Measuring Gender (In)Equality: The OECD Gender, Institutions and Development Data Base

Johannes P. Jütting; Christian Morrisson; Jeff Dayton-Johnson; Denis Drechsler

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Abstract   The Development Centre of the Organisation for Economic Co-operation and Development's Gender, Institutions and Development Data Base (GID-DB) is a new cross-country research tool with comprehensive measures of gender equality. It improves upon existing sources because it is the only data base on gender that systematically incorporates indicators of social norms, traditions and family law. The GID-DB thereby permits analysis of hypotheses that link cultural practices to gender equality, human development and economic growth. A cross-country comparison of the data indicates that inequalities in social institutions are particularly pronounced in countries with low female literacy rates, but correlate less strongly with Gross Domestic Product per capita. Similarly, our econometric analysis suggests a clearly negative correlation between gender inequality of the OECD Development Center and women's labor-force participation.

*The views expressed in this article are the personal opinions of the authors

Introduction

Gender equality has been defined in terms of "equality under the law, equality of opportunity … and equality of voice" (World Bank, 2001, p. 2); as such, it is a policy objective of nearly universal acceptance. Gender equality, moreover, has instrumental value because it enhances the long-term growth prospects of countries. For these and other reasons, its pursuit is one of the eight Millennium Development Goals promulgated by the United Nations. Measuring the status and tracking the progress of

gender equality is consequently an important undertaking, but a difficult one given the various dimensions along which discrimination against women occurs. Recently, attention has particularly focused on two lead indicators — the Gender-related Development Index (GDI) and the Gender Empowerment Measure (GEM) — and their uses and abuses as measures of gender equality (Schüler, 2006).

This paper contributes to the identification and development of valid measures of gender equality by presenting the Gender, Institutions and Development Data Base (GID-DB).[1] The GID-DB provides data covering all key dimensions of gender equality, including information on social norms, traditions and family law (collectively referred to herein as social institutions). It thereby allows researchers to test various hypotheses on the determinants of gender equality, to analyze the effects of gender inequality and to build composite indicators of gender equality.

The GID-DB is an important complement to existing data compilations. Commonly used sources such as the *Human Development Reports* of the United Nations Development Programme (UNDP), the United Nations' *World's Women* surveys and the World Bank's data base *GenderStats* mostly provide sex-disaggregated data in the areas of health, education, employment, political participation and income. They nevertheless fail to include information on social institutions, which have been identified as an important determinant of the well-being of women and the long-term prospects for economic growth (World Bank, 2001; Antecol, 2003).

The next section of the present paper presents the main building blocks of the data base and discusses in detail how the new social institutions variables are measured and coded. The third section illustrates the usefulness of the new data base, highlighting patterns of gender inequalities related to regions in the world and across income groups. It also provides an example of how the GID-DB can be used to address important policy questions by looking at the determinants of female labor force participation. One important part of the data base is devoted to report a country's performance in gender equality measured through composite indicators such as the UNDP's GDI or the Gender Gap Index, which was recently introduced by the World Economic Forum. The specific merits and limitations of these different indices compared with our newly established Social Institutions and Gender Index (SIGI) are discussed in the subsequent section, and the final section presents our conclusions.

Construction of the GID-DB: how to measure social institutions

The GID-DB is a comprehensive data collection that presents 60 indicators related to gender equality, in which all world regions and country income categories are represented. There are 161 economies in the data base, although the number for which measures of social institutions are

available is generally lower. With a few exceptions, economies with fewer than one million inhabitants are not considered.

The GID-DB is built around five major blocks that either determine and/or measure gender equality: social institutions, women's access to resources (e.g. health and education), political empowerment, the economic status of women and composite indicators measuring gender equality. Given the data base's focus on gender-related differences rather than the absolute values of a particular indicator, many variables are presented as ratios. Thus the GID-DB not only includes the percentage of female students enrolled in primary, secondary and tertiary education, but also provides the corresponding female/male enrolment ratios. Similar rationales apply to health data (e.g. life expectancy) and information on the economic role of women (e.g. economic activity rate): in both cases, variables are presented in absolute terms and relative to the corresponding value for men.

So far, the literature on the determinants of gender equality has primarily focused on either measuring women's socio-political status (e.g. education, health and political rights) or on constructing composite indicators (for example, Klasen, 2006). The importance of social institutions for gender inequality has, however, been largely overlooked. This is an important omission, as deeply enshrined norms, values and attitudes may arguably be the most important determinants for gender equality: they have generally been in existence for centuries, are extremely difficult to change and frequently over-ride formal laws and regulations (Sen, 2007).

