Peace Above the Glass Ceiling: The historical relationship between female political empowerment and civil conflict

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Abstract. We investigate whether female political empowerment is conducive to civil peace, drawing on global data on female political empowerment over a 200-year period, from the Varieties of Democracy database. We augment previous research by expanding the temporal scope, looking at a novel inventory of female political empowerment measures, attending to reverse-causality and omitted variable issues, and separating between relevant causal mechanisms. We find a strong link between female political empowerment and civil peace, which is particularly pronounced in the 20th century. We find evidence that this relationship is driven both by women's political *participation* – particularly the bottom-up political participation of women, e.g., in civil society – and the culture that conduces it. This is the strongest evidence to date that there is a robust link between female political empowerment and civil peace, stemming from both institutional and cultural mechanisms.

1 Introduction

Are societies that empower women less prone to civil violence? Early feminist intellectuals such as (Nobel Peace Prize winner) Bertha von Suttner Von Süttner (1899) proposed a clear link between feminism, gender equality and peace, which has been central to feminist IR scholarship (Tickner et al., 1992). This hypothesis also figures in more recent historical narratives of the long-term decline in violence such as Pinker (2011), which considers cultural change wherein women's rights and perspectives are increasingly valued and respected as one of the structural forces propelling societies towards peace. The assumption that women's empowerment is key to peace is also widely shared by policy-makers engaged in conflict-prevention, in line with UNs resolution 1325 on Women, Peace and Security (United Nations Security Council 2000).

However, while the female empowerment-conflict link has received deserved attention in gender studies (e.g. Ekvall, 2013), and from a number of conflict scholars (e.g. Reiter, 2014), finding some support (e.g. Melander, 2005; Schaftenaar, 2017), this thesis is not yet on firm footing. In this study, we offer a comprehensive empirical investigation of the relationship between female political empowerment and civil conflict, augmenting existing literature in four ways. First, existing studies are limited in temporal scope – being restricted to the final decades of the 20th century and often to a limited set of countries. This means that important historical advances in female political empowerment are left out, such as the suffrage expansions in the early and mid 20th century, and extensions in women's civil liberties in the 19th century.

Second, the existing evidence relies on a handful of female political empowerment indicators, focusing either on female political leadership (e.g. Melander, 2005), or indicators of socio-economic empowerment, such as women's labor force participation or fertility rates (e.g. Schaftenaar, 2017; Caprioli, 2005). While important, these omit crucial aspects of female empowerment, particularly related to women's mass political empowerment, through participation in civil society and mass politics, or protection of women's civil liberties. Third, current studies do not pay adequate attention to potential omitted-variable bias and reverse causality, through e.g. using appropriate fixed-effects models or gauging sensitivity of results to potential confounders. Hence, it remains poorly understood whether existing evidence in favor of what Pinker (2011) calls the "feminization

thesis" is driven by, e.g., certain cultural or political developments that are conducive to both women's empowerment and peace. Finally, few attempts at the global level have been made to investigate the different mechanisms accounting for the female empowerment-peace relationship. For instance, is it driven by women holding political office, by grassroot participation, or is it due to the underlying *cultural shift* that contributes to female political empowerment?

We address these issues by investigating the relationship between female political empowerment and civil conflict onset in a global analysis spanning 1817-2017. To do this, we draw on female political empowerment measures taken from the Varieties of Democracy (V-Dem) dataset (Coppedge et al 2017), which has recently been extended back to the early 19th century as part of the Historical V-DEM project (Knutsen et al., 2017). Combined with historical intrastate conflict data from UCDP/PRIO and Correlates of War, we can study the historical relationship between female political empowerment and civil war throughout recent history. The fine-grained nature of the V-DEM data also allows us to offer a disaggregated test of the link between female political empowerment and civil conflict, through a wide range of indicators of empowerment-aspects related to women's civil liberties, political participation and engagement in civil society.

Drawing on previous work, we outline two main mechanisms relating female political empowerment to civil peace. First, the *participation-mechanism* considers women as being more opposed to violence and more sensitive to humanitarian concerns. Due to these dispositions, societies where women influence decision-making through their participation in politics, should be less engaged in civil war. This could happen both as a result of women's involvement in elite politics, through representation in the the executive and legislature, or through women's grassroot participation in politics and civil society. Second, the *norm-mechanism* emphasizes that the relationship between female political empowerment and civil conflict is driven by the cultural norms that condone female empowerment. According to the participation-mechanism, women's participation matters even when we (hypothetically) hold culture constant, while the norm-mechanism attributes effects to societal norms, irrespective of female participation. We also outline how norms and participation work together and may reinforce each other. In order to explore the norm-argument, and how norms may impact on both female political empowerment and the risk of conflict, we draw on

survey data from the World Values Survey measuring societal attitudes to gender equality.

We start by investigating an index of female political empowerment and its relationship to civil conflict. This uncovers a strong negative link between a country's degree of female political empowerment and civil conflict. This result remains strong in fixed-effects specifications. Using causal sensitivity analysis, we also show that this result is unlikely to reflect selection from omitted variables. We also estimate instrumental variable models relying on a different set of identifying assumptions, yielding consistent results. When breaking female political empowerment down into its constitutive concepts, to investigate whether the link is due to, e.g., female grassroot participation or elite politics, we find a particularly strong relationship for aspects related to bottom-up political participation - including women's civil society participation and share of female journalists. We think this offers some evidence that including women in politics in a broader sense yields the greatest peace dividend.

Since women's inclusion in politics and society could again be a mere result of more female-friendly norms – suggesting that culture rather than female involvement is the driving force of peace – we also control for survey items from World Values Survey capturing gender-equal values (covering the 1981-2015 period). While female political empowerment and gender-equal values are obviously closely related, there is significant empirical daylight between the two, and it is interesting to see if they have independent relationships to conflict. We find that the negative link between female political empowerment and civil conflict holds also when controlling for gender-equal norms. At the same time, gender-equal norms are negatively related to civil conflict when controlling for indicators of female political empowerment.

Our study breaks new theoretical ground by outlining how norms and participation may reinforce each other, and we explore how gender-norms and women's political empowerment may work together to promote peace, as the preferences and choices made by women in politics may *depend on* the gender-norms that prevail in society. In particular, we find that women's political empowerment is only negatively linked to conflict in the presence of gender-equal norms. These findings offer new insights about the link between female political empowerment and peace, by suggesting that it is driven both by female participation in politics as well as by cultural shifts towards female

political empowerment, and that the extent to which women in politics will induce peace depends on societies' gender-norms.

2 State of the art: Female political empowerment and armed conflict

In prominent work on the historical decline of (personal and organized) violence, Pinker (2011) points to "feminization" as one of the "better angels" that have led to a decline of violence. Building on earlier and contemporary feminist scholarship, this feminization-thesis also dovetails with much indirect, and more rigorous, evidence in favor of the proposition that societies that empower women see less internal conflict. Individual-level studies show that men are more likely to favor violence than women (Goldstein, 2001; Bjarnegård, Brounéus and Melander, 2017, 329–330). Others report a link between female gender and positive attitudes towards peace (Yablon, 2009; Wilcox, Hewitt and Allsop, 1996), while there are some indications that this is (at least partly) mediated through more gender-equal values and attitudes (among women) (Tessler and Warriner, 1997). Moving from individuals to *organizations*, Asal et al. (2013) show that political organizations with gender-inclusive ideologies are less violent. Furthermore, we observe that sexual violence against women and conflict very often go hand in hand (Cohen and Nordås, 2014).

Do these micro- and meso-level relationships translate into aggregate patterns at the country level? A handful of studies find that states with a high level of female empowerment are less belligerent at the international level. Mary Caprioli (has done pathbreaking systematic work on this question, finding, for example, a negative relationship at the country-level between female empowerment and international disputes (see also Caprioli (2003), Caprioli and Boyer (2001) and Regan and Paskeviciute (2003)). The relationship between female empowerment and conflict within states is less studied. Some investigate how family-structures that subordinate women relate to political violence. Hudson, Bowen and Nielsen (2015) find that societies with patriarchal clan governance are more prone to political violence. There is also some evidence that societies practicing polygyny, a co-factor of misogyny, are less peaceful (Kanazawa, 2009; McDermott et al., 2018).

