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# Women's Political Empowerment: A New Global Index, 1900-2012\*

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## **Abstract**

The V-Dem index on women's political empowerment provides information about women's civil liberties, civil society participation, and political participation globally. Spanning from 1900 to 2012, three dimensions of empowerment, and over 170 countries, it is among the most comprehensive measures of women's empowerment available. This paper presents a conceptualization of women's political empowerment and provides an overview of the construction of the index and operationalization of its three sub-dimensions: Women's civil liberties, civil society participation, and political participation. Compared to other indices measuring women's empowerment, such as the GDI, the GEM, the GII and the CIRI data on human rights, the V-Dem index allows more precise measurement and is superior in temporal scope and coverage of countries of the Global South. The paper demonstrates the benefits of this new index and its sub-dimensions through several empirical illustrations.

# 1. Introduction

Women's political empowerment is increasingly recognized as critical to modern states. The recommendations and declarations of a wide range of international bodies—led primarily by the United Nations, but including the Inter-Parliamentary Union, African Union, Southern African Development Community, Commonwealth, Council of Europe, European Union, Organization for Security and Co-operation in Europe, and Organization of American States—urge member-states to achieve a minimum of 30 percent women in all elected positions (Krook 2006, p. 114, Towns 2010). And, given the inclusion of women's political representation in one of the Millennium Development Goals, women's political empowerment is now a high-priority issue in international development cooperation (Mosedale 2014). In policy statements such as the Beijing Platform for Action and the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), there is a dual focus: First, that women's empowerment is an intrinsic goal in itself and second, that it may bring about other processes of prosperity (Malhotra et al. 2002). Scholars and practitioners alike see a link between women's political empowerment and outcomes for women, for children, and for society as a whole (e.g. Sen 1997, Bratton and Ray 2002, Chattopadhyay and Duflo 2004, Gerrity, Osborn, and Mendez 2007, Swiss et al. 2012, Beaman et al. 2012).

But despite several attempts to measure and track women's empowerment, researchers still do not have measures that can help us test important theories. Existing measures combine disparate dimensions of power (Malhotra et al. 2002); have been misused (Schuler 2006) or do not have the spatial or temporal coverage to truly test theories (Cueva Beteta 2006, Klasen 2006). Here, we present a new index that overcomes some of these limitations. The Varieties of Democracy project (V-Dem) Women's Political Empowerment Index gauges women's political empowerment with significant spatial and temporal scope. The new index includes three sub-dimensions: civil liberties, civil society participation, and political participation. The index is based on assessments from thousands of country experts who provided ordinal ratings for dozens of indicators for the period 1900 to 2012.

The paper proceeds as follows: The next section defines women's political empowerment. We then describe the existing data environment of indicators gauging women's empowerment generally and with respect to human rights. We proceed to describe the construction of the new index. We correlate our measure with some existing measures as a means of external validation. The final section of the article demonstrates the application of our index by investigating the question of whether economic development and democratic transitions lead to women's political

empowerment. We conclude by summarizing the merits of the new index and its sub-indices and outline some future areas for promising applications.

## 2. Theoretical Definition

Women's empowerment is a multifaceted concept and is typically defined with several dimensions, such as "rights, resources, and voice" (World Bank 2001), "resources, perceptions, relationships, and power" (Chen 1992), or "resources, agency and achievements" (Kabeer 1999b). Women's empowerment has been discussed in terms of economic power and access to resources (Parveen 2008), power within the household (Mason and Smith 2003), a process of gaining control (Sen 1997), and involvement in politics (Norris and Inglehart 2003).

Our focus is on women's *political* empowerment. Politics is the arena for societal decision making. Individuals who hold formal and official positions in government allocate scarce resources, e.g., tax revenues, and direct resources to some groups at the expense of others (Bratton and Ray 2002, Franceshet and Piscopo 2014). Decisions by politicians affect people's individual choices by encouraging some behaviors and outlawing others. To hold a political position is to hold a position of authority. Yet, not all decision-making takes place in elite spheres of society. Those with formal or informal political power hold power over other social institutions, such as the family or education, and are able to codify particular practices into law (Martin 2004). Political elites have the power to enforce their decisions, sometimes with force. Therefore, looking at the makeup of individuals in formal positions of power and important positions in civil society highlights who is legitimated to make society-wide decisions in that society.

We define women's political empowerment as a *process of increasing capacity for women, leading to greater choice, agency, and participation in societal decision-making*. Our definition is three dimensional, capturing the three most prominent strands in thinking on empowerment: that of choice, that of agency, and that of participation.

### Choice

One strand of thinking on empowerment emphasizes individuals' ability to make choices over areas of their lives. Choice is central to Naila Kabeer's influential writings: "One way to think about power is in terms of the ability to make choices: to be disempowered, therefore, implies to be denied a choice" (1999a, p. 426-427). Choice is echoed in Gita Sen's (1993) definition, where

empowerment is “altering relations of power...which constrain women’s options and autonomy” (cited in Desai 2010, p. 5) and in Malhotra and colleagues’ (2002, p. 6) definition: “women should be able to define self-interest and choice, and consider themselves as not only able, but entitled to make choices.”

A focus on choice stresses the importance for women of being able to make meaningful decisions on critical areas and key aspects of their lives (Kishor 2000). What are these key aspects? They relate to a battery of rights that are fundamental yet historically denied women. It is now appreciated that women’s rights are human rights (Bunch 1990). Thus, for women’s political empowerment, choice is linked to the human rights discourse, which implies ability and freedom for women (see Kerr 1993).<sup>1</sup> Human rights include freedom of expression, association and assembly, freedom to move, practice religion, and participate in the selection of political leaders and freedom from violations to physical integrity (Cingranelli and Richards 2010).

Formal legal frameworks are most typically considered in the human rights literature (see Landman and Carvalho 2009). But for women, customary violations of rights, regularly embedded in informal culture rather than formal legal frameworks, are as important to consider. These are most likely to be present in the domestic or local life of women: “household and interfamilial relations are a central locus of women’s disempowerment in a way that is not true for other disadvantaged groups” (Manuh 2006, p. 4). In defining the dimension of choice in women’s political empowerment, therefore, we must assess needs and interests that are “self-evident, emerging out of the routine practices of everyday life” (Kabeer 1999, p. 441).

Having the freedom to move is an essential aspect of women’s empowerment. Clausturation – the confinement of women in the domestic sphere – is seen as a fundamental part of disempowerment (Govindasamy and Malhotra 1996, Kishor 2000). The process of leaving this sphere, such as “[women’s] ‘ability to move about one’s village’ or ‘ability to visit a health center without getting permission’” is one empirical measure of female empowerment (Malhotra et al. 2002, p. 20). Legal restrictions on travel without permission for women may exist alongside customary restrictions.

A basic level of control over resources also furthers empowerment. This entails the freedom from forced labor and the right to engage in paid labor but also the freedom to own property. Friedrich Engels ([1884] 2010) attributed women’s subordination to the rise of male-owned private property resulting in women’s increasing economic reliance on men. Some feminist theorists argue that women’s inheritance and control of property is the most important

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<sup>1</sup> The notion of human empowerment was popularized through Amartya Sen’s (1999) writings on human development. As noted by Christian Welzel, the term can refer to both individuals and societies and when it comes to the former often is defined as “the development of *personal agency* – that is, a stage of maturation at which one is conscious about one’s values and chooses actions accordingly” (p. 40).

factor in securing economic and other powers (Blumberg 1984, Chafetz 1984, 1990). When women cannot own land or hold bank accounts, it legitimates other discriminatory customs (Braun and Dreiling 2010). Anderson and Eswaran (2009) stress that it is not income for women per se that is important for their autonomy, but rather having a livelihood that is not dependent on a husband. When women have control of property, land, and loans it broadens their economic power and their ability to exercise choice in a range of domains (Ashraf et al. 2010, Burroway 2012).

Finally, drawing on the insight that women's rights are human rights, access to justice is critical for the choice dimension of women's political empowerment. If women are not able to contest threats to their enactment of routine practices in everyday life through the justice system, then customary practices that restrict women's choice remain unchanged. To illustrate, if a judicial system does not implement equal rights for women to hold property or to inherit resources in their rulings, then legal rights will be of less importance (see Benschop 2002).

*Thus, to have choice and to be able to make meaningful decisions in critical areas of their (daily) lives women must have basic freedom of movement, have property rights, be free from forced labor, and be treated as equals in the justice system.*

## **Agency**

A second strand of thinking on empowerment focuses on agency. Malthotra et al. (2002) state "the second element of empowerment that distinguishes it from other concepts is agency—in other words, women themselves must be significant actors in the process of change that is being described or measured" (p. 7). Agency is the ability to be an active agent of change through the ability to "define one's goals" (Kabeer 1999, p. 438).

For women's political empowerment, agency is deeply entwined with voice. Gendered power relations may hamper the ability for women to speak freely, to discuss politics among their peer group, or to engage in public debate (Charmes and Wieringa 2003). To be politically empowered, women, like men, must have the "freedom to express any political opinions in any media and the freedom to form or to participate in any political group" (Bollen 1986, p. 568).