In order to give a broad overview of gender (in)equality that is rooted in social institutions, we distinguish 12 single indicators that we group into the following subcategories: the prevailing family code; women's physical integrity; women's civil liberties; and women's ownership rights (see Figure 1). Each of these variables is coded between zero (equality) and one (high inequality). Ratings of social institutions variables generally
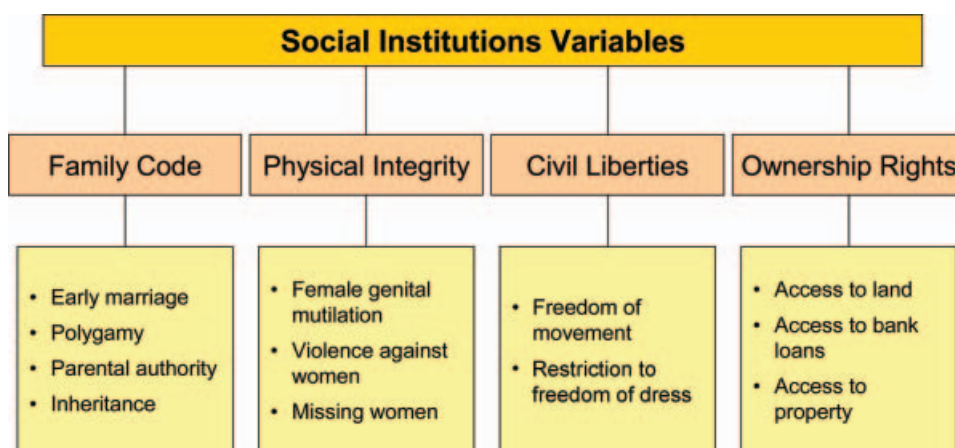

FIGURE 1. The GID-DB's social institutions variables. *Source*: Authors' illustration.

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consider the extent of inequality,[2] as well as the size of the female population that suffers from its application. For example, a very discriminatory institution might be prevalent in a social group that constitutes only 40% of a country's population; then, for that observation the value of the indicator will be $1 \times 0.40 = 0.4$, where the first term indicates the highest level of discrimination and 0.40 takes account of the fact that only 40% of the population is affected.

Family code

Four variables[3] are grouped in the 'family code' subindex:[4] early marriage, polygamy, parental authority, and inheritance practices. Inheritance practices measure whether bequests are equally shared between male and female offspring. Depending on the degree to which regulation is in favor of male heirs, the variable is coded between zero (equal treatment of sons and daughters) and one (inheritance is only given to male offspring). Parental authority is coded one for a society where fathers, as a rule, have complete control over their children and zero where they evenly share authority with their children's mothers. Whether parental authority is granted equally to men and women and whether women are discriminated against in inheritance practices is documented in a study commissioned by the French Parliament (Lang, 1998).

A social institution of special relevance is that of early marriage: where very young women are married, parents (fathers) and not young women themselves have the power to make important decisions about marriage and household formation. Moreover, within households, the generally older husbands have disproportionate authority and decision-making power. We use the percentage of women married before the age of 20 reported by the UNDP (2004) to construct our early marriage indicator, which varies between zero (early marriage does not exist) to one (all women have been married before the age of 20 at least once).

In the absence of any comprehensive overview of the worldwide prevalence of polygamy, the GID-DB focuses on the extent of legal or customary recognition of this social institution. Our polygamy variable is therefore not an estimate of the percentage of polygamous households, but an indicator of the acceptance of polygamy within a society, which is easily comparable across countries. The value zero (one) indicates the general approval (rejection) of polygamous practices in a society. Our ratings are based on country case studies, and particularly on Lang (1998).

Physical integrity

Three variables are grouped in the 'physical integrity' subindex: the prevalence of female genital mutilation, the existence of legislation punishing acts of violence against women, and the percentage of women that are 'missing' due to sex-specific abortions or unfavorable living conditions.

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Our principal sources for female genital mutilation (e.g. Amnesty International, World Health Organization, UNDP) are prone to estimation errors; definitions across national authorities, however, do not differ. In the case of large variations between the data, we consider the most reliable source (e.g. according to date of publication, number of references, and potential bias of information source[5]). We directly translate the share of women who have undergone genital mutilation into our zero to one coding system; that is, 18% corresponds to a value of 0.18.