Gleditsch et al. (2011) suggest that this is due to misogynous cultures rather than polygynous practices.

Melander (2005) investigates whether countries that empower women are less prone to internal armed conflict. He considers three proxies for female empowerment: whether the leader is female, the percentage of women in parliament, and the female-to-male higher education ratio. He finds that societies with a high level of female empowerment are less prone to internal conflict. The study also finds that female empowerment is especially peace inducing in democracies. Relatedly, Caprioli (2005) finds that women's empowerment – measured using fertility rates and women's share of the labor force - is negatively linked to civil wars (see also Gizelis (2009)). A recent evaluation (Schaftenaar, 2017) considers non-violent conflict and violent conflict together in one analysis, and finds that women's empowerment – measured by access to education and fertility rates – yields a higher likelihood of nonviolent conflict onset, compared to no conflict or armed conflict.

The studies noted above all suggest a link between female empowerment and peace. Yet, they leave several issues on the table. First, with some notable exceptions (e.g., Hudson, Bowen and Nielsen, 2015) most existing work relies on limited proxies for women's empowerment, such as women in the labor force or education enrollment on the one hand, or the prevalence of female leaders or parliamentarians on the other. This omits important aspects of female empowerment, such as female mass participation in politics through suffrage or civil society organizations, or the extent to which civil liberties apply to women. In particular, while emphasizing female top-down political involvement (e.g., through leadership positions), previous literature has not sufficiently accounted for women's bottom-up political involvement, for instance through civil society partic- ipation. Although a high share of female political leadership may often go together with a high level of women's mass participation in politics or civil society, these different aspects do not neatly overlap. For example, in India, there is a high percentage of female members of parliament, but the country scores notoriously low on other women's empowerment indicators such as civil society participation and female journalists. In countries such as Japan, women are highly empowered through constitutional protections of women's civil liberties and political rights, but the level of female political participation is comparatively low, indicated for instance by the fact that fewer

than 10 percent of current parliamentarians are women.

A second, and related issue, is the restricted temporal and cross-sectional scope of extant studies. Many countries do not report data on variables such as women in the labor force. This may lead to selection bias, as the analyzed sample skews towards highly developed countries (Cueva Beteta, 2006). Most time-series of countries that do report data are quite short. For example, the data used in Caprioli (2005) and Schaftenaar (2017) start in 1960. This omits several of the great advancements in female empowerment, related to e.g., voting rights and civil liberties. Third, existing studies do not adequately account for threats from omitted variables and reverse causality. None of the mentioned studies focus on country- and year-fixed effects models, meaning that there is a high possibility for omitted variables at the country-level conditioning both gender-equal cultures and conflict, and temporal trends that correlate the global evolution of civil conflict and female political empowerment. While Melander (2005) includes random effects, these still leave a significant threat of omitted-variable bias at the country level.[1] Reverse causality is also a problem, since conflict (and conflict risk) affects female political empowerment. Not accounting for these threats could lead to spurious results.

Finally, few tests distinguish between the two different mechanisms proposed in the literature, to adjudicate whether it is female political *empowerment per se* that reduces violence, or the culture that enables it. Other unanswered questions about mechanisms are, for example, whether it is especially elite-level participation, or bottom-up involvement that matters to peace. And, whether female empowerment through political representation only affects peace in societies with more gender-equal social norms.

Answering the question of how female political empowerment affects conflict also requires a consideration of what causes female empowerment. We will not attempt an exhaustive review of the literature on this question here, but briefly mention some key recent contributions. Some studies emphasize various *economic drivers* of female empowerment – pertaining to technology, socio-economic development and the structure of the economy. It has been shown that technological

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[1]The random effects model assumes that the country-specific effects follow a normal distribution, that there is no remaining bias from country-level factors once we estimate the mean and variance of the country-terms, and that there is no correlation between the country-varying (random) intercept and the covariates of interest. All of these assumptions are unlikely to hold in this context.

developments that enable greater participation of women in the workplace, such as household production technology that free up womens' time, or medical progress that strengthens maternal health, promote female empowerment (Albanesi and Olivetti, 2016; Goldin, 2006). The structure of the labor market and welfare state also matters. For instance, publicly provided services such as daycare can reduce the exclusion of women from the labor market, aiding equality (Iversen and Rosenbluth, 2006, 2010). Others emphasize *cultural factors* such as religion and the structure of the family. For instance, strong religiosity is linked to lower female empowerment (Seguino, 2011) and that family and marriage structures such as polygyny and patrilinearity make women more subordinate (Hudson, Bowen and Nielsen, 2015; McDermott et al., 2018). Finally, a recent literature explores the impact of deep-rooted agricultural histories on country-level differences in female empowerment (Alesina, Giuliano and Nunn, 2013; Hansen, Jensen and Skovsgaard, 2015).

3 Mechanisms linking female political empowerment and conflict

Explanations for why female political empowerment should dispose for peace center on two categories of mechanisms. The first relates to how female participation in politics may promote peace, and the second to how gender-equal norms are conducive to peace. These two aspects are of course not distinct. It will often be the case that a cultural shift towards more gender-equal predates political empowerment of women, while it can also be the case that political empowerment drives cultural changes in the direction of gender equal norms. Female political participation and gender equality norms evolve endogenously, through feedback loops and reinforcement (for a discussion, see Kittilson and Schwindt-Bayer, 2012). While these two aspects may be hard to tease apart empirically, and are closely tied theoretically, they are different in important ways, as will be discussed below.

3.1 Female participation

First, female participation in politics and civil society may be associated with less armed conflict due to women being less condoning of violence than men. This does not rely on the reductionist notion that women are not involved in violent politics at all. A large literature shows that they do,

in various ways (see e.g., McDermott, 2015; Wood and Thomas, 2017; Henshaw, 2016; Goldstein, 2001; Alison, 2009). However, while this goes to show that women *also* engage in violence, there is evidence that they on average are relatively less disposed than men to favor violence (Yablon, 2009; Wilcox, Hewitt and Allsop, 1996; Regan and Paskeviciute, 2003). Women are found to less often resort to direct interpersonal violence (e.g. Lagerspetz, Björkqvist and Peltonen, 1988), and to be less condoning of military force (Brooks and Valentino, 2011; Eichenberg, 2016, 2019). More generally, women are considered to be less willing to engage in power struggles for personal gains or honor and more eager to "minimize power differences, share resources, and treat others equally" (Caprioli and Boyer, 2001). Such attitudes should, on average, translate into a more peaceful approach to political affairs.

Women's supposed nonviolent dispositions have been traced to evolved "natural" aversions (to violence) (Buss and Shackelford, 1997), as well as to the social construction of gender roles whereby females adopt more peaceable attitudes, while male – or "macho" – gender roles reward violence and violence-promoting behavior. The construction of violent masculine gender norms is described in the concept of "militarized masculinities" (e.g. Bjarnegård and Melander, 2011). Duriesmith (2016) describes militarized masculinities as patriarchal constructions and performances of what it means to "be a man" that reward certain types of violence (see also Duriesmith and Ismail, 2019). Another argument holds that women are more sensitive to humanitarian concerns due to the fact that they (and children) are usually the worst affected by some consequences of political instability, such as humanitarian crisis, poverty, and sexual violence (Shea and Christian, 2016).

On these accounts, what matters is the *representation of women* such that their natural and/or socially constructed aversions to violence will have a greater impact on policy.