Agency implies second dimensional power – the ability to influence the political agenda (Lukes 1974). If women are unable to publicly air their policy preferences, then they cannot exert "civic agency" (Welzel 2013) or make demands on the state for support and on the society itself for change (Young 1993). Activism, through collective organizations and "the growth of civil society and participatory development methods at both macro- and meso-levels of society," are "...mechanisms by which empowerment takes place" (Malhotra et al. 2002, p. 4). Further,



Hashemi and Schuler (1993) argue that empowerment includes women's ability to interact effectively in the public sphere, which suggests a need to access media and the ability to get issues on the media agenda. Journalism mediates opinion formation. So, if "the news is made by men, it is thought to reflect the interest and values of men too" (Van Zoonen 1998, p. 34). Therefore, the share of women in journalism may affect the ability of women to get attention for their issues on the agenda.

In short, *to be able to exert agency and define their goals, women must have freedom of discussion, be able to participate in civil society organizations (CSO), and be represented in the ranks of journalists.*

## **Participation**

A third line of thinking on empowerment stresses the role of participation. Regarding women's candidacy and election to political seats, this is a central feature of political empowerment. Feminist theorists have provided arguments for descriptive representation, or the idea that there must be descriptive similarity between representatives and constituents because racial, ethnic, and gender groups are uniquely suited to represent themselves in democracies (Phillips 1995, Williams 1998). In the case of women, the argument is that due to different socialization and life experiences, women are different from men. Thus, "women bring to politics a different set of values, experiences and expertise" (Phillips 1995, p. 6) and must be present in the political arena. Arguments for descriptive representation suggest that it is not enough to have formal political equality and the protection of freedom through civil liberties. Instead, women need to be numerically represented in politics with a legislative presence (Young 1997).

Arguments for descriptive representation are now commonplace in international statements on women. For example, the 1995 Beijing Platform for Action stated, "Women's equal participation in decision making is not only a demand for simple justice or democracy but can also be seen as a necessary condition for women's interests to be taken into account" (United Nations 1995, paragraph 181). In 2008, the Southern Africa Development Community (SADC) approved a protocol on gender and development with the goal of increasing women's representation in the public and private sectors to 50%, including by using affirmative action (SADC 2008).

The participation dimension of women's political empowerment corresponds to Lukes' first dimensional power – the ability to prevail in a conflict over overt political preferences (Lukes 1974). Women must have a presence in sufficient numbers to engage in overt conflict or influence during decision-making. Previous empirical studies on women's empowerment often include political participation in operational definitions. For instance, Hashemi et al. (1996)

included campaigning for a political party or protesting in their composite indicator of women's empowerment. Others use women's participation in politics – on the village level as well as in national parliament – as a measure of empowerment (e.g. Malhotra et al. 1995, Chattopadhyay and Duflo 2004, Norris and Inglehart 2003, UNDP 2015). In line with this commonly used operational definition of women's empowerment, an increasing share of women in legislatures is one of three indicators for the goal of “promoting gender equality and to empower women” in the Millennium Development Goals (United Nations 2015).

*To summarize, participation in politics requires a descriptive presence in formal political positions and that women have an equal distribution in the distribution of power.*

## **Process**

As with other definitions of empowerment (e.g. Oxaal and Baden 1997, Kishor 2000, Malena and Heinrich 2005, Malhotra and Schuler 2005) we stress women's political empowerment as a process. Thus, change in empowerment must be assessed over time, as a transition, as a movement away from disempowerment (Sen and Mukherjee 2014). Kabeer (2005, p. 13) clearly adheres to this view in stating that empowerment refers to “the processes by which those who have been denied the ability to make choices acquire such an ability. In other words, empowerment entails change”. A longitudinal perspective is crucial for women's political empowerment, as some rights that almost are universal today were not present in the past (see Batliwala 1994). For these reasons, in addition to the need to facilitate comparisons across countries, we must also facilitate them over time (Kabeer 1999).

## **3. Prior Measures: Issues and Availability**

The Gender-Related Development Index (GDI) and Gender Empowerment Measure (GEM) were traditionally the most commonly-used indicators of women's empowerment. These indices were advanced by UNDP in 1995 to complement the Human Development Indicator (HDI). The GEM indicator measured gender inequality in three dimensions: “economic participation and decision-making, political participation and decision-making, and power over economic resources” (UNDP 2004, p. 70). The rationale guiding the GDI was to “track overall human development and include a penalty for gender gaps in human development – that is, a gender-sensitive measure of human development” (Klasen and Schuler 2011, p. 3). These two measurements have been quite influential (see the discussion in Schuler 2006) yet were

abandoned in 2010 by the UN (Klasen 2014). They were replaced with the Gender Inequality Index (GII) and, to some extent, the Inequality-adjusted Human Development Index (IHDI) (UNDP 2015). Using indicators on a range of issues (maternal mortality ratio, adolescent fertility rate, share of parliamentary seats held by each sex, attainment at secondary and higher education and labor market participation rate) the GII is calculated so that it reflects gender-based disadvantages in three dimensions – reproductive health, empowerment and the labor market (UNDP 2013). The GII was available in 2014 across 149 countries (UNDP 2014, p. 39).<sup>2</sup>

Other authors have proposed alternatives to these dominant measures.<sup>3</sup> The Cingranelli and Richards (CIRI) project on human rights (see Cingranelli and Richards 2010, Cingranelli et al. 2014) is an expert based survey that assesses to what extent countries provide certain rights in law as well as to what extent these are adhered to in practice. This data contains two relevant measures: Women’s Economic Rights is a composite measure of ten rights related to the economic sphere while Women’s Political Rights is a composite index consisting of five aspects of political rights. Earlier versions of this dataset also contained a measure of Women’s Social Rights (Cingranelli and Richards 2010). The two CIRI indicators are available across 200 countries (although coverage in time is limited for some countries), the years 1981 to present.

In 2009, the Social Institutions and Gender Index (SIGI) was advanced by the OECD. The measure gauges gender inequality in institutions rather than outcomes and combines twelve indicators into five sub-indices: Family Code, Physical Integrity, Son Preference, Civil Liberties, and Ownership Rights (see Branisa et al. 2009, OECD 2009). The SIGI measure is directly concerned with inequalities rather than levels of empowerment.<sup>4</sup> This index covers three cross-sections of 108 countries in 2009, 2012 and 2014.

## **Spatial and Temporal Coverage of Existing Data**

Since women’s empowerment is generally seen as a process, a measure is not adequate if it only covers the most recent years of more economically developed countries – nations where women’s empowerment, on average, is the highest. Specifically, prior measures are seen as biased in coverage towards highly industrialized countries. Cueva Beteta (2006, p. 223) finds that missing data prevented estimation of the GEM index for 60% and 90% of medium and low human

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<sup>2</sup> UNDP has also constructed a Gender Development Index (abbreviated GDI, but not to be confused with the previous measure with the same name) in 2010. This index measures the ratio between the HDI of women and men and rank countries in closeness to equality (a value of 1) (Klasen 2014).

<sup>3</sup> Klasen and Schuler (2011) discuss some notable attempts to gauge gender inequality and women’s empowerment across countries and also propose some ways in which the GDI and GEM can be improved.

<sup>4</sup> Thus, it is not countries in Northern Europe that score the highest (i.e. where women are in absolute terms most educated and, in general, present in political positions). Instead, countries such as Paraguay Croatia, Kazakhstan Argentina and Costa Rica were the top-ranking five countries in 2009. In the 2014 edition, the SIGI replaced the system of rankings with a broader classification based on levels of discrimination.

development countries, respectively. The result is “limited research on gender empowerment and equal opportunity in non-Western societies” (Syed 2010, p. 283). A related problem is the frequent shifts in methodology of the UNDP’s measure of women’s empowerment. The UNDP state themselves in their recent Human Development Report that “because national and international agencies continually improve their data series, the data—including the HDI values and ranks—presented in this Report are not comparable to those published in earlier editions” (UNDP 2014, p. 155). Thus, while the dismantling of the GEM and GDI indices and the recent introduction of the GII may be welcome in terms of improving conceptualizations, it disfavors comparisons across time. Thus, current alternatives do not meet the need of policymakers or scholars for indicators that are comparable and available on an annual basis (see Haq 1995) and measure the situation in a majority of low-income countries over time. Notably, the end of section 5 contains a thorough comparison in coverage (temporal and spatial) between previous measures and the index presented in this article (see Figures 1 and 2).

### **Other Issues in Measurement**

A measure of women’s empowerment may address the absolute status of women or relative inequality between men and women. It is important to consider absolute measures for some aspects of empowerment. For example, whether women can move freely is relevant to their empowerment regardless whether men can move freely too. That is, when both men and women experience equally low freedoms, scoring women as highly empowered relative to men would not capture women’s lived experience. Instead, women’s absolute situation needs to be recorded. But other aspects of women’s empowerment are best assessed in relation to men. For example, women’s formal political representation is best studied as the gender ratio of members in a parliament. A combination of absolute and relative measures allows assessment of women’s standing relative to men as well as their absolute attainment of certain fundamental civil liberties.

Second, critics of prior measures have stressed that women’s empowerment must consider all women, not simply elite women. Christian Welzel (2013, p. 47) argues that in assessing the state of empowerment in the citizenry of a nation, “the critical question is inclusion – What is the typical condition of *most* people in a society?” Previous measures of women’s empowerment, such as the GEM, are criticized for elite bias (Klasen 2006). For example, Cueva Beteta (2006, p. 222) argues that in the GEM, “the existence of gender inequality among the less economically advantaged population — which is usually greater — is simply not accounted for” (p. 222). A measure of women’s empowerment must therefore address the experiences of all women, elite and nonelite.