For violence against women, we quantify information provided by the United Nations Development Fund for Women (2003) on the existence of laws against domestic violence, against sexual assault or rape, and against sexual harassment as follows: zero if specific legislation is in place, 0.25 if legislation is in place but of general nature, 0.5 if specific legislation is being planned, drafted or reviewed, and 0.75 if this planned legislation is of general nature; one captures the absence of any legislation concerning violence against women.

The existence of laws and regulations is not necessarily an indication of violence against women. Hypothetically speaking, societies without violence against women do not need laws and regulations to punish it. Our indicator would thus penalize those societies in which violence against women is specifically not a problem. Similarly, the mere existence of laws and regulations concerning violence against women does not mean that these laws are successfully applied. On the contrary, their existence might even indicate that violence against women is a particular acute problem.

Despite these shortcomings, focusing on the legal aspects of violence against women appears to be a necessary substitute in view of the absence of any reliable and comprehensive overview of the actual extent of this important dimension of gender inequality.[6] What is more, information on laws and regulations is comparable across countries and is — with the exception of Hong Kong and the Occupied Palestinian Territory — available for all countries of the data base. As a reference, the GID-DB also features information from the Demographic and Health Surveys that have been implemented by Macro International. Specifically, we include data on the percentage of women between 15 and 49 years old who agree that a husband is justified in hitting or beating his wife for at least one reason. We nevertheless do not consider this variable in the physical integrity index as it is only available for 36 countries.

The 'missing women' variable is largely inspired by the work of Sen (1990) and is coded depending on the relative prevalence of this phenomenon in a country. Specifically, we use estimates on the number of missing women from Klasen and Wink (2003), who report the difference between the number of women that should be alive (assuming gender equality) and the actual number of women in a country. We assign the value one to the country with the highest percentage of missing women relative to the total number of women (i.e. Afghanistan with a share of 9.3%). All other countries are assigned values between zero (no

women are missing) and one accordingly. For cases in which only aggregate estimates are reported (e.g. sub-Saharan Africa), we replicate the calculations of Klasen and Wink (2003) for individual countries. It is important to note that all of these figures are rough estimates. Owing to data constraints, estimations on the number of 'missing women' cannot adequately take into account important factors such as migration, which have an important impact on the sex ratio of certain countries (e.g. countries in the Middle East and North Africa region receive disproportionately high inflows of male migrants).

Civil liberties

Two variables comprise the 'civil liberties' subindex: women's freedom to leave the house independently, and restrictions to freedom of dress. We assign a value of 1 if women can never leave their house alone; a value of 0.5 if they can leave the house for work but are not allowed to visit their family or friends without the husband's permission; and a value of 0 if there exists no restrictions. The variable ''restrictions to freedom of dress'' refers to an imposed and enforced dress code (e.g. headscarf, burka) by the law. An assignement of 1 means that women have no free choice of dressing, while a 0 means they can freely decide. As with other social institutions some of these restrictions may apply to certain groups in the population only, in which case the value of the indicator is adjusted depending of the relative size of the group subject to this social institution.

Ownership rights

Three variables constitute our 'ownership rights' subindex: women's access to bank loans, their right to acquire and own land, and their right to own property other than land. Variations between zero and one indicate the extent of restrictions and the size of the female population for which the restrictions are relevant. As before, one signifies high inequality (i.e. it is impossible for women to hold property, own land or access bank loans).

We use data and information from a variety of sources, including Amnesty International, BRIDGE (research and information service of the Institute for Development Studies in Sussex, UK, specialized in gender and development), the Women in Development Network, AFROL (a news agency that concentrates on Africa), and Lang (1998). Whenever possible, we compare and contrast observations with one another to cross-check the validity and reliability of information (refer to Figure A-1 in the Appendix for details on the construction and the sources of the social institutions' variables).

Illustrating the value of the data base

The GID-DB provides new information on the well-being of women and men across societies. The four subindices of social institutions described

in the previous section — physical integrity, family code, ownership rights and civil liberties — indicate the depth of discrimination of women that is grounded in social norms, traditions, and family law. Plotting the aggregated country indices for the different regions in the world demonstrates striking differences between South Asia, sub-Saharan Africa, and the Middle East and North Africa region, on the one hand, and East Asia and the Pacific, Europe and Central Asia, Latin America and the Caribbean, and member countries of the Organisation for Economic Co-operation and Development (OECD), on the other (see Figure 2). Recall that our indices range from zero (equality) to one (high inequality), so higher bars in Figure 2 indicate higher inequality.