This picture can be nuanced by distinguishing between women's top-down participation at the elite level, and bottom-up grassroot participation. This distinction is commonly drawn in work on political participation in democracies (e.g., Tilly, 1999). In our context, elite-level participation would refer to, e.g., female politicians at the level of executives and legislators, while bottom-up participation would be instances of participation at the level of civil society. Several mechanisms suggest that bottom-up participation by women should be a more consistent predictor peace than

female participation at the elite-level. First, even if women, on average, are more averse towards political violence, women selecting into political leadership positions in the executive or legislature could be different from the general (female) population. This could be due to expectations from a patriarchal society, that does not consider typical "female characteristics" suitable for leaders. Faced with such expectations about leader characteristics, (prospective) female leaders may need to signal traits that are more stereotypical of men – including a willingness to engage in repression or armed conflict. Women participating in politics at the grassroot level on the other hand, are much less dictated by stereotypes about leadership characteristics, that do not necessarily apply to grassroot forms of participation.

This suggests that although women on average should be less condoning of political violence than men, this may not be the case in highly patriarchal cultures. Under such conditions, female leaders (e.g. in the executive or the legislature) may be equally or even more likely to condone violence, due to the need to compensate for their female gender by conforming to an "iron lady" stereotype. This hints at the possibility that the effect of female elite representation on armed conflict is conditioned by patriarchal norms in society.

It may also often be the case that elite institutions, such as the executive, legislature and political parties, are created by men and thus carry formal and informal norms that hew to patriarchal cultures. Such institutional norms may also influence the selection of women with certain characteristics into leadership positions. Grassroot institutions such as civil society organizations may also contain internal patriarchal cultures and gender hierarchies that encourage typical "male characteristics", but the bottom-up nature of such organizations suggest that their hierarchies should be less dominant than in elite institutions. Female participation in organizations with an expected low level of patriarchal norms, such as "women's organizations", should be particularly likely to contribute to peaceful outcomes, although also other types of civil society organizations may channel female preferences to a greater extent than elite instutitons.

3.2 Gender-equality norms

Rather than looking to intrinsic (or learned) differences between men and women and how these work through female political participation, the second mechanism pertains to the *norms* predominating in highly gender-equal societies. According to this reasoning, societies where women are subordinate rely on principles of domination, honor and control in the family. These principles are easily transferred from the family into other domains such as behavior towards minorities, political opponents or groups competing for resources, and they may serve as a rationale for the use of violence (Hudson et al., 2009; Bjarnegård and Melander, 2011). Conversely, in societies where gender equality prevails, the mutual respect and tolerance that characterize e.g. family ties creates a culture emphasizing peaceful social relations and decision-making.

This mechanism assumes that gender-equal *norms*, among both men and women, are linked to peaceful behavior. Recent studies, such as Bjarnegård, Brounéus and Melander (2017) offer evidence in accordance with this perspective, showing that individuals espousing patriarchal values - both men and women - have more favorable views towards using political violence. One interpretation of this mechanism is that gender-equal norms influence attitudes towards, and willingness to use, violence. The other interpretation is that concerns for gender equality is one component in a broader culture also embracing attitudes such as pacifism, tolerance, and democratic decision-making (see, e.g. Inglehart and Welzel, 2006). On the latter account, gender-equal norms do not *explain* willingness to use violence - rather, they are both part of the same normative framework.

Gender-equal norms should influence the likelihood of violent conflict by inducing more peaceful behavior by the state. The norm-mechanism implies that in societies with gender-equal norms, both male and female decision-makers will work to minimize participation in conflict and use of violence by the state, either out of personal convictions or due to pressure by other citizens with gender-equal norms. When it comes to opposition groups as potential perpetrators of violence, such as rebel groups or resistance campaigns, these may not always share the same gender beliefs as the wider society. Such discrepancies could even be part of the motivation behind the resistance against the state, for groups claiming to stand for e.g. "traditional values". In such cases, gender-equal norms in society may not spill over into reduced willingness by the opposition to use violent resistance,

and in some cases it could even increase opposition groups' willingness to condone violence, as a reaction against perceived "dangerous" gender-equal norms held by the rest of society. Yet, we surmise that the prevalence of gender-equal norms in society will also *increase the likelihood* that potential violent opposition groups also hold such beliefs. This may again reduce these groups' willingness to use violent forms of resistance. And, even if opposition groups' patriarchal values lead to acceptance of violent resistance, a state more committed to avoiding violent conflict, as a result of gender norms, may prevent the outbreak of violent conflict.

Increases in gender-equal norms may also reduce interpersonal violence, such as intimate partner violence (Gupta et al., 2013; Pulerwitz et al., 2015; Vyas and Heise, 2016). This is not to say that there is a perfect relationship between female empowerment and less personal violence, nor that high levels of interpersonal violence and gender-equal norms cannot coexist. There is even some evidence that increases in female empowerment may lead to a backlash in the form of misogynistic violence, including domestic violence (Whaley and Messner, 2002). Yet, the pacifying effect of gender-equality seems to dominate the backlash effect when these are tested as competing hypotheses (e.g. Chin, 2012). Also, most studies documenting such a backlash effect in the form increased interpersonal violence consider increases in household-level female empowerment, due to e.g. female labor force participation and increased education, rather than an improvement in gender-equal norms.

In sum, according to the norm-argument, the socialization away from traditional masculine cultures makes the average person, also males, less likely to condone violence. Given this discussion, we surmise that when the population as such becomes more violence-averse as a result of more gender-equal norms, it does not matter that *women*, specifically, be represented, simply that those affecting policy - men and women - have become more averse to violence as a means.

Although these two types of explanations emphasize different mechanisms with norm-explanations singling out aspects of societies (i.e. their female-friendly culture) and participation-explanations highlighting aspects of women vis--vis men, they do not, of course, operate in isolation from each other. For instance, societies where female-friendly norms are prevalent should facilitate high levels of female participation in politics, as the norms of both voters and potential representatives

influence the extent to which women can run for and/or win elections. A high level of womens participation in politics may also promote more female-friendly norms, as experience with female politicians challenges established gender stereotypes. In short, gender-equal norms and women's political participation influence each other in mutual feedback loops. This speaks to the need for studying these dimensions in conjunction, as will be done in this project by combining data on womens involvement in politics with data on norms.

We further propose that female-friendly norms and womens political participation should interact when it comes to influencing prospects for peace. As discussed above, there is evidence that female leaders in patriarchal societies may be equally or even more supportive of violence than men, as women are considered to be "weak" and have to prove themselves to a higher degree (Koch and Fulton, 2011). This suggests that womens preferences and behavior in leadership positions will be conditioned by societal gender-norms. In particular, we propose that women (in, e.g., politics) will be more committed to a peaceful solution to political conflict when the rest of society supports female-friendly norms.

3.3 Expectations

Above, we outline two broad mechanisms relating to political participation and gender-equal cultures. Furthermore, we discuss how participation can be broken down into elite- and grassroot-level participation, and how gender-equal cultures and female political empowerment can have reinforcing effects. All mechanisms discussed above yields the overall expectation that societies where women are politically empowered should be more peaceful. This is the main hypothesis. Moving on from this, we test the nuances of the female political empowerment category, by exploring whether it is elite- or grassroot-level empowerment that matters. While the theory discussed above yields no strong expectations to which of the two should matter more, we think this is an important empirical question that may open further avenues for future research.

Although the participation- and norms mechanisms each offer distinct explanations of the link between female political empowerment and violence relationship is, they are very hard to disentangle empirically. High levels of female participation in politics or civil society, for instance through

representation in the state legislature or in local councils, could very well be a product of norms: Societies with a female-friendly culture should have lower informal and cultural barriers for women wanting to enter politics. This makes it more likely that voters will elect female representatives. This is a problem for existing studies arguing that female political *representation* – specifically – is a driving force for peace, as a high level of women in politics could be driven by gender-equal norms. Conversely, female political empowerment norms may be influenced by female participation, as experience with women in politics may increase acceptance for female political participation and reduce misogynist attitudes. We address this issue, by investigating whether manifestations of female political empowerment such as women's political participation influence civil conflict when *controlling for female empowerment norms*, and vice versa. While this does not provide a test where we can "isolate" the causal effect of either mechanism, which is complicated by the fact that there is a feedback loop between gender-equality norms and political representation, it goes some way towards investigating whether either macro-factor has an independent correlation with civil conflict when conditioning on the other. Furthermore, to explore the proposed conditional relationship between female political empowerment and norms, we also test whether the effect women's political empowerment on civil conflict is conditioned by female-friendly norms, such that the two reinforce each other.