A final issue in the measurement of women's empowerment is to precisely measure empowerment within relevant domains such as economic, education, and political. Separate measurement by domain acknowledges that women may make gains in one domain faster than another and therefore allows separate assessment of women's progress in each. The utility of measuring women's political empowerment apart from empowerment in other domains such as education or economics also allows us to understand the process by which women are empowered across domains. For example, some theorists argue that women's economic empowerment must come before political empowerment (Blumberg 1984, Chafetz 1984, 1990). Such a theory is not testable when a measure of empowerment conflates the economic and political domains. The GDI in particular has been criticized for the large influence from GDP in its measurement (Dijkstra and Hanmer 2000) which limits hypothesis testing about GDP and women's empowerment.

#### **4. Constructing three indices on women's political empowerment**

To construct indices that capture women's capacity of choice, agency, and participation in societal decision-making process, we utilize nine indicators collected by the V-Dem project.<sup>5</sup> The V-Dem project is currently the largest dataset on democracy and relevant issues, collecting data for 173 polities in the globe for more than 400 indicators from 1900 to 2012 (for 60 countries also for 2013-2014). In addition to gathering information from existing data sources the dataset compiles expert ratings for questions that require evaluation. Different from existing datasets, which usually rely on a small group of experts to rate all countries, the V-Dem project used over 2,500 local and cross-national experts to provide judgments. Experts' ratings are aggregated through a Bayesian item response theory model (Pemstein et al. 2015). The model takes into account the possibilities that experts may make mistakes and have different scales in mind when providing ratings (Bollen and Paxton 1998). The measurement model to aggregate experts' ratings, generate country-level scores, and calibrate estimates across countries was explicitly designed to facilitate comparisons over time and across countries. In practice, ratings provided by a large number of "bridge-coders", who coded more than one country, were utilized to ensure that national experts' ratings were comparable across countries and regions. Indices based on the V-Dem dataset are expected to perform better with regard to the comparability and availability than all existing indices.

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<sup>5</sup> See <https://v-dem.net> for more information about the project and the codebook.

## Civil liberties

To measure the dimension of *choice*, that is, whether women are able to make meaningful decisions of critical areas of their daily lives, we create *a women civil liberties index*, which combines four items: women’s freedom of domestic movement, freedom from forced labor, property rights, and access to justice.

The item “freedom of domestic movement for women” gauges to what degree women enjoy freedom of movement within the country. Coders are asked to assess the extent to which all women are able to move freely, in daytime and nighttime, in public thoroughfares, across regions within a country, and to establish permanent residency where they wish. It is rated from zero (virtually no women enjoy full freedom of movement) to four (virtually all women enjoy full freedom of movement).

The indicator “freedom from forced labor for women” measures whether adult women are free from servitude and other kinds of forced labor. Involuntary servitude occurs when an adult is unable to quit a job she desires to leave – not by reason of economic necessity but rather by reason of employer’s coercion. This includes labor camps but not work or service which forms part of normal civic obligations such as conscription or employment in command economies. Coders score countries on a scale from zero (female servitude or other kinds of forced labor is widespread and accepted (perhaps even organized) by the state) to four (female servitude or other kinds of forced labor is virtually non-existent).

“Property rights for women” measures to what extent women enjoy the right to private property. Private property includes the right to acquire, possess, inherit, and sell private property, including land. Limits on property rights may come from the state (which may legally limit rights or fail to enforce them); customary laws and practices; or religious or social norms. This question concerns the right to private property, not actual ownership of property. The measure is coded on a scale ranging from zero (virtually no women enjoy private property rights of any kind) to five (virtually all women enjoy all, or almost all, property rights).

The variable “Access to justice for women” gauges the extent to which women enjoy equal, secure, and effective access to justice. It specifies to what extent women can bring cases before the courts without risk to their personal safety, trials are fair, and women have effective ability to seek redress if public authorities violate their rights, including the rights to counsel, defense, and appeal. It is rated from zero, where secure and effective access to justice is non-existent, to four, where this is almost always observed.

To create the women civil liberties index we conduct a Bayesian factor analysis (BFA) of these four indicators at the level of country-year. The results are shown in Table 1. The factor loadings indicate the relationship between each observed indicator and the underlying latent factor, women’s civil liberties. They are all positive and significant, suggesting a strong association between each of these variables and the latent concept. Uniqueness, the estimated error variance, can be viewed as the proportion of variance of each indicator accounted for by the latent factor. All the error variances are estimated to be below 0.5, implying that over half of the variability in each variable is accounted by the one-dimensional factor model. The women civil liberties index is constructed by weighting the four variables based on their factor loadings.

**Table 1: Women civil liberties index (BFA estimates)**

<b>Label</b>	<b>Factor loading</b>	<b>Uniqueness</b>
Freedom of domestic movement for women	.728 (.023)	.471 (.028)
Freedom from forced labor for women	.728 (.022)	.468 (.025)
Property rights for women	.774 (.021)	.401 (.026)
Access to justice for women	.798 (.020)	.361 (.025)

Note: Numbers in the parentheses are estimated standard deviations. The model run through the `factanal` command in the MCMC package for R (Martin et al. 2011). n=16531 country-years.

### **Civil society participation**

For the dimension of *agency*, we construct a *women civil society participation index* to measure women’s ability to engage in public debate freely. This index is derived from factor scores that combine three items; women’s freedom of discussion, participation in civil society organizations (CSO), and representation in the ranks of journalists. These three variables are all based on experts’ judgments.

“Freedom of discussion for women” measures whether women are able to openly discuss political issues in private homes and in public spaces. It specifies the extent to which women are able to engage in private discussions, particularly on political issues, in private homes and public spaces (restaurants, public transportation, sports events, work etc.) without fear of harassment by other members of the polity or the public authorities. The indicator is coded from zero (Not respected. Hardly any freedom of expression exists for women. Women are subject to immediate and harsh intervention and harassment for expression of political opinion) to four (Fully respected. Freedom of speech by women in their homes and in public spaces is not restricted). “Women’s participation in civil society organizations” is an item that measures both if women are prevented from participating in civil society organizations and if such organizations pursuing women’s interests are prevented from taking part in associational life. The variable is coded from

zero (almost always) to four (almost never). The variable “Female journalists” asked experts to estimate the percentage (%) of journalists in the print and broadcast media who are women. The variable is hence expressed in percent and coded as an interval scale.

The results of a BFA model of these three variables are shown in Table 2. All three variables load on the same dimension. As the table shows, all the factor loadings are positive and significant, indicating a strong association between the latent factor and women’s freedom of discussion, their participation in civil society organizations, and the percentage of female journalists. Furthermore, all the estimated error variances are below or slightly above 0.5, suggesting that the underlying latent factor, women’s civil society participation, accounts for a sizable amount of variability in each of these observed variables. The women civil society participation index is also constructed by aggregating the three variables based on the factor loadings.

**Table 2: Women civil society participation index (BFA estimates)**

Label	Factor loading	Uniqueness
Freedom of discussion for women	.678 (.021)	.538 (.025)
CSO women’s participation	.844 (.023)	.288 (.033)
Female journalists	.702 (.020)	.508 (.023)

Note: Numbers in the parentheses are estimated standard deviations. The model run through the `factanal` command in the MCMC package for R.  $n=16158$  country-years.

## Political participation

For the third dimension, *participation*, we construct a *women political participation index*. To effectively engage in political decision-making, women need to have a presence in sufficient numbers in formal political positions. To measure the extent to which women are descriptively represented in formal political positions, this index combines the legislative presence of women and political power distribution by gender. Specifically, the variable “lower chamber female legislators” measures the percentage (%) of the lower (or unicameral) chamber of the legislature that is female. The variable is compiled by V-Dem from existing data sources and is thus not an expert-based evaluation.<sup>6</sup> In contrast, the variable “Power distributed by gender” is an expert-coded assessment of the extent to which political power is distributed according to gender. The indicator ranges from zero (men have a near- monopoly on political power) to four (men and women have roughly equal political power). We create the women political participation index by averaging the standardized versions of the two variables.

<sup>6</sup> See the codebook (Coppedge et al. 2015a, 2015b) for details of original data sources. This variable is missing if a country does not have a legislature (either does not exist or has been closed down).



The correlation coefficients between the three indices are listed in Table 3. Women civil society participation index is more closely related to the other two indices, while the correlation between the civil liberties and political participation indices is lower. The positive correlations between each pair are all significant. The coefficients suggest that scores on the three dimensions tend to covary; but for a substantial amount of country-years, the ranking on the three dimensions can be quite different. In some countries, women may enjoy full civil liberties but not have a sufficient presence in formal politics. This three-dimensional framework captures the changes in distinct aspects of women’s political empowerment in different countries.