The importance of education for gender equality is illustrated in Figure 3, which plots the aggregate country indices of social institutions for various levels of female education. Specifically, countries are categorized depending on the percentage of women above the age of 15 years who can read and write. 'Low' indicates a percentage of below 50% of the female adult population (25 countries); 'low-medium' captures literacy rates between 50% and 80% (29 countries); 'upper-medium' contains all countries with female adult literacy rates between 80% and 95% (36 countries), and 'high' indicates literacy rates between 95% and 100% (26 countries). Clearly, gender inequality that is based on social institutions is particularly pronounced in countries with low female education. Discrimination of women through social institutions decreases with the level of education.

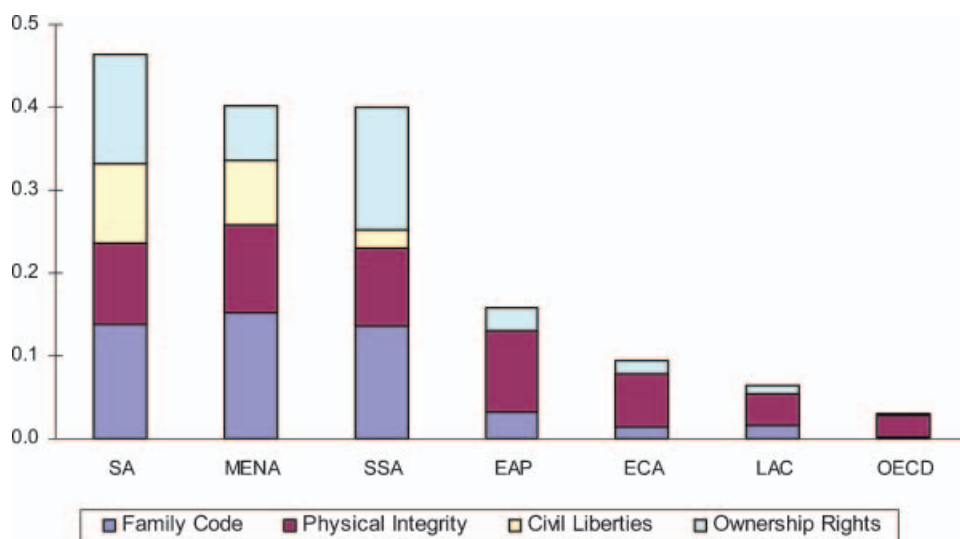FIGURE 2. Regional indices of gender inequality through social institutions. *Note*: Also including countries for which not all data points were available. Scale: 0=equality; 1=high inequality. SA, South Asia; MENA, Middle East and North Africa; SSA, sub-Saharan Africa; EAP, East Asia and the Pacific; ECA, Europe and Central Asia; LAC, Latin America and the Caribbean. *Source*: Constructed from the GID-DB.
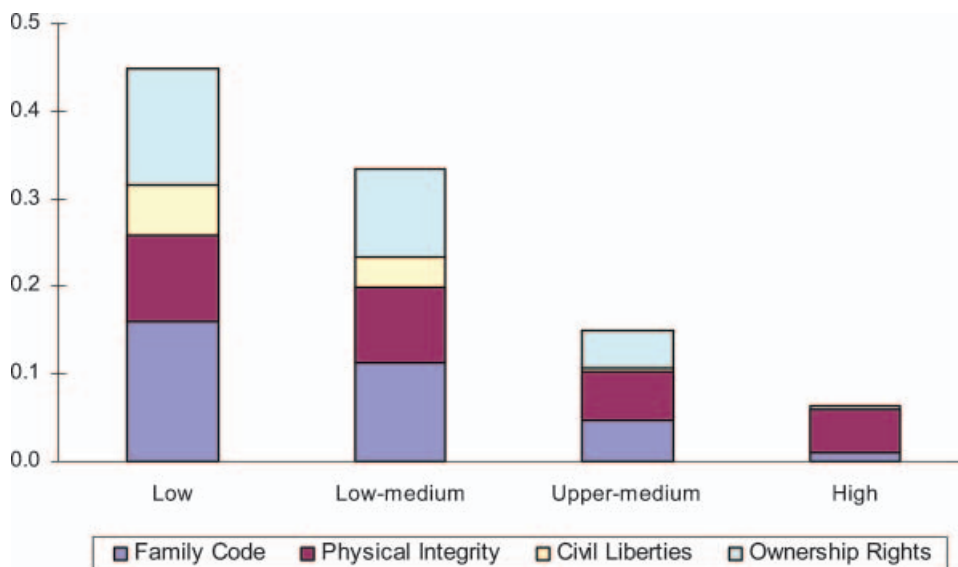
FIGURE 3. Gender inequality through social institutions and level of education. *Note*: Also including countries for which not all data points were available. Scale: 0=equality; 1=high inequality. 'Low', 0–49% female adult literacy; 'low-medium', 50–74% female adult literacy; 'upper-medium', 75–94% female adult literacy; 'high', 95–100% female adult literacy. *Source*: Authors' illustration.