4 Research design

We focus on *female political empowerment*, relying on the V-Dem dataset. Female political empowerment is defined by Sundström et al. (2015) as "a process of increasing capacity for women, leading to greater choice, agency, and participation in societal decision-making." (Coppedge, Gerring and Lindberg, 2017; Sundström et al., 2015). For maximum temporal scope, we draw data from both the contemporary version, spanning 1900-2015 (Coppedge et al. 2017) and the Historical V-Dem dataset (Knutsen et al., 2017), covering 1789-1900. These two datasets comprise a range of concrete items and higher-level indices relating to female political empowerment. As our benchmark, we consider the *Female Political Empowerment* (FPE) index, embedded in contemporary V-Dem and presented in Sundström et al. (2015).

The FPE index in the original V-DEM dataset averages the scores of three sub-indices. The fist building block; the *women's civil liberties index*, is formed by taking the point estimate from a Bayesian factor analysis model including three concrete items; *freedom of domestic movement for women*, *freedom from forced labor for women*, *women's right to private property* and *access to justice*.[2] The second component is the *women's civil society participation index*. This is a latent factor variable estimated on the following items; *freedom of discussion for women*, *womens civil society organization (CSO) participation*, and *share of female journalists*. The final component is the women's political participation, which averages the indicators of *share of female legislators*, and *political power distributed by gender*.

The FPE index as constructed in the original V-DEM dataset is not included in Historical V-Dem (HV-Dem). This reflects the exclusion of the sub-index women's political participation in HV-Dem. To construct a measure that spans 1789-2015, we create our own historical FPE index, by averaging the *Women's civil society participation* index and the *Women's civil liberties* index, both of which are included in Historical V-DEM, and adding female suffrage. Female suffrage is measured by this question "What is the approximate percentage of enfranchised female adults older than the minimal voting age?" When we run analyses for the entire 1789-2015 period, we will use this Historical FPE index, but resort to the original FPE index when we restrict the sample to the 1900-2015 period.

The evolution of female political empowerment as captured by the historical and contemporary versions of the FPE index is presented in figures 1 and 2, showing the average score on the FPE index globally (1900-2015), as well as the Historical FPE index (1789-1900). The figures shows a steadily increasing trend towards greater female political empowerment.

As our key outcome, we look at *civil conflict onset*, using two different sources. For the period 1946-2015, we mainly rely on the UCDP/PRIO database (Gleditsch et al., 2002), the 2016 version (Melander, Pettersson and Themnér, 2016). Here, we opt for the most inclusive civil conflict category, using the 25 battle death threshold. Since we also want to study the pre-WWII period, we also draw on the Correlates of War data on intrastate wars (Sarkees and Wayman, 2010),

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[2]The details of the latent trait model are described in Pemstein et al. (2018).

Figure 1: Global average of the V-DEM Female Political Empowerment index (1900-2015)
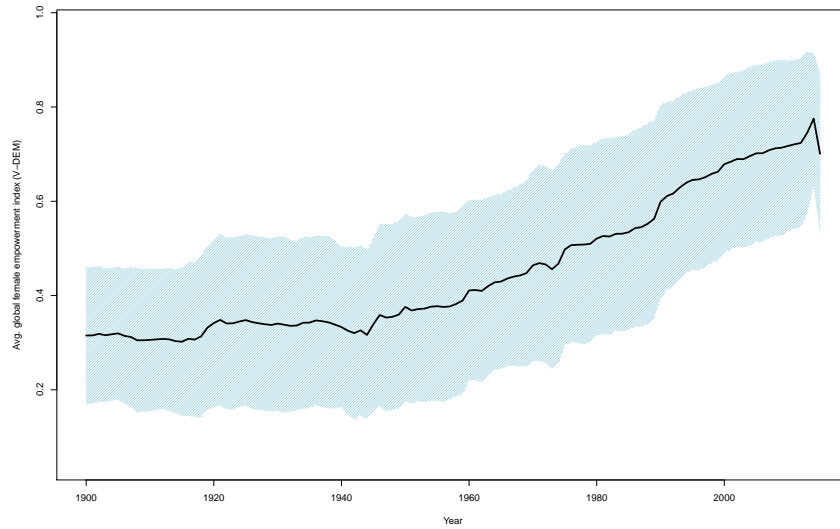
The confidence bands reflect the yearly global standard deviation

Figure 2: Global average of the Historical V-DEM Female Political Empowerment index (1789-1900
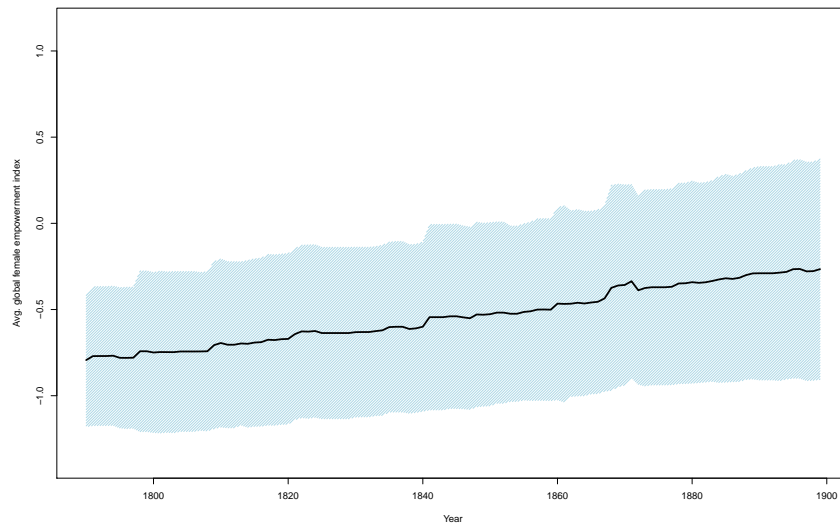
The confidence bands reflect the yearly global standard deviation

covering the 1817-2007 period. This applies a different battle-death threshold (of 1000 deaths) than UCDP/PRIO, but this is less problematic than it appears: Since the UCDP/PRIO coding

procedure is very conservative (ie. it needs verification from several independent sources for each battle-death), and the Correlates of War data are not as conservatively coded, we believe these two sources are less discrepant than they appear. We combine these two sources into a conflict variable spanning the period 1817-2016, registering COW conflicts until 1945, and UCDP conflicts after 1945. Our results are not driven by the construction of this conflict variable: When analyzing the COW and UCDP data separately, we find qualitatively similar results. When comparing the two measures, it is clear that they have almost identical results in the time-periods when they overlap (see Appendix, table A5), and this indicates that results do not hinge on the combination of cow and ucdp data (which is undertaken to maximize historical scope and generalizability).

Our baseline models investigate conflict onset specifically, censoring all conflict years that are not years of conflict onset. We estimate a standard civil-conflict onset logit model, that accounts for temporal dependence using linear, cubed and squared peace-year terms. In addition to this, we add controls to our baseline model using extant studies of the origins of female empowerment to guide our choice of confounders. We include GDP per capita to capture general income level, but also trends in technological development that should be highly correlated with income. Since GDP is negatively linked to conflict and assumed to positively impact Female political Empowerment, this is included as a control in the baseline models. We also include (the log of) population, since larger countries see more conflict, and should have a higher domestic variation in gender norms.