**Table 3: Correlations between the three dimensions**

	Civil liberties	Civil society participation	Political participation
Civil liberties			
Civil society participation	.755		
Political participation	.466	.727	

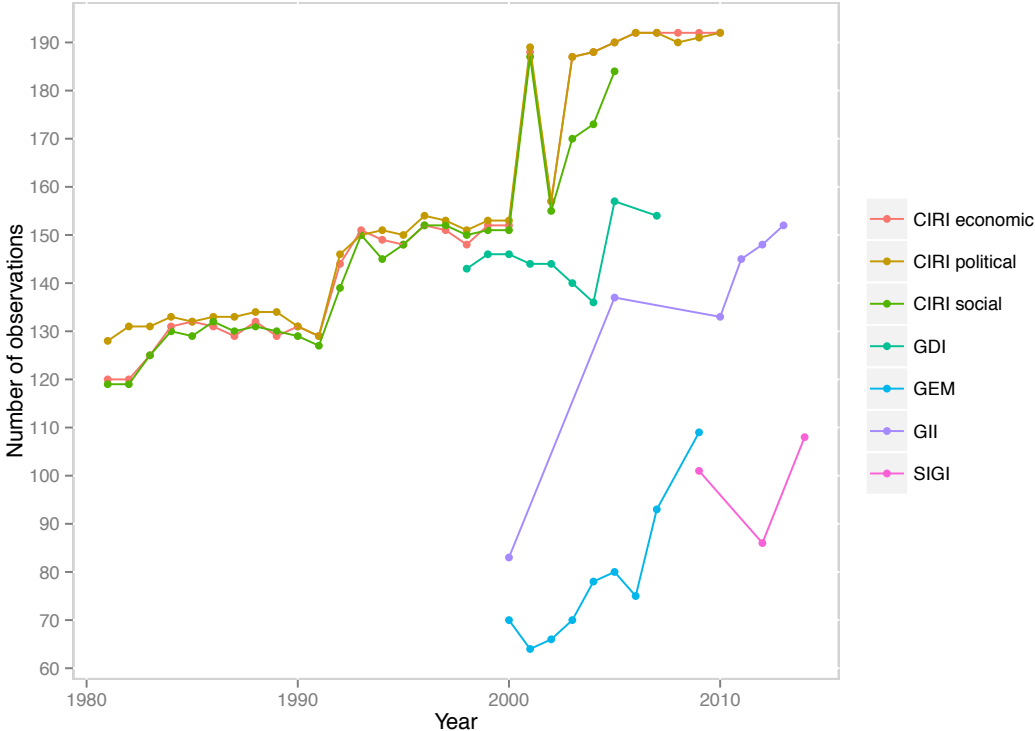
To construct an overall *women political empowerment index*, we take the average of these three dimensions. Table A.1 in the appendix presents the women’s political empowerment index for all countries in 1950, 1970, 1990, and 2010. It is evident from the table that there is a great variety of women’s political empowerment over time and across countries.

**Temporal and Spatial Coverage – comparisons to previous measures**

As discussed in the previous section, existing measures of women’s empowerment was criticized for their poor coverage in low-income countries and across time. Figure 1 provides the spatial and temporal coverage of prior comparative measures of women’s empowerment. Practically, cross-national research on women’s empowerment would like to have availability of the measure for as wide or representative a sample and for as many time points as possible. This figure clearly illustrates that the indicators introduced by the United Nations has not been coherently compiled across time. The coverage of GII is patchy over the years and the availability of the former GDI and GEM ends abruptly in the late 2000’s. Notably, the table furthermore shows that the GEM only covered about 70-90 countries per year, on average, out of which relatively few are low-income countries (cf. Cueva Beteta 2006). As is evident from the columns of the table few indicators stretch especially far back in time. The CIRI data is the most comprehensive in this regard, covering a large number of countries since 1981. However, the index presented in this article is still more encompassing. As a comparison, while the CIRI indicator on Women’s Political Rights amounts to the largest total number of country-years among previous measures,

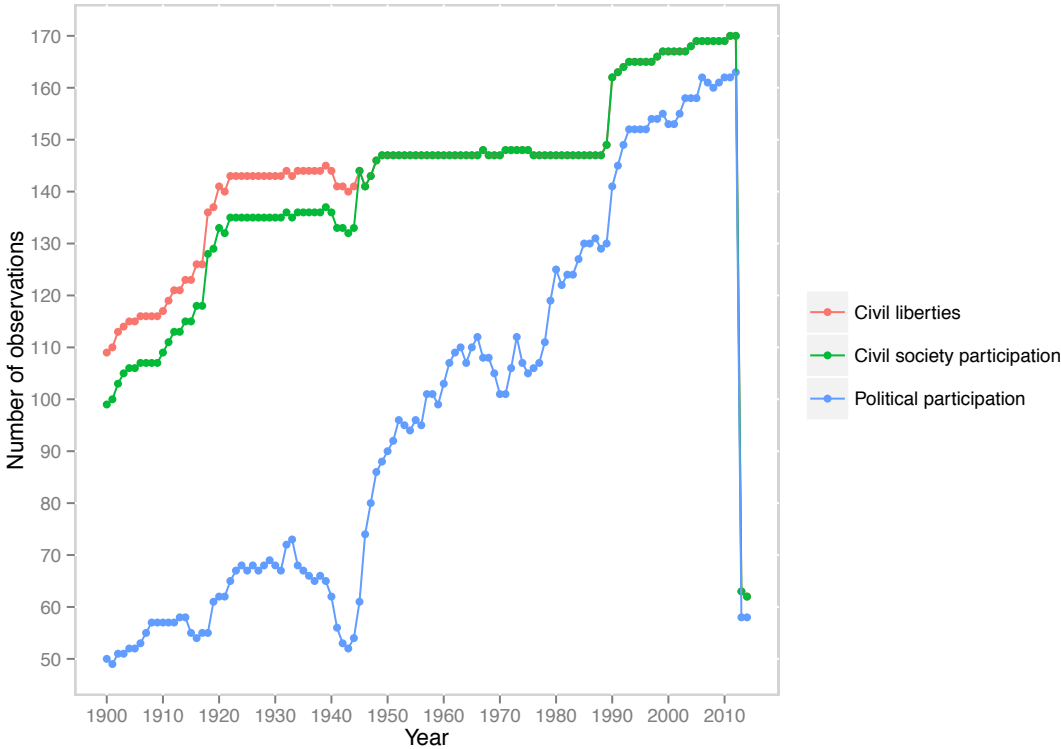
our indicator with the best scope – the indicator on civil liberties – covers almost four times as many data points across countries and years (see Figure 2 for comparison).

**Figure 1: Coverage of existing indices**



To compare the coverage of prior measures to the index advanced in this article, see Figure 2. This figure presents the coverage of the three sub-indices. As noted previously, we lack observations for the political participation index when the country does not have a legislature. Therefore, the availability of the political participation dimension measure is relatively more limited than the other two dimensions. However, compared to the existing measures discussed in the previous section, the coverage of the V-Dem indices is far more extensive both spatially and temporarily.

**Figure 2: Coverage of the V-Dem women political empowerment indices**



**5. Exploring validity**

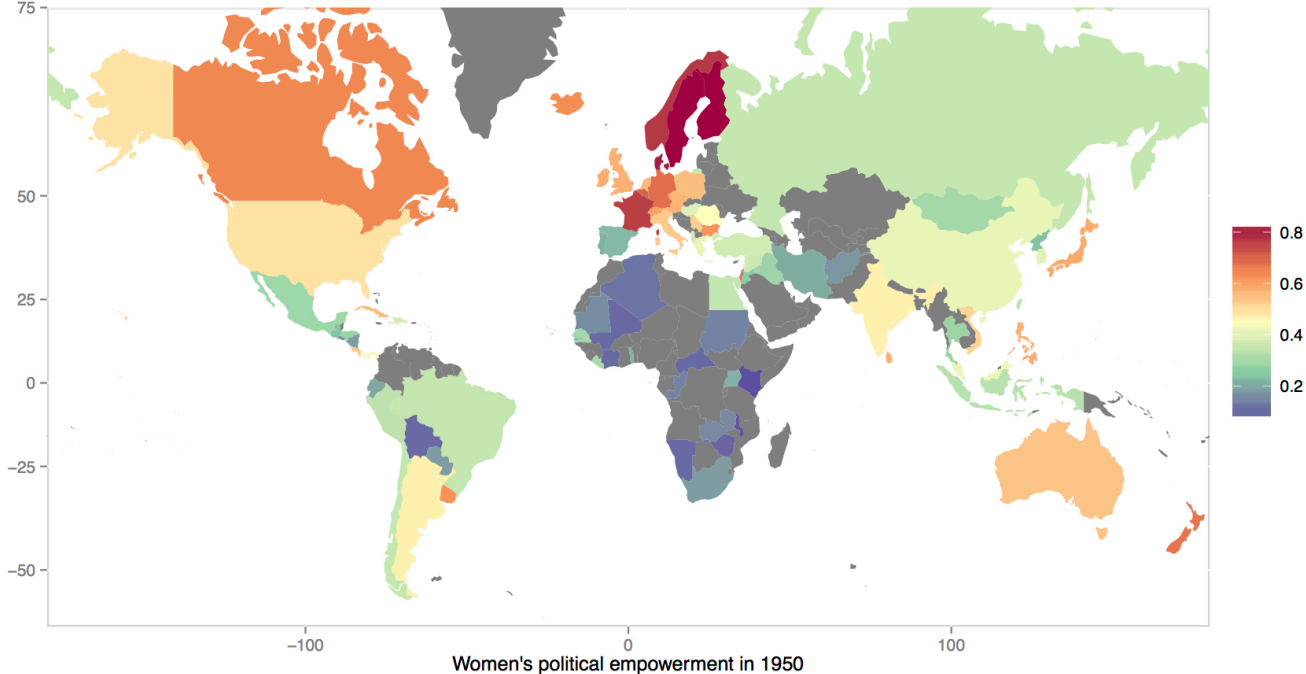
To conduct a concise assessment of the validity of the index and its sub-components the following sections explore this in three steps; first, by providing a visualization of the difference in women’s political empowerment comparing global maps from 1950 and 2010, second, by discussing three country trajectories during the years 1900-2012 and third, by comparing the correlations between the V-Dem indices with previous empowerment measures.