The GID-DB also allows an analysis of the relationship between economic growth and gender equality, a highly controversial topic (Forsythe *et al*., 2000). The results of a simple tabulation of countries grouped into different income categories and the degree of discrimination related to social institutions seems to support the *modernization-neoclassical thesis* of gender inequality, which suggests a reduction of inequalities in the process of economic development (see Figure 4). Gender inequality in social institutions is most significant in low-income countries, whereas the high income (OECD) countries all have low values.

However, Figure 4 also illustrates that gender equality is not entirely linked to the level of economic development. Specifically, high-income countries that are not a member of the OECD have notably higher values than OECD countries. Similarly, the difference between lower middle-income countries and upper middle-income countries is only marginal. The analysis of the relationship between economic growth and gender equality requires a more comprehensive understanding of the role that social institutions play in the development process. The GID-DB provides the necessary information to address such research questions.[7]

As an illustrative example of the instrumental value of gender equality, we analyze cross-country variations in the level of female employment in the non-agricultural sector; especially focusing on the extent to which these variations can be explained by gender-related social institutions.[8]
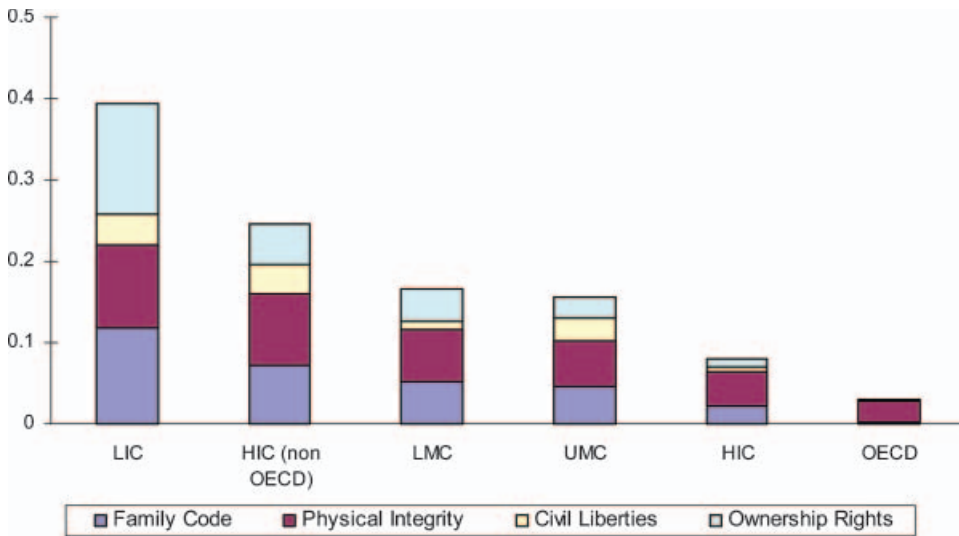
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FIGURE 4. Gender inequality through social institutions in various income categories. *Note:* Also including countries for which not all data points were available. Scale: 0=equality; 1=high inequality. LIC, low-income countries; HIC, high-income countries; LMC, lower middle-income countries; UMC, upper middle-income countries. *Source*: Authors' illustration.

We hypothesize that our social institutions variables are negatively correlated to labor force participation. Specifically, high inequality in ownership rights and civil liberties will severely obstruct or even completely prevent women from engaging in paid work. If women are not allowed to hold property, for example, or if they are not allowed to independently leave the house, they will not be able to participate in the economic life of a country. Similarly, inequalities in the family code or physical integrity will also obstruct women's labor force participation. A girl married before the age of 20 years, for example, is less likely to receive adequate education that would qualify her for a job. Finally, women who have undergone genital mutilation are prone to health problems throughout their lives, which reduce their chances in the labor market.