To capture institutional variation, we include democracy and democracy squared (measured using the Polyarchy index from V-Dem) to account for the fact that female political empowerment could reflect the general level of democracy in a country, and since numerous studies suggest a link between democracy and civil war (see e.g.., Hegre and Nygård, 2014).[3]

To capture the global diffusion of female empowerment norms, secular trends in technology and culture, as well as the waxing and waning of civil conflict over time, we include year-fixed effects. These capture global secular trends in female political empowerment and civil conflict. Since many of the theories of the origins of gender equality highlight deep-rooted cultural and historical factors, we also include country-fixed effects. These will pick up factors such as agricultural history and

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[3]We also replicate the results with an alternative measure of democracy, that only registers how clean elections are (the variable "clean elections index" from V-DEM), with no emphasis on universal suffrage (for women).

culture. Since country-fixed effects makes for quite conservative tests (excluding all between-country variation), we also estimate random-intercept models finding similar results.

We include a number of additional controls in robustness tests, to investigate the sensitivity of our results to observable (and potential unobservable) confounders. Results from tests including these variables are discussed after the discussion of our baseline results.

5   Results

First, we probe whether there is a general link between female political empowerment and conflict from 1817 until today, and in which time-periods this is most evident. The first two columns of table 1 consider the association between the (historical) FPE index and the log odds of conflict onset[4].

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[4]We also replicate the baseline models with OLS instead of logit estimation. These are less reliant on functional form assumptions than the logit model, but have other issues relating to heteroscedasticity and nonsensical point estimates. At any rate, the baseline result is robust and retained in these OLS Models.

Table 1: Logit models of conflict onset

	(1.1)	(1.2)	(1.3)	(1.4)	(1.5)	(1.6)	(1.7)	(1.8)	(1.9)
								UCDP	
Outcome:				Conflict onset $t+1$ (COW and UCDP)					
Time period:	1817-2013					1900-2013		1946-2013	
FPE	-0.956***	-1.177**	-1.493***	-0.855	-1.774***	-2.707***	-2.865**	-2.690***	-2.730*
	(-3.46)	(-2.76)	(-3.99)	(-1.38)	(-4.27)	(-4.06)	(-2.71)	(-3.79)	(-2.37)
GDP p.c.			-0.403***	-1.019***	-0.474***	-0.238*	-0.916***	-0.198	-0.624**
			(-4.28)	(-6.22)	(-4.94)	(-2.13)	(-4.23)	(-1.79)	(-2.60)
L(population)			0.402***	0.326	0.388***	0.360***	0.386	0.330***	0.226
			(7.61)	(1.76)	(6.78)	(7.51)	(1.39)	(6.76)	(0.69)
Democracy			6.553***	7.424***	7.519***	6.402***	8.590***	6.038***	9.367***
			(4.69)	(5.50)	(6.25)	(4.36)	(5.10)	(3.52)	(4.66)
Democracy^2			-7.193***	-8.178***	-8.318***	-7.111***	-8.843***	-6.314***	-9.599***
			(-4.50)	(-5.59)	(-6.16)	(-4.40)	(-4.75)	(-3.31)	(-4.33)
Peaceyears	-0.0906***	-0.0589***	-0.0635***	-0.0316**	-0.0539***	-0.0581***	-0.0358**	-0.0596***	-0.0202
	(-10.13)	(-5.98)	(-7.37)	(-2.93)	(-5.86)	(-5.57)	(-2.71)	(-5.51)	(-1.33)
Peaceyears^2	0.00106***	0.000799***	0.000753***	0.000469*	0.000654***	0.000712***	0.000630**	0.000702***	0.000388
	(8.00)	(4.56)	(5.40)	(2.47)	(4.57)	(4.27)	(2.71)	(4.29)	(1.41)
Peaceyears^3	-0.00000338***	-0.00000227**	-0.00000233***	-0.00000119	-0.00000193***	-0.00000231***	-0.0000199	-0.00000217***	-0.00000107
	(-6.49)	(-2.90)	(-4.15)	(-1.42)	(-3.33)	(-3.39)	(-1.96)	(-3.40)	(-0.89)
N	16566	16334	12988	12780	13216	9438	7352	7882	4592
Countries	182	180	173	171	182	173	107	169	77
Country-FE	✓	✓		✓			✓		✓
Country-RE					✓				
Region-FE	✓		✓			✓		✓	
Year-FE	✓	✓	✓	✓	✓	✓	✓	✓	✓

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Z statistics in parentheses. Standard errors are clustered on countries. Intercept omitted from table. Years of conflict incidence that are not years of onset are censored.

Column 1.1 displays a parsimonious model with peace-year terms, year- and region-fixed effects. This model includes the most observations by far (N=16566), which is the "effective N" without observations in years with no conflict onset. In this model, the FPE coefficient is in the expected direction (β =-0.956) and precisely estimated (Z-score=-3.46). This indicates that countries with higher levels of female political empowerment have lower conflict risk ceteris paribus. Column 1.2 introduces country-fixed effects, and is much more demanding, as it drops all time-invariant information that is country-specific. In this model, FPE is similar and negative (β =-1.177), while slightly less precise (Z-score−2.76). This indicates that most of the correlation between female political empowerment (when using the historical measure) and conflict is attributable to between-country variation.

However, important societal developments such as income growth, and democracy, can affect both the evolution of FPE and conflict. Column 1.3 enters GDP, population and the democracy terms into the baseline model as covariates (with no country-fixed effects). In this model, the sample is somewhat reduced (due to missing values for the covariates), to 12988. Yet, the coefficient is negative and similar to the coefficient in model 1.1 (β =-1.493, Z-score=-3.99). Model 1.4 includes country-fixed effects. In this model, the coefficient is greatly reduced when contrasting with column 1.3, and is no longer statistically significant. Model 1.5 includes country-random intercepts, yielding a negative and precisely estimated coefficient. This patterns suggests that the relationship between the historical measure of FPE and conflict risk is mostly due to stable between-country differences, when considering the entire 1817-2015 period and using the *historical* FPE index (with no participation component).

One reason why the estimates weaken with country-fixed effects, while retained in e.g., random intercept models, could be little variation over time. This will be especially true in the 1817-1900 period, where there were few reforms that altered the empowerment of women (such as women's right to vote), and also when using a measure that does not include participation. To see if results differ for the contemporary female political empowerment index which covers the period from 1900 onward and includes political participation, we run similar analyzes as in 1.1-1.4 using the contemporary FPE index and studying the 1900-2015 period. We expect to find stronger

relationships for this period, in particular because this is when female political participation took off, initially in European countries and then spreading to other parts of the globe. We also expect the inclusion of female political participation to strengthen the FPE-conflict link. Columns 1.6-1.7 consider the association between conflict risk and the FPE index after 1900. These models display a quite strong negative link between FPE and conflict onset, also strongly evident in the conservative model including both year- and country fixed effects (1.7).

Finally, we look at only the 1946-2015 period. We zoom in on this period since most of our additional controls in further robustness tests are restricted to it, and because it is covered by the UCDP measure of conflict, which is arguably considered a gold standard. These models (1.8-1.9) show a strong link between FPE and conflict risk.

Is the FPE-conflict link of substantive importance? A simulation of model 1.3 indicates that when holding all other variables at their mean, and increasing a country's FPE index from its minimum to maximum value, annual conflict risk drops from roughly 30% to around 5%. This means that conflict risk is almost *five times higher* in maximally patriarchal countries than in countries where women are highly empowerment, when other factors (such as GDP) are held at their mean values. This relationship is displayed in figure 3, which shows simulated probabilities of conflict onset, as FPE moves from its minimum to its maximum value, with covariates held at means.