**Two Global Outlooks of Women’s Political Empowerment, 1950 and 2010**

The two maps, Figure 3 and Figure 4, illustrate in a snapshot how the V-Dem index on women’s political empowerment is distributed across the globe in two time-points, in 1950 and 2010. As evident in Figure 3, very few countries reach high levels of political empowerment for women in 1950. It is practically only in Northern Europe that countries reach high levels during this time period.<sup>7</sup>

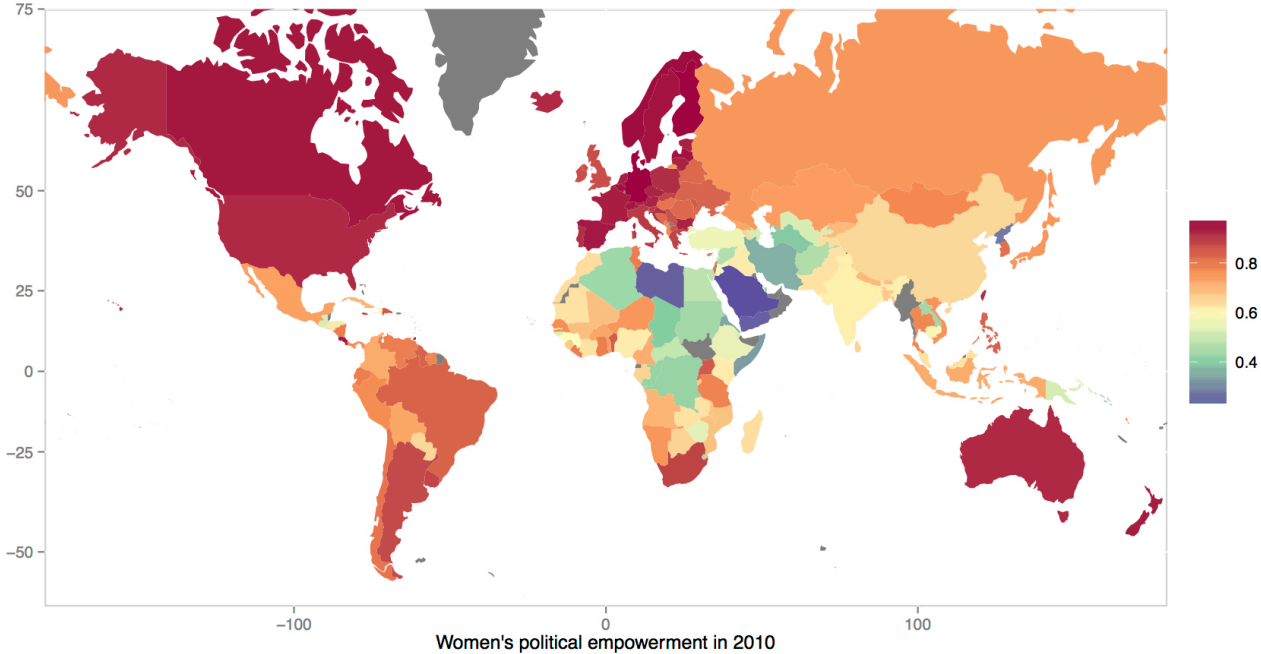
<sup>7</sup> Due to missing values for the political participation index (when the country does not have a legislature) we cannot estimate values for the index in several countries, especially in Africa.

Figure 3: V-Dem index on women’s political empowerment in 1950



Turning to Figure 4, it is evident that there has been a major improvement in women’s political empowerment across the globe the last decades. To illustrate the differences between these two time periods Latin America may serve as a good example: While most countries in the region has values below the middle-point of the index in 1950, they are generally well above this threshold sixty years later. Perhaps to little surprise, this is also the case with high-income countries in North America and Western Europe – most countries in these two regions reach very high levels of women’s political empowerment in the 2010 snapshot. Contrastingly, there is a noticeable cluster of countries with low levels of women’s political empowerment in the region Middle East and Northern Africa. Most examples of nations with the lowest political empowerment of women are found in this region. As shown in the section below, one such example of a country with very few rights granted for women is Saudi Arabia.

Figure 4: V-Dem index on women's political empowerment in 2010



### Country Trajectories

The maps discussed in the above section report the aggregated index on women’s political empowerment. To illustrate how a country may score on the three sub-indices we therefore present the trajectories for three countries with somewhat different developments across time.