These hypotheses can be analyzed by constructing a composite indicator. Consider the SIGI, a simple arithmetic average of the four subindices of social institutions (i.e. family code, physical integrity, civil liberties and ownership rights).[9] As before, one (zero) signifies the highest (lowest) degree of inequality. In Table 1, we regress female labor force participation on the SIGI and other important explanatory variables.

As indicated in column one in Table 1, there is clearly a negative correlation between gender inequality that is rooted in social institutions and women's labor-force participation. This relationship is comparable with, or even more pronounced than, the one we obtain using the UNDP's GDI,[10] considering the level of significance, the size of the regression

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Table 1. Gender-related social institutions and female labor-force participation

	Share of women in wage employment in the non-agricultural sector (%)			
	Column one	Column two	Column three	Column four
SIGI	−45.054**		−40.015**	−22.942**
	(11.72)		(6.13)	(3.09)
GDI		42.435**	4.311	
		(9.09)	(0.46)	
GDP per capita (/1000)			0.006	−0.117
			(0.05)	(1.06)
Openness to trade			0.018	0.012
			(0.75)	(0.46)
Life-expectancy ratio				40.688
				(1.26)
Literacy ratio				25.495**
				(3.22)
Constant	46.396**	7.595*	41.199**	−24.047
	(38.08)	(2.27)	(5.77)	(0.67)
Observations	116	136	107	93
R^2	0.55	0.38	0.54	0.54

Note: GDP per capita is divided by 1000 to harmonize the scale of variables. Absolute value of *t* statistics in parentheses. *Significant at 5%. **Significant at 1%.
Source: Authors' calculations.

coefficient, and R^2 (column two). It also holds after including various controls such as a country's income level and openness to trade (column three).[11] Following the modernization-neoclassical approach of gender equality, we would expect an increase in the share of women in the paid labor force the higher a country's level of development. Similarly, as compellingly demonstrated by Wood (1991), international trade can promote the economic role of women by augmenting the share of female employment in the manufacturing sector. Controlling for a country's level of development (Gross Domestic Product [GDP] per capita) and openness to trade (trade as a percentage of GDP), however, only slightly reduces the absolute magnitude of the coefficient of the SIGI, which remains significant at the 1% threshold.[12]

Female access to resources for good health and education is a necessary requirement for progress in the economic role of women. While this relationship has been extensively discussed in the literature (for example, Klasen, 2002) the positive impact of available resources might be conditioned by the institutional framework of a country. This assumption receives some validation from the results of our econometric analysis, as the GDI — which can be considered a proxy for access to resources — is no longer significant when the SIGI is included (Table 1, column three).

The GDI is arguably an inexact measure of female access to resources because it also contains an income dimension. Focusing, in column four (Table 1), on the two components of the GDI that directly relate to access to resources (i.e. literacy ratio and life-expectancy ratio), we see an important association between education and the level of female employment.

Specifically, the estimated coefficient of the literacy ratio (i.e. female literacy as a percentage of male literacy) is statistically significant. However, although the magnitude of the coefficient of the SIGI is reduced by the inclusion of the literacy ratio, it remains statistically significant.

All of the models in Table 1 were re-estimated with a series of regional dummy variables in order to make sure that, despite the significantly higher values of gender inequality through social institutions in some regions (e.g. Middle East and North Africa, South Asia, and sub-Saharan Africa), it is indeed these institutions and not some unmeasured regional effect that accounts for the differences in women's labor-force participation. In general, the results we obtained with regional dummies are not qualitatively different from those in Table 1 (refer to Appendix 3 for more information).

Composite indicators: a comparative assessment

The GID-DB can also be used to construct composite indicators of gender equality, an exercise, which has recently gained considerable attention. In addition to longer-established measures of gender equality, of which the UNDP's GDI and GEM are the most prominent and widely used,[13] newer indicators have emerged such as the Gender Gap Index proposed by the World Economic Forum (2006) and the Gender Equity Index (GEI) by Social Watch (2005).[14]

Table 2 illustrates the conceptual differences among the four main composite indicators of gender equality and highlights their particular strengths and weaknesses. The table also presents the SIGI, which complements and in certain aspects improves existing measures. We refrain from a thorough methodological analysis of the pros and cons of sex-disaggregated measures, gender gap indices and gender-sensitive aggregate measures, and refer the interested reader to Klasen (2006).

