666*	0.496*	0.240*
	(0.00)	(-1.41)	(-2.07)	(-1.99)	(-2.25)
Other religions	0.742	0.813	0.837	0.589	0.410
	(-1.37)	(-1.05)	(-0.89)	(-1.53)	(-1.65)
French colony	0.788	0.415**	0.510*		
	(-0.93)	(-2.85)	(-2.46)		
British colony	1.135	0.965	0.868		
	(0.72)	(-0.21)	(-0.78)		
t	0.972	0.967*	0.960**	0.915**	0.910**
	(-1.82)	(-2.36)	(-2.72)	(-3.00)	(-2.93)
c.t#c.t	1.001	1.001**	1.001**	1.002**	1.001*
	(1.85)	(2.66)	(2.61)	(3.06)	(1.96)
c.t#c.t#c.t	1.000*	1.000**	1.000*	1.000**	1.000
	(-2.08)	(-2.81)	(-2.53)	(-2.88)	(-1.25)
Number of prior events	1.069	1.092*	0.853*		
	(1.14)	(2.16)	(-2.16)		
Observations	12267	12267	12267	5433	10588
Number of countries	160	160	160	118	159
Number of events	257	314	259	83	50
Log-likelihood	−1215.502	−1421.936	−1218.756	−403.204	−269.199

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix 4. List of countries for the OLS regression analysis (Table 3) and the bivariate scatter plots (Figure 3)

List of countries: (High income countries) Austria, Belgium, Canada, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Japan, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Trinidad and Tobago, United Kingdom, (Low- and middle-income countries) Albania, Bangladesh, Belarus, Brazil, Bulgaria, Burkina Faso, Cameroon, Chile, China, Colombia, Cuba, Guatemala, Guyana, Indonesia, Jamaica, Latvia, Lithuania, Mexico, Morocco, Nicaragua, Peru, Philippines, Romania, Thailand, Turkey

Descriptive statistics:

	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Expenditure	52	0.24	0.29	0.005	0.03	0.32	1.27
Generosity	52	0.00	2.12	−4.87	−1.11	1.36	5.98
Total fertility rate	52	2.24	1.21	1.16	1.42	2.76	6.84
Female labor participation rate	52	56.32	13.23	24.18	48.13	65.51	79.84
Democracy	52	0.83	0.38	0	1	1	1
Logged and scaled GDP per capita	52	0.00	1.00	−2.33	−0.75	0.98	1.63

First bivariate scatter plots

List of countries: (High income countries) Austria, Belgium, Canada, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Israel, Italy, Japan, Luxembourg, New Zealand, Norway, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland, United Kingdom, (Low- and middle-income countries) Albania, Argentina, Armenia, Azerbaijan, Belarus, Benin, Bolivia, Brazil, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, Chile, Colombia, Costa Rica, Cuba, Democratic Republic of the Congo, Dominican Republic, Ecuador, Egypt, El Salvador, Fiji, Guatemala, Guyana, Honduras, India, Indonesia, Ivory Coast, Jordan, Laos, Latvia, Lithuania, Madagascar, Mauritius, Mexico, Mongolia, Myanmar, Namibia, Nepal, Nicaragua, Pakistan, Panama, Peru, Philippines, Russia, Rwanda, Senegal, Serbia, South Africa, Sri Lanka, Tanzania, Thailand, Togo, Tunisia, Turkey, Uganda, Ukraine, Uruguay, Venezuela, Vietnam, Zambia, Zimbabwe

Descriptive statistics:

	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Expected coverage	90	77.49	36.31	2	45.0	100	100
Total fertility rate	90	2.63	1.32	1.36	1.63	3.01	6.54
Logged and scaled GDP per capita	90	0.03	1.02	−2.16	−0.72	0.74	2.02
Democracy	90	0.70	0.46	0	0	1	1

Second and third bivariate scatter plots

List of countries: Albania, Argentina, Armenia, Benin, Bolivia, Brazil, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, Chile, Colombia, Costa Rica, Democratic Republic of the Congo, Dominican Republic, Ecuador, Egypt, El Salvador, Guatemala, Guyana, Honduras, India, Indonesia, Ivory Coast, Laos, Madagascar, Mauritius, Mexico, Mongolia, Myanmar, Namibia, Nepal, Nicaragua, Pakistan, Panama, Paraguay, Peru, Rwanda, Senegal, Serbia, South Africa, Sri Lanka, Tanzania, Thailand, Togo, Uganda, Uruguay, Vietnam, Zambia, Zimbabwe

Descriptive statistics:

	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Expected coverage	51	60.25	40.63	2	20.5	100	100
Expected coverage2	51	31.65	22.59	1	13.5	48.5	94
Total fertility rate	51	3.24	1.42	1.40	2.30	4.28	6.54
Logged and scaled GDP per capita	51	−0.61	0.71	−2.16	−1.18	−0.04	0.58
Democracy	51	0.63	0.49	0	0	1	1