Figure 5: Country Trajectory – Denmark

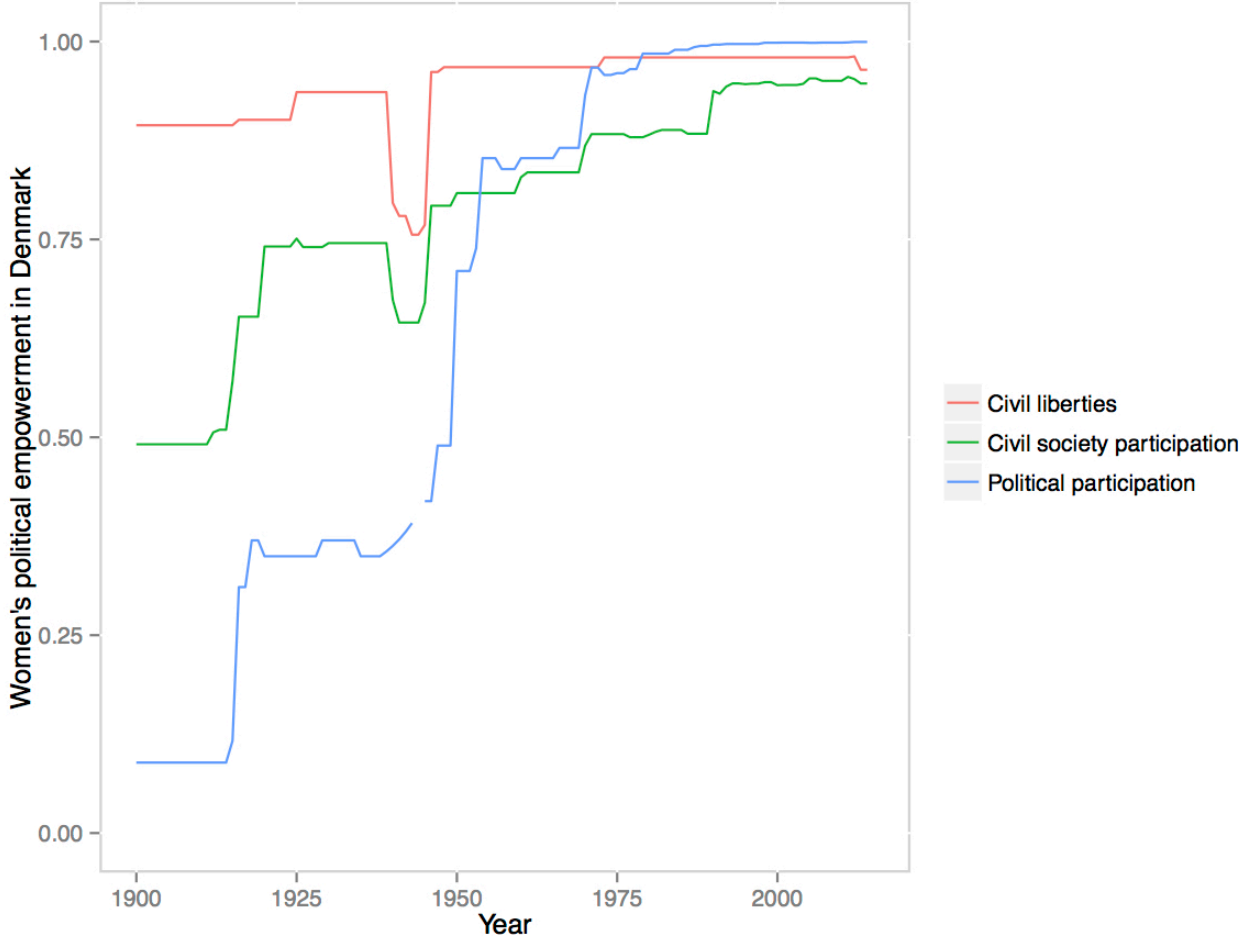
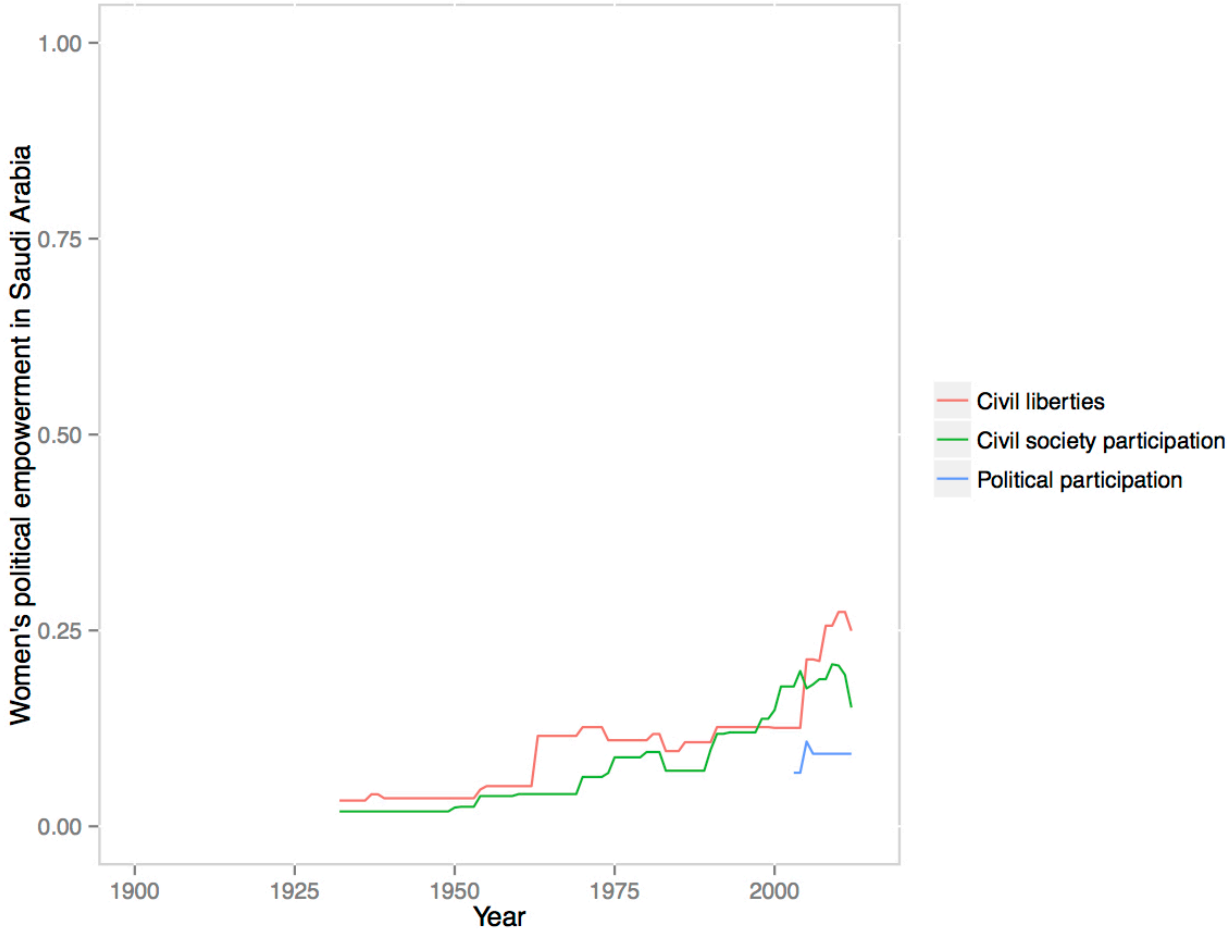
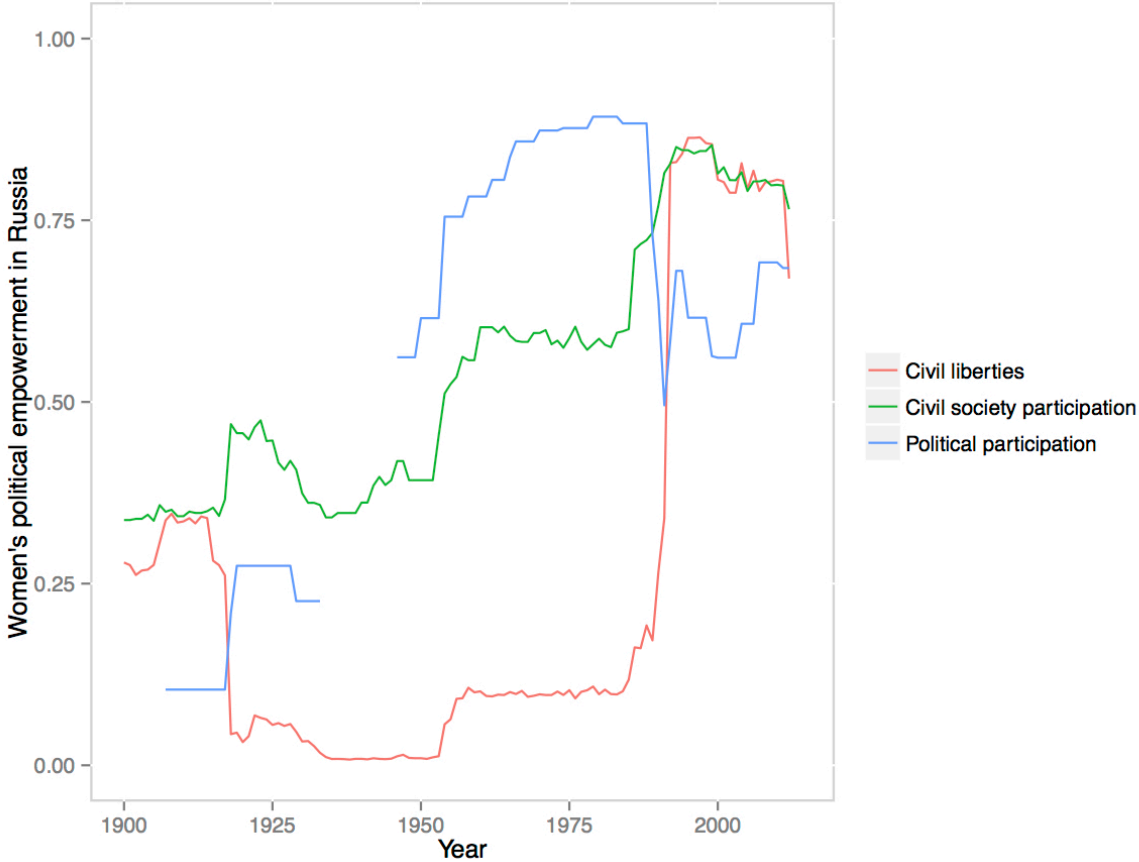


Figure 6: Country Trajectory - Saudi Arabia



**Figure 7: Country Trajectory – Russia**



As evident in Figure 5, Denmark is an example of a country that currently grants women very high levels of political empowerment, almost reaching top-scores in the different dimensions for the last three decades. Yet, the trend reported in this figure also shows that the situation was very different in the beginning of the 1900, with low scores in the political participation dimension. As a contrast to the situation in Denmark, Saudi Arabia still exhibits extremely low levels of women’s political empowerment across the three sub-indices. Figure 6 exemplify that not all countries have had the same trajectory as Denmark. One other example of a sharp improvement in the political empowerment of women is found in Figure 7, outlining the historical trajectory of Russia. From this illustration it is evident that the fall of communist rule had a major impact on women’s political empowerment.

These trajectories also illustrate the benefit of viewing women’s political empowerment as a three dimensional concept: In many places – such as Denmark in the 1910’s and Russia in the 1990’s – there is a clear difference in how a country score in these three sub-indices. As seen in Figure 7, for Russia, the events in the early 1990’s brought a quick increase in civil liberties and



civil society participation – generally suppressed during communist rule. However, during this period of time there was a simultaneous decrease in the legislative presence of women – captured by the relatively sharp reduction in the political participation dimension of our index in these years.

## Comparisons with Other Measures

We discussed some limitations of the prior measures earlier. However, the V-Dem index on women’s political empowerment would be suspect if it does not have positive and significant correlations with these existing measures. Table 4 presents the correlations of our overall measure and its dimensions with several well-known indices from the literature. The magnitude of these correlations supports the validity of the V-Dem measure of women’s political empowerment. With regard to the overall women political empowerment index, the lowest correlation (0.51) with CIRI economic power measure still indicates a moderate relationship. Table 4 further indicates that the V-Dem measure correlates at about -0.71 with GII and at 0.81 with GEM.<sup>8</sup> These are all relatively strong relationships. The correlation with the V-Dem index is certainly in line with the correlations observed between other measures as well. For example, the correlations between GII and different CIRI indices range between 0.4 and 0.8.

**Table 4: Correlation coefficients between V-Dem women political empowerment index and existing indices**

	GII	GEM	GDI	CIRI economic	CIRI political	CIRI social	SIGI
GII	1.00						
GEM	-0.82	1.00					
GDI	-0.86	0.74	1.00				
CIRI economic	-0.66	0.61	0.54	1.00			
CIRI political	-0.38	0.69	0.20	0.35	1.00		
CIRI social	-0.79	0.64	0.57	0.72	0.44	1.00	
SIGI	0.62	.	.	.	.	.	1.00
V-Dem civil liberty	-0.66	0.66	0.59	0.47	0.37	0.50	-0.46
V-Dem civil society participation	-0.64	0.67	0.58	0.46	0.46	0.51	-0.49
V-Dem political participation	-0.55	0.82	0.46	0.42	0.64	0.54	-0.54
<b>V-Dem overall women political empowerment</b>	<b>-0.71</b>	<b>0.81</b>	<b>0.64</b>	<b>0.51</b>	<b>0.52</b>	<b>0.60</b>	<b>-0.60</b>

We also ran bivariate correlations between GDP per capita and the different indicators of women’s empowerment. These correlations are presented at the bottom of Table 5. As can be

<sup>8</sup> The negative correlation with GII is due to the fact that this indicator should be interpreted as 1 denoting high gender inequality.

seen in this table there is a fairly wide difference in how closely the other existing measures correlate with national levels of GDP per capita. The very high correlation with GDI for instance (0.92) is a reminder that one of the critiques against this measure was that its construct is highly determined by the GDP per capita in a country a given year (Dijkstra and Hanmer 2000). Notably, our index – and its three subcomponents – has a weaker correlation with GDP than the older indices. Especially, the political participation dimension (correlating at 0.43) is not strongly associated with GDP per capita. In general we believe that this illustrates a benefit with our approach – that our measures are not conflated with economic development, but instead more precisely measure the process of women’s political empowerment.