The conventional and most widely-used indicators, the GDI and the GEM, have the advantage of being embedded into the larger debate of measuring 'human development'. In fact, the GDI is merely a gender-sensitive extension of the well-established Human Development Index (HDI) (Klasen, 2006). While their focus on very few issues of gender equality allows a relatively easy measurement and calculation on an annual basis, both indices arguably ignore important dimensions that are instrumental for gender equality such as the impact of economic opportunities and social institutions. They furthermore suffer from a number of methodological problems related to the measurement and interpretation of some of their variables.

In the case of the GDI, which penalizes countries by lowering HDI scores for existing gender inequalities in life expectancy, education, and income, most of the difference between the GDI and the HDI seem to be driven by the 'earned income' component. This is problematic as the measurement of this variable is based on some debatable assumptions. For

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Table 2. Comparison of the main composite indicators of gender equality

	GDI (UNDP)	GEM (UNDP)	GEI (Social Watch)	Gender Gap Index (World Economic Forum)	SIGI (OECD Development Centre)
Focus	**Human Development** Four single indicators of human development grouped into three dimensions *A long and healthy life* • Life expectancy ratio *Knowledge* • Literacy ratio • School gross enrolment ratio *A decent standard of living* • Estimated earned income ratio	**Empowerment** Four single indicators of economic and political empowerment grouped into three dimensions *Political participation and decision-making* • Percentage of seats in parliament held by women *Economic participation and decision-making* • Female legislators, senior officials and managers • Female professional and technical workers *Power over economic resources* • Estimated earned income ratio	**Socio-economic opportunities** Ten single indicators grouped into three dimensions *Education* • Literacy ratio • Primary, secondary and tertiary net enrolment ratio *Economic participation* • Women in non-agricultural paid employment • Estimated earned income ratio *Empowerment* • Women in parliament • Women at ministerial level • Female legislators, senior officials and managers • Female professional and technical workers	**Multidimensional** Fourteen single indicators grouped into four dimensions *Economic participation and opportunity* • Labor force participation • Wage equality • Estimated earned income • Female legislators, senior officials and managers • Female professional and technical workers *Political empowerment* • Women in parliament • Women at ministerial level • Female heads of state *Educational attainment* • Literacy ratio • Net primary enrolment	**Social institutions** Twelve single indicators grouped into four dimensions *Family code* • Early marriage • Polygamy • Parental authority • Inheritance *Physical integrity* • Female genital mutilation • Violence against women • Missing women *Ownership rights* • access to land • access to bank loans • access to property other than land *Civil liberties* • restriction to freedom of dress • Freedom of movement

Table 2. Continued

	GDI (UNDP)	GEM (UNDP)	GEI (Social Watch)	Gender Gap Index (World Economic Forum)	SIGI (OECD Development Centre)
				• Net secondary enrolment • Net tertiary enrolment *Health and survival* • Life expectancy ratio • Sex ratio at birth	
Coverage	157 countries	93 countries	154 countries	115 countries	117 countries
Evaluation	*Pros*: large country coverage; indicator availability; linked to well-known HDI *Cons*: simple extension of the HDI with a gender touch, earned income problematic variable with significant weight	*Pros*: comprehensive measure of empowerment; linked to well-known HDI *Cons*: very specific measure; primarily a complement to other indices; indicator availability; small country coverage	*Pros*: large country coverage; comprehensive list of indicators of gender equity *Cons*: omission of important dimensions (e.g. health)	*Pros*: comprehensive list of indicators and dimensions *Cons*: strong focus on developed countries, complicated calculation of indicator weights	*Pros*: innovative indicators, measurement of underlying reasons of gender equality, inclusion of social institutions *Cons*: very specific measure, primarily a complement to other indices; measurement problem with some indicators

example, it solely considers wages of the non-agricultural formal sector, which in many developing countries is rather small and not representative of the entire economy. Furthermore, it assumes that differences in earned income reflect gender gaps in consumption of human development-related goods. Countries are penalized less by the GDI for differences in life expectancy, on the other hand, which arguably deserve more attention from a human development perspective.

Although uniting important aspects of gender empowerment — that is, political and economic participation and decision-making, and power over economic resources — the GEM is a