Figure 3: Simulated probability of conflict onset as FPE increases
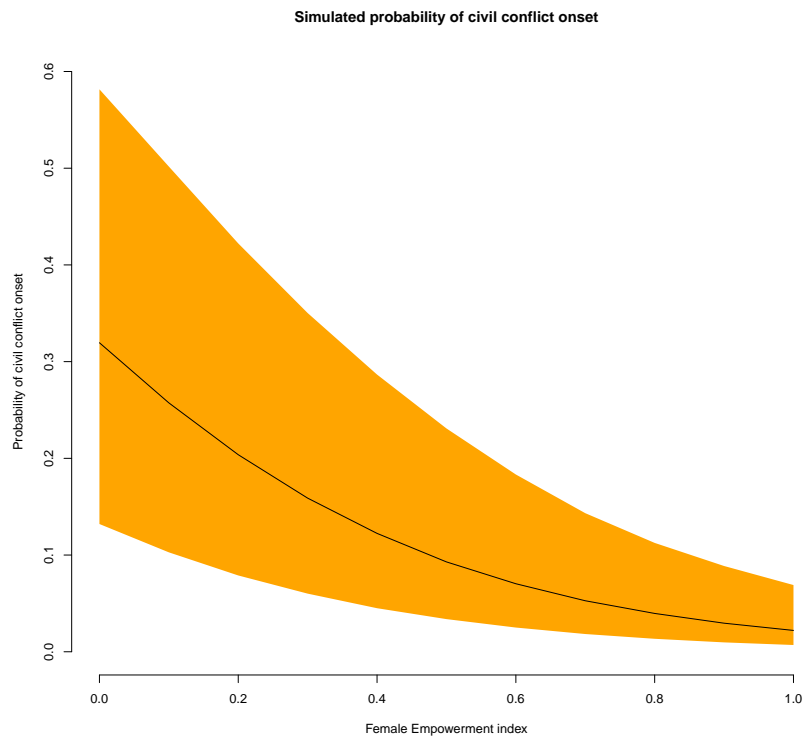
Simulated probability of civil conflict onset

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Z statistics in parentheses. Country-clustered SE's. Intercept omitted from table. Y

Table 2: Logit models of conflict onset looking at sub-components of the female political empowerment index, 1900-2015

	(A1)	(A2)	(A3)	(A4)	(A5)	(A6)	(A7)	(A8)	(A9)	(A10)
					Outcome: UCDP/COW conflict onset $t+1$					
Female legislators	-0.0201									
	(-1.69)									
Female journalists		-0.0289**								
		(-3.15)								
Freedom of movement			-0.118							
			(-1.82)							
Freedom from forced labor				-0.0877						
				(-1.22)						
Womens CSO participation					-0.138*					
					(-2.04)					
Womens property rights						-0.0576				
						(-0.90)				
Womens access to justice							-0.187*			
							(-2.36)			
Freedom of discussion								-0.148		
								(-1.72)		
Power distributed by gender									-0.271***	
									(-3.63)	
Female suffrage										-0.153
										(-0.95)
Democracy	4.480**	5.945***	5.638***	5.404***	5.555***	5.121***	6.052***	6.019***	5.343***	4.962***
	(2.88)	(4.72)	(4.08)	(4.12)	(4.18)	(3.79)	(4.44)	(4.04)	(4.19)	(3.87)
Democracy^2	-6.367***	-7.547***	-6.858***	-6.780***	-6.818***	-6.471***	-6.894***	-6.865***	-6.238***	-6.450***
	(-3.60)	(-4.89)	(-4.28)	(-4.34)	(-4.32)	(-4.07)	(-4.27)	(-4.29)	(-3.94)	(-4.16)
GDP p.c.	-0.283**	-0.302**	-0.456***	-0.464***	-0.448***	-0.452***	-0.473***	-0.468***	-0.468***	-0.465***
	(-2.69)	(-3.20)	(-5.02)	(-5.19)	(-5.04)	(-4.98)	(-5.23)	(-5.24)	(-5.17)	(-5.17)
L(population)	0.357***	0.382***	0.392***	0.387***	0.404***	0.396***	0.391***	0.391***	0.411***	0.395***
	(6.09)	(6.65)	(6.96)	(6.72)	(6.99)	(6.90)	(6.84)	(6.72)	(7.36)	(6.76)
peaceyears	-0.0806***	-0.0740***	-0.0815***	-0.0820***	-0.0811***	-0.0817***	-0.0803***	-0.0805***	-0.0815***	-0.0820***
	(-6.23)	(-6.58)	(-8.34)	(-8.39)	(-8.40)	(-8.30)	(-8.13)	(-8.19)	(-8.26)	(-8.35)
peaceyears2	0.00102***	0.000921***	0.000993***	0.00101***	0.000990***	0.00100***	0.000978***	0.000983***	0.00101***	0.00101***
	(4.76)	(5.15)	(6.19)	(6.30)	(6.27)	(6.19)	(6.11)	(6.07)	(6.24)	(6.30)
peaceyears3	-0.00000347***	-0.00000302***	-0.00000320***	-0.00000327***	-0.00000320***	-0.00000325***	-0.00000313***	-0.00000318***	-0.00000334***	-0.00000330***
	(-3.81)	(-4.15)	(-4.85)	(-4.99)	(-4.94)	(-4.89)	(-4.75)	(-4.76)	(-5.00)	(-5.03)
N	8343	10633	12785	12785	12749	12785	12727	12785	12785	12785
Region-FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Year-FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Z scores in parentheses

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

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Z statistics in parentheses. Country-clustered SE's. Intercept omitted from table.

Table 2 dis-aggregates the sub-components of Female Political Empowerment, that are available items in the V-DEM database. It includes: Female legislators, Female journalists, Freedom of movement for women, Freedom from forced labor for women, Womens Civil Society Organization (CSO) participation, Womens property rights, Womens access to justice, Freedom of discussion for women, and Power distributed by gender. All variables are coded such that positive scores entail more female empowerment. Each variable is hard to evaluate in isolation, and the most plausible theory connecting female political empowerment to conflict refers to female political empowerment as a macro-concept rather than detailed indicators. Nevertheless, we believe a more narrow study on specific indicators could yield suggestive clues to the *kind* of female political empowerment that matters, providing important clues to further research. Several such suggestive patterns appear in table 2. First, all coefficients have the expected sign; an increase in female empowerment when measured in each individual item is negatively associated with conflict risk. Second, four indicators stand out as particularly relevant: Female journalists, women's CSO participation, women's access to justice and power distributed by gender. That womens participation in media, law and civil society is strongly related to conflict interesting when considering the above discussed distinction between elite- and society-level female political empowerment. While elite-level measures, such as female legislators, are not sharply linked to conflict it seems grassroot-level measures, such as CSO participation, are.

In sum, tables 1 and 2 paint an interesting picture: FPE seems strongly and negatively linked to conflict onset, at least in the 20th century. Given this is arguably the most rigorous test of the link between FEP and conflict offered so far, this finding offers strong corroboration for the "feminization hypothesis". We also find that this relationship is particularly strong for measures related to women's participation and empowerment in crucial societal sectors such as journalism and civil society organizations, but less evident for measures tapping into women's elite participation such as female legislators. This could suggest the link between female empowerment and peace has a lot to do with grassroot-participation of women rather than participation at elite levels. While we do not consider this very conclusive evidence for such a mechanism, we think this offers some enticing suggestions to explore in further research.