Table 5: Correlation coefficients between different women empowerment indices and ln GDP per capita

	Correlation with ln GDP per capita
V-Dem civil liberty	0.60
V-Dem civil society participation	0.55
V-Dem political participation	0.44
V-Dem overall women political empowerment	0.64
GII	-0.83
GEM	0.72
GDI	0.92
CIRI economic	0.49
CIRI political	0.22
CIRI social	0.5

## 7. Demonstration Analysis: Economic Development, Democracy and Women’s Political Empowerment

To illustrate the utility of the V-Dem index on women’s political empowerment– and its three sub-dimensions – we provide an empirical demonstration analysis to highlight how variation can be investigated across space and time. We choose a simple research question – to what extent can economic development and democratic quality in a country predict levels of women’s political empowerment?

Economic development has a strong, robust relationship to the formation of democracy (e.g., Burkhart and Lewis-Beck 1994) so we might expect it to positively affect women’s political empowerment as well. Economic development has proved to be quite important for gender inequality of all types (e.g., Pampel and Tanaka 1986, Semyonov 1980). Development can indicate some freedom from the daily tasks of living for the individuals of a country, which would be

expected to positively increase the number of women available for political office. The literature building on modernization theory would also suggest a relationship: as the composition of a nation's economy advances from an agrarian to a postindustrial society, the citizenry will develop post-materialist values that are beneficial for the empowerment of women (Inglehart 1997, Norris and Inglehart 2003). This process entails simultaneous processes of increased education opportunities for women, an increased presence of women in the formal labor force (see Iversen and Rosenbluth 2008) and – both due to factors of supply (more qualified and motivated female candidates), demand (an electorate who accepts and asks for female leaders) (Inglehart and Norris 2003) and opportunities brought along from changing norms within parties (Kittilson 2006) and from international examples (Towns 2010) – women entering positions of formal political power.<sup>9</sup> It is expected that the level of democracy in a country also has an important impact on women's political empowerment. The protection of liberal rights under democracy should improve women's liberal rights and participation in civil society organizations. The relationship between democracy and women's political participation is less clear. Scholars have found either no effect or a negative effect of democracy on the representation of women as legislators (Paxton 1997, Kenworthy and Malami 1999, Paxton and Kunovich 2003). Paxton et al. (2010) have pointed out that the relationship is not linear: democracy does not have a significant effect on women's political representation in the earliest period, but it does have influence over time.

We model these empirically using time-series cross-section analysis. To cure the potential issue of serial correlation and estimate the effects of our key independent variables distributed across time on women's empowerment, we conduct multivariate time-series regression in the form of an error correction model (ECM). As DeBoef and Keele (2008) have pointed out, the ECM is a general form model that imposes the fewest restrictions on parameters. In addition, an ECM can estimate both short-term and long-term effects of independent variables, and facilitate our understanding of how the effects of these independent variables are distributed across time. Economic development and democratic transition can either have immediate impacts on women's empowerment, or have longer-term impacts where the full effects are not realized all at once but last over time. For instance, some investments stemming from economic development may show themselves in society only after a longer period of years. An ECM allows to model these relationships by estimating both the contemporaneous effect of the changes in  $X$  at time  $t$

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<sup>9</sup> Our demonstration analysis is oversimplified. For example, there are possible feedback loops and reverse causality between economic development and women's empowerment. For example, Klasen (2002) suggests that societies with poor schooling rates for girls tend to have low economic development, since absence of human capital decreases growth. In its simplified form, our argument does not attempt to be novel or more nuanced than previous studies, rather simply to demonstrate the possibilities of analysis across a large number of countries and years.

on  $Y$  at time  $t$ , and a long-term effect of  $X_{t-s}$  on  $Y_t$ , where the effect lasts and is distributed across  $s$  time periods.

The dependent variable is our three sub-dimensions of women’s political empowerment. As described above, it runs from 0 to 1. The main independent variable in this model is economic development. To gauge this concept, we use a standard indicator of GDP per capita (logged) in a country. This data is taken from the Madison Project (2013) and available in the dataset described in the V-Dem project codebook (see Coppedge et al. 2015a, 2015b). For the level of democracy in a country, we rely on the widely used composite democracy index provided by Polity IV (Marshall and Jaggers 2013). As democracy increases, it will have a positive effect on women’s political empowerment. We also include fertility rate as a control. The data is provided by Gapminder (2014) and compiled by the V-Dem project.

**Table 6: The effects of economic development and democracy on women’s political empowerment**

	(1)	(2)	(3)	(4)	(5)	(6)
	$\Delta$ Civil liberty	$\Delta$ Civil society participation	$\Delta$ Political Participation	$\Delta$ Civil liberty	$\Delta$ Civil society participation	$\Delta$ Political Participation
<b>DV<sub>t-1</sub></b>	-0.0679*** [0.00705]	-0.0536*** [0.00683]	-0.0407*** [0.00482]	-0.0945*** [0.0106]	-0.0750*** [0.00676]	-0.0893*** [0.00863]
<b><math>\Delta</math> ln GDP per capita</b>	0.00689 [0.0135]	0.0152 [0.00923]	0.0351* [0.0136]			
<b>ln GDP per capita<sub>t-1</sub></b>	0.00260 [0.00144]	0.00710*** [0.00167]	0.00854*** [0.00179]			
<b><math>\Delta</math> ln energy use per capita</b>				-0.0312* [0.0148]	-0.00305 [0.00773]	0.0429* [0.0173]
<b>ln energy use per capita<sub>t-1</sub></b>				-0.00306 [0.00309]	0.00771** [0.00268]	0.0110** [0.00391]
<b><math>\Delta</math> polity</b>	0.00572*** [0.000833]	0.00524*** [0.000616]	0.00142* [0.000652]	0.00724*** [0.00129]	0.00675*** [0.000976]	0.00206* [0.000969]
<b>polity<sub>t-1</sub></b>	0.00162*** [0.000212]	0.00123*** [0.000199]	0.000476** [0.000164]	0.00199*** [0.000374]	0.00218*** [0.000360]	0.000785** [0.000284]
<b><math>\Delta</math> fertility rates</b>	-0.00286 [0.00529]	-0.0132* [0.00551]	-0.0000810 [0.00405]	-0.0303* [0.0150]	-0.0342** [0.0128]	-0.000700 [0.0177]
<b>fertility rates<sub>t-1</sub></b>	-0.00128 [0.000707]	-0.00163** [0.000618]	-0.00378*** [0.000841]	-0.00270** [0.000940]	-0.00283** [0.00102]	-0.00682*** [0.00159]
<b>_cons</b>	0.0270* [0.0137]	-0.0178 [0.0131]	-0.0271 [0.0145]	0.0901*** [0.0241]	0.0147 [0.0183]	-0.00368 [0.0286]
<b>N</b>	7886	7886	6922	4621	4621	4227
<b>adj. R-sq</b>	0.109	0.098	0.025	0.169	0.146	0.048
<b>countries</b>	147	147	147	139	139	139
<b>log likelihood</b>	16128.6	16396.1	12366.1	9643.1	9464.3	7278.5

Note: Entries are OLS regression coefficients with standard errors in brackets. Country fixed-effects are included. \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 6 includes the results of the ECM regressions estimating the short- and long-term effects of economic development and democracy on the changes in women’s political

empowerment. The dependent variables of the first three models are the changes in the three subcomponents, civil liberty, civil society participation, and political participation, at time  $t$ . The coefficients of the changes ( $\Delta$ ) in the independent variables capture their contemporaneous effects, while the coefficients of the independent variables at time  $t-1$  indicate whether there is a longer-term effect that is distributed across several time periods. With regard to economic development, models 1 to 3 show that its short-term effect is significant only for the improvement of women's political participation, while both women's civil society and political participation depends on the long-term effects of economic development. That is, the effect of economic development on these two dependent variables tends to persist into the future. Both short- and long-term effects of economic development are insignificant for women's civil liberties.

Furthermore, the coefficients of the Polity score in models 1 to 3 suggest that democracy level has both short- and long-term effects on all three subcomponents. The improvement of democracy does not only have an immediate impact on women's empowerment, but the impact also lasts for a while. For women's political participation, the continuing effect is especially significant. In models 4 to 6, we include the indicator of energy use per capita (The World Bank 2014) instead of GDP per capita, to see if these findings are robust for alternative specifications. The results hold: the effects of economic development on women's political empowerment tend to be entirely realized after several time periods, while democracy affects women empowerment both contemporaneously and into the future.

## 8. Concluding remarks

With the increasing importance given to women's political empowerment in policy circles, there is a need to provide robust indicators that gauge differentiation and improvement across countries. Indeed, "as the largest group today that worldwide encounters current and historical barriers to political incorporation, women's political empowerment should be viewed as a fundamental process of transformation for benchmarking and understanding more general political power empowerment gains across the globe" (Alexander et al. 2016, p. 1). Research on women's political empowerment is currently hampered by the lack of consistent and broad measurement. Existing data infrastructure forces researchers to make a tradeoff between the scope of analysis and the quality of indicators. Most attempts to measure women's empowerment are rarely available across sufficiently long time periods for rigorous longitudinal analysis. Moreover, the dominant approaches to measure women's empowerment, such as the GDI and GEM measures, are criticized for validity and reliability problems. And, they have been modified over the years, which further disfavors comparisons across time.