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5.1 Norms and participation

The results above could reflect the effect of women being *more involved in political institutions*, but also the *culture and prevailing norms in societies where women participate in politics*? While it is hard to sharply distinguish between these two, especially since they feed into each other, we will here attempt to investigate both channels. To do so, we draw on indicators of "gender-equal" norms from the World Values Survey (World Values Survey, 2014) (WVS) and European Values Survey (EVS). Specifically, we use two items asking respondents whether they agree with: 1) "When jobs are scarce, men should have more right to a job than women", 2) "On the whole, men make better political leaders than women do". These two survey items are combined into one indicator – Female Empowerment Values. Positive values represent more gender-equal responses. One important challenge with the data from World Values Survey and European Values Survey is the large number of missing values, particularly in the time-series. WVS currently only contains 6 survey rounds, spanning the 1980-2015 period, which means countries have a maximum of 5 observations over time, many have considerably less. Many countries are also not covered in the survey at all. As listwise deletion is likely to lead to sample-selection bias, given countries and years are not missing at random random, we conduct multiple imputation using Amelia II Honaker, King and Blackwell (2011). This has proven fruitful for the WVS data in particular (Dahlum and Knutsen, 2017). The imputation accounts for the time-series cross-sectional structure of the data, and produces a total of 5 different datasets. We conduct the imputation for all countries covered in the V-Dem data set, but also conduct robustness tests based on imputation of all countries covered by the World Values Survey. In the following, we present estimations based on the average values across the 5 imputed datasets. Since our imputation is limited by the start- and end-points of the WVS, the time series of each imputed dataset is 1980-2015. For details on the imputation procedure, see the appendix.

The imputation gives us a measure of Female Empowerment Values, spanning 166 countries from 1980-2015. This measure is, as expected, strongly correlated with the Female Political Empowerment index (they share 70% of their variance).[5] This aligns with our theoretical discussion on

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[5]This raises a problem for estimating their individual coefficient with precision, and should yield lower t-values.

how female empowerment norms and female political participation are highly interlinked through mutual reinforcement. Yet, the data also indicates these two aspects do not necessarily go together, which underscores our notion that they are two distinct (although highly related) concepts. Several countries in our sample score highly on components the Female Political Empowerment index that also score low on Female Empowerment values. The discrepancy is highest between Female Empowerment Values and components of the Female Political Empowerment index related to women's political participation. For example, several countries in Sub-Saharan Africa, such as Zimbabwe, Ethiopia and Tanzania comparatively have high shares of female legislators, with at least 30 percent women. Yet, all three countries have very patriarchal norms according to WVS. For instance, while Ethiopia had 39 percent women in parliament in 2015 according to V-Dem, only 5 countries in the world had lower levels of female empowerment norms that year. In comparison, several other countries with similar levels of female legislator shares (around 30 percent female legislators or more), such as Poland, Lithuania and Taiwan, are among the top 10 percent countriew with the most gender-equal norms.

In table 3, the combined indicator of Female Empowerment Values is added to models investigating the link between the aggregate FPE index and civil war. In models 3.1-3.2, we replicate models 1.6 and 1.7, now using the imputed dataset, with the restricted post-1980 sample. The results still indicate a negative association between FPE and civil conflict, also when including country fixed effects (although the Z-score is significantly weakened). When controlling for female empowerment values in models 3.3 and 3.4, the coefficient estimates for FPE decreases substantially in size. This is consistent with the notion that a female-friendly culture promotes women's political empowerment, while also reducing the risk of civil conflict. But, interestingly, there is still some evidence the female political empowerment index is negatively related to civil conflict. The coefficient is still negative and significant in the model with region-FE's. To be sure, the Z-score is reduced in model 3.4, which includes country FE's and control for values, but the coefficient and standard errors remain stable enough that we suspect to find a negative and more precisely estimated coefficient

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This increases the likelihood of making type II errors, but decreases the likelihood of rejecting the null for each coefficient. Hence, if either turns out to be insignificant in the presence of the other, we can not draw firm conclusions about its relative unimportance to conflict. However, if both turn out significant, with precise estimates, this offers evidence that both matter.

in a longer time-series. This indicates that, while a substantial share of the relationship between FPE and civil conflict is related to societal norms, there is also some evidence of an independent link running from women's participation in politics to peace. Meanwhile, the coefficient estimate for gender-equal norms is negative and statistically significant at conventional levels in both models 3 and 4, suggesting such norms are strongly conducive to peace when controlling for indicators of female political participation.

Table 3: Logit models of conflict onset, 1981-2015

	(3.1)	(3.2)	(3.3)	(3.4)
Time period		(1980-2015)		
		Outcome: Conflict onset $t+1$ (UCDP)		
Female empowerment values			-2.417**	-2.308**
			(-2.66)	(-2.84)
FPE	-3.649***	-4.067*	-2.419*	-2.782
	(-3.79)	(-2.07)	(-2.24)	(-1.38)
L(population)	0.287***	0.420*	0.270***	0.426*
	(3.71)	(1.97)	(3.48)	(2.00)
GDP p.c.	-0.130	-0.455	-0.0160	-0.355
	(-0.62)	(-1.25)	(-0.08)	(-0.97)
Democracy	7.164**	1.318	7.408**	1.757
	(2.64)	(1.25)	(2.75)	(1.64)
Democracy^2	-6.923*	-6.123*	-6.727*	-5.727
	(-2.27)	(-2.10)	(-2.21)	(-1.71)
Peaceyears	-0.183***	0.0651	-0.192***	0.0666
	(-3.46)	(1.07)	(-3.59)	(1.09)
Peaceyears^2	0.00603*	-0.00548	0.00643**	-0.00557
	(2.55)	(-1.86)	(2.70)	(-1.90)
Peaceyears^3	-0.0000579*	0.000105**	-0.0000616*	0.000107**
	(-2.06)	(2.70)	(-2.19)	(2.77)
N	2938	1839	2938	1839
Countries	145	74	145	74
Country-FE		✓		✓
Region-FE	✓		✓	
Year-FE	✓	✓	✓	✓

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Z statistics in parentheses. Standard errors are clustered on countries. Intercept omitted from table.

Finally, we investigate the interaction between female-friendly norms and FPE. Since it is not straightforward to interpret interaction coefficient in logit models, we create marginal effect plots of the interaction. Figure 4 shows the marginal change in predicted probability (of conflict) for one unit increase of the FPE index, for different values of Female Empowerment Values. This plot shows that female political empowerment only has a conflict reducing effect in more gender-

equal societies, suggesting these two factors are mutually reinforcing. This has several potential explanations. First, it could reflect that these societies have other traits that inoculate against conflict, i.e. a non-causal explanation. But, and more interesting from the perspective of theories linking female empowerment to conflict, it may also suggest that female representation that is not backed up by more gender-egalitarian attitudes has weaker effects on peace. A potential micro-level explanation for this could be that female representation in patriarchal cultures selects for- and socializes women representatives to behave in stereotypically masculine ways, leading to the absence of pacifying effects.

Figure 4: Graphing the interaction effect between FPE index and female-empowerment norms
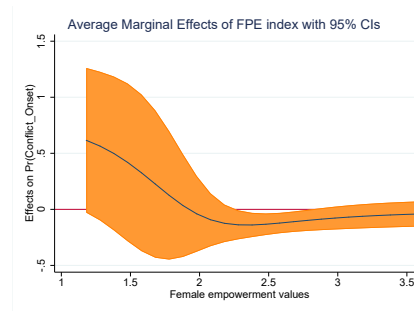
Notes: Based on model 3.3 in table 3, with added interaction term.

5.2   Additional tests

While the associations uncovered above are strong and consistent with expectations, they could potentially reflect different forms of bias. Crucially, it is often claimed that *conflict* conduces female political empowerment, and not the other way around. The most popular version of this holds that war creates opportunities for female political empowerment during and after war. Two mechanisms are proposed. First, wars open up new spaces for women to partake in the economy and society more generally, as men are disproportionately involved in fighting. The participation of women lingers on after the conflict, leading to greater female empowerment post-conflict (Tripp, 2015). Second, women are often active in peace movements, and are either informally or formally involved in peace negotiations. This spills over into a higher level of female inclusion in post-war politics. In line with these arguments, studies indicate that female political empowerment increases after

conflict, with a particular emphasis on Africa (see e.g., Hughes and Tripp, 2015).

Could this bias our results? Since we control for time since the last conflict, this is less of a concern. However, potential endogenous relationships can be much more subtle. If the female empowerment trend is caused by a conflict, and starts *during* a conflictual period with low levels of violence, but right before the conflict reaches the battle-death threshold, then it is a possibility that it is the (low-level) conflict that is partly causing Female Political Empowerment and not vice versa. In this scenario, the conflict causes changes in female empowerment. We strongly doubt this possibility, since most studies claiming that conflict causes female empowerment are focused on high-intensity conflicts involving large parts of the population. However, and to be on the safe side, we still investigate this possibility, running models regressing conflict onset on *future* changes in the FPE index (5, 8 and 10 years). If there is a pre-treatment trend whereby conflict is the driver of empowerment, we should see that future female political empowerment is linked to current conflict. These are in table A1 in the appendix, showing no indication future changes in the FPE index are associated with (current) conflict onset.

An additional threat to our result is the potential for omitted variables that condition both female political empowerment and conflict risk. A clear example of this would be if women's involvement in peace movements to pre-empt conflicts increases female political empowerment more generally, while at the same time being a response to latent conflict risk. Another example would be if female political empowerment resulted from changes in popular attitudes in a more liberal direction that could also spur aversion to political violence.

To address such issues relating to omitted variables, we evaluate how sensitive our results are to selection on observable confounders, using this as a guide to (potential) selection from the unobservables (Altonji, Elder and Taber, 2005; Blackwell, 2013). This starts from the premise of proportional selection, namely that the bias stemming from included covariates can inform us about the threat from omitted variables. This assumption is particularly warranted when the covariates are *selected for their ability to predict conflict* (and their strong relationship to female political empowerment). The bias generated by these selected controls, when they are left out, should inform us about the bias stemming from other unmeasured factors. To do this, we first

Table 4: Selection from observables as a guide to the unobservables

Controls in the full set	$\frac{\beta_C}{\beta_C - \beta_R}$	Sign of bias from observables
Baseline controls	-2.85	positive
Baseline + Egalitarian-, deliberative-, participatory- and liberal democracy indices	-2	positive
Baseline + Fertility rate, infant mortality, urbanization	-2.85	positive
Baseline + Growth, education, income inequality	-2.18	positive
Baseline + All controls	-2	positive

estimate a restricted model, R, that only includes the FPE index, and register the coefficient β_R. Subsequently, we estimate models using different control sets, C, and register the coefficients β_C. Then we calculate the selection from observables: $\frac{\beta_C}{\beta_C - \beta_R}$. The result, often referred to as AET-stats (after Altonji, Elder and Taber (2005)), tells us how much bigger the estimated (controlled) coefficient is than the selection bias stemming from observable covariates.

Table 4 presents AET stats from different control sets. The first set includes the baseline controls. The second set adds several democracy-indices from the V-Dem dataset. These are included to tap various democracy concepts (such as liberal democracy, and egalitarian democracy) that are correlated with the FPE index but are not exhausted by controlling for electoral democracy. If their omission greatly biases the FPE result, then we would expect the coefficient to be pulled towards zero when they are included. The second set of controls include several demographic variables that could bias the link between FPE and conflict, specifically fertility rates, infant mortality and urbanization. The next set includes additional economic variables that could potentially be omitted confounders: Economic growth, education levels, and income inequality, while the final set includes all controls. All variables are taken from the V-Dem dataset.

As table 3 shows, the AET stats for all control sets range from about 2 to 2.8. This suggests that the selection-from-unobservables must be at least double that of selection from observables to make the estimate zero. While this performance is only moderately strong (compare with e.g. Nunn, 2008), another fact makes us increasingly confident in the robustness of our result to selection-from-unobservables: namely, that all the observable controls (when excluded) pull the coefficient towards zero, inducing a bias that pulls in the direction of a null-finding. Hence, when we include controls that are highly plausible confounders (relating to institutional characteristics,

socio-economic development and demographics) the coefficient becomes more strongly negative. This suggests that the relationship is probably stronger than what our models currently indicate: If we had continued to add covariates, assuming they behave similarly to our included confounders, our expectation is that the relationship would become more strongly negative. The robustness of our results to e.g., the inclusion of liberal democracy in the model, indicates that the main result is specifically related to female empowerment and not part of a more general pattern linking liberal democracy/civil liberties to peace.

As a complement to our causal sensitivity tests, we run instrumental variable models. Here, we draw on the the findings of Alesina, Giuliano and Nunn (2013) that historical plow use - when conditioning on other historical features - predicts contemporary female subordination. This is discussed in much greater detail in the appendix. In brief, the instrumental-variable analysis uses historical plow-use (and related historical variables from Alesina, Giuliano and Nunn (2013)) to instrument for contemporary gender norms. This yields instrumental variable results consistent with the main patterns from the tests above. However, there are significant caveats to the IV analysis, relating to instrument strength and the exclusion restriction, discussed at length in the appendix, that make us somewhat cautious to lean heavily on the IV models. Rather, we treat the IV results as an additional piece of evidence that, relying on different identifying assumptions that, while imperfect, may lend some additional credence to a causal interpretation of our results. We refer interested readers to section A3 of the appendix for a discussion and presentation of the IV analysis.

As an additional test, we investigate the interaction term between democracy and female empowerment, to test whether the mechanisms linking female empowerment to peace are stronger in democracies, as indicated in Melander (2005). This test is performed in the Appendix (section A10), using the V-DEM measure of electoral democracy from the main analyses. It reveals that the effects of female empowerment are stronger as democracy increases, yielding further support for the findings in Melander (2005) with new data.

We perform a range of additional tests to shore up the robustness of our results (see appendix), including Generalized Additive Models, different lag-lengths etc. All of these tests retain the

negative relationship between FPE and conflict risk. We also evaluate how much the FPE index improves the performance of our baseline model when it comes to predicting civil conflict (Ward, Greenhill and Bakke, 2010, see e.g.,). We perform both in- and out-of-sample evaluations of this question, finding that female political empowerment substantially improves predictive performance (see appendix, A9).

6   Conclusion

Female political empowerment has greatly increased over the course of the 20th century. This paper offers the first comprehensive global test with data from two centuries probing the relationship between female political empowerment and conflict. Drawing on two versions of the female political empowerment index from V-DEM and Historical V-DEM, we offer a much more comprehensive test of this relationship than what is offered in extant literature, with better temporal coverage, the ability to deal with time trends and country-specific omitted factors as well the potential to suggest what mechanisms could be at play. We also estimate instrumental-variable models, and conduct causal sensitivity tests to gauge the threat to a causal interpretation of this finding. These empirical tests yield solid evidence that societies where women are highly empowered are less likely to experience civil conflict. Exploring the 1817-2015 period, we find that this relationship is strongest in the 20th century, and particularly so post WWII. We believe this is due to the fact that female political empowerment increased (and thus varied) most markedly in this period. When probing more detailed measures of female political empowerment, we find particularly strong relationships for factors that indicate bottom-up grassroot participation, such as civil society participation by women. This presents an important nuance to previous work that has focused on women's participation in "elite" politics (such as the legislature and the executive).

Another important insight gained from our empirical investigation is that the uncovered relationship seems due to both female political empowerment in the form of women's participation in politics *and* due to female-friendly norms reducing willingness to use violence. Indeed, this paper is the first to systematically document that gender-equal values are associated with less civil conflict, and that this holds even when controlling for formal civil liberties and women's political

representation. Probing this relationship further, we show that female political empowerment and female-friendly norms are reinforcing: The societies where female political empowerment is backed up by a more gender-equal culture are at the lowest risk of civil war. Our findings also corroborate an important "cultural" correlate of war the extent to which societies tolerate and respect women in the study of civil war. While the dominant trend in large-n approaches to studying conflict has been focused on economic or formal-institutional factors, variables capturing informal norms and cultural dimensions are increasingly incorporated (e.g., Stein, 2015; Inglehart, Puranen and Welzel, 2015; Hudson and Matfess, 2017). Our findings add to this growing body of research.

In sum, our study suggests that the benefits of bringing women into politics and civil society reach far beyond goals of gender equality, through a negative effect on political violence.

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