The new index presented in this article – the V-Dem index of women's political empowerment – remedies several challenges. Our index is generally better than existing indices in reliability and temporal coverage. Its three sub-dimensions allow more precise measurement and hypothesis testing where needed. Our measure has far better coverage for medium and low development countries than prior indices. Moreover, ours includes indicators that are important in nonwestern contexts, especially domestic movement and the freedom from forced labor.

This new indicator opens up new possibilities of examining the determinants of variation in women's political empowerment over time and across countries. We illustrated the utility and face validity of the index by examining certain country trajectories in detail. We provided correlations with some standard indicators to demonstrate the validity of this measure. Finally, we demonstrated possible analyses with a simple model of economic development predicting women's empowerment.

As with all measures of women's empowerment, there are some limitations to the V-Dem measure. First, although women may share a common identity grounded in reproduction or status, they are not a monolithic group. Women have differential amounts of power based on factors such as region, class, religion, sexuality, race, and ethnicity. The V-Dem measure assesses women without acknowledging intersecting disadvantage for women who are also racial, ethnic, or religious minorities. Important for politics, women with intersectional identities may be situated in multiple groups that pursue conflicting agendas (Crenshaw 1991). Second, while the V-Dem index does include some measures that capture non-elite women's choice and agency, for

the participation dimension, the measure largely captures elite participation. Women's participation at levels below the national legislature may differ. Moreover, the participation dimension also does not address whether women hold the most powerful positions within a legislature or are shunted into specialty committees (Escobar-Lemmon and Taylor-Robinson 2009). Going forward, alternative measures should attempt to incorporate more information on the political participation of average female citizens, as well as recognize that "the strength of women's advocacy networks are fundamental to women's political empowerment" (Alexander et al. 2016, p. 6, see also Weldon 2002, Htun and Weldon 2012).

Despite these limitations, the V-Dem index of women's political empowerment and its three sub-dimensions offer a marked improvement over prior measures for a number of reasons. Ultimately, measuring the status of women's political empowerment over time and across regions of the world permits the monitoring of trends and may, for instance, allow identification of "success examples" for others nations to follow (Anand and Sen 1995).

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## Appendix

Table A.1: Women's political empowerment for all countries in 1950, 1970, 1990, and 2010

Country	1950	1970	1990	2010
Afghanistan	0.166	0.211	0.190	0.458
Albania	0.374	0.463	0.467	0.781
Algeria	0.114		0.384	0.433
Angola			0.447	0.708
Argentina	0.468		0.718	0.879
Armenia			0.808	0.653
Australia	0.543	0.698	0.858	0.931
Austria	0.574	0.687	0.901	0.939
Azerbaijan				0.519
Bangladesh			0.575	0.673
Barbados		0.758	0.823	0.853
Belarus				0.833
Belgium	0.703	0.788	0.902	0.955
Benin			0.743	0.847
Bhutan		0.489	0.499	0.691
Bolivia	0.101		0.503	0.731
Bosnia and Herzegovina				0.830
Botswana		0.450	0.549	0.651
Brazil	0.349	0.297	0.717	0.839
Bulgaria	0.624	0.662	0.868	0.935
Burkina Faso				0.729
Burundi				0.673
Cambodia		0.376		0.596
Cameroon		0.350	0.580	0.717
Canada	0.645	0.749	0.905	0.948
Cape Verde			0.693	0.825
Central African Republic	0.097		0.396	0.491
Chad		0.331	0.338	0.394
Chile	0.351	0.512	0.655	0.811
China	0.410	0.462	0.593	0.650
Colombia		0.354	0.444	0.723
Comoros			0.496	0.544
Congo, Democratic Republic of		0.197	0.282	0.415
Congo, Republic of the	0.136		0.361	0.414
Costa Rica	0.535	0.644	0.889	0.949
Croatia				0.923
Cuba	0.551		0.643	0.708
Cyprus		0.564	0.668	0.817
Czech Republic	0.572	0.650	0.884	0.935
Denmark	0.813	0.905	0.962	0.966
Djibouti			0.256	0.508
Dominican Republic	0.384	0.505	0.726	0.862
East Timor				0.756
Ecuador	0.194	0.266	0.511	0.796
Egypt	0.353	0.387	0.415	0.478



El Salvador	0.151	0.210	0.342	0.628
Eritrea				0.338
Estonia			0.788	0.939
Ethiopia		0.130	0.146	0.547
Finland	0.833	0.897	0.943	0.962
France	0.765	0.746	0.819	0.943
Gabon		0.335	0.503	0.655
Gambia	0.197	0.458	0.529	0.538
Georgia				0.734
German Democratic Republic	0.577	0.644	0.888	
Germany	0.685	0.792	0.928	0.965
Ghana		0.527		0.797
Greece	0.410		0.824	0.891
Guatemala	0.238	0.126	0.314	0.525
Guinea		0.393		0.584
Guinea-Bissau			0.466	0.533
Guyana		0.682	0.808	0.844
Haiti	0.376	0.395	0.459	0.599
Honduras	0.276	0.270	0.499	0.619
Hungary	0.393	0.546	0.888	0.811
Iceland	0.635	0.680	0.871	0.929
India	0.468	0.532	0.577	0.610
Indonesia	0.332	0.322	0.383	0.724
Iran	0.205	0.334	0.278	0.350
Iraq	0.283		0.341	0.613
Ireland	0.588	0.645	0.814	0.872
Israel	0.668	0.677	0.755	0.822
Italy	0.534	0.664	0.813	0.905
Ivory Coast	0.103	0.407	0.482	0.631
Jamaica		0.674	0.834	0.887
Japan	0.589	0.629	0.682	0.757
Jordan	0.260	0.286	0.473	0.566
Kazakhstan			0.562	0.743
Kenya	0.056	0.286	0.371	0.612
Korea, North	0.239	0.243	0.297	0.270
Korea, South	0.401	0.445	0.637	0.822
Kyrgyzstan			0.658	0.695
Laos		0.210	0.294	0.436
Latvia				0.952
Lebanon	0.401	0.423	0.439	0.503
Lesotho	0.247		0.524	0.728
Liberia	0.302	0.296	0.440	0.794
Libya			0.204	0.234
Lithuania			0.773	0.934
Macedonia				0.870
Madagascar		0.444	0.539	0.635
Malawi	0.069	0.178	0.239	0.684
Malaysia	0.417		0.592	0.634
Maldives			0.542	0.662
Mali	0.100		0.520	0.688
Mauritania	0.158	0.317		0.633

Mauritius	0.407	0.528	0.652	0.773
Mexico	0.286	0.441	0.561	0.740
Moldova			0.637	0.858
Mongolia	0.300	0.526	0.518	0.777
Montenegro				0.788
Morocco		0.285	0.347	0.639
Mozambique			0.528	0.685
Namibia	0.103	0.114	0.613	0.758
Nepal		0.186	0.372	0.698
Netherlands	0.562	0.801	0.927	0.944
New Zealand	0.676	0.716	0.898	0.947
Nicaragua	0.175	0.217	0.741	0.800
Niger		0.344	0.630	0.757
Nigeria				0.617
Norway	0.778	0.907	0.945	0.957
Pakistan			0.321	0.628
Panama	0.450		0.677	0.777
Papua New Guinea			0.517	0.517
Paraguay	0.175	0.198	0.503	0.650
Peru	0.342		0.622	0.774
Philippines	0.578	0.624	0.788	0.841
Poland	0.551	0.686	0.901	0.921
Portugal	0.207	0.219	0.817	0.923
Qatar				0.418
Romania	0.444	0.498	0.718	0.827
Russia	0.350	0.529	0.560	0.751
Rwanda		0.329	0.466	0.820
São Tomé and Príncipe			0.672	0.796
Saudi Arabia				0.203
Senegal	0.295	0.544	0.676	0.768
Serbia	0.523	0.640	0.756	0.869
Seychelles			0.678	0.766
Sierra Leone			0.227	0.672
Slovakia				0.890
Slovenia			0.735	0.906
Solomon Islands			0.339	0.410
Somalia			0.222	0.320
South Africa	0.180	0.183	0.226	0.891
South Yemen			0.416	
Spain	0.225	0.239	0.916	0.951
Sri Lanka	0.576	0.628	0.614	0.658
Sudan	0.135			0.437
Suriname			0.714	0.784
Swaziland		0.303	0.385	0.447
Sweden	0.834	0.875	0.943	0.951
Switzerland	0.600	0.650	0.897	0.949
Syria	0.365		0.435	0.462
Taiwan	0.333	0.393	0.790	0.928
Tajikistan			0.593	0.639
Tanzania		0.564	0.660	0.787
Thailand	0.282	0.396	0.611	0.783

Togo	0.214		0.526	0.742
Trinidad and Tobago		0.626	0.850	0.936
Tunisia		0.496	0.634	0.794
Turkey	0.373	0.436	0.441	0.555
Turkmenistan				0.388
Uganda	0.205	0.346	0.620	0.853
Ukraine			0.687	0.841
United Kingdom	0.578	0.739	0.776	0.871
United States	0.492	0.676	0.844	0.928
Uruguay	0.631	0.587	0.808	0.886
Uzbekistan				0.525
Vanuatu			0.788	0.792
Venezuela		0.681	0.780	0.793
Vietnam, Democratic Republic of	0.518	0.426	0.630	0.760
Vietnam, Republic of		0.405		
Yemen			0.215	0.228
Zambia	0.150	0.476	0.555	0.633
Zimbabwe	0.093	0.104	0.528	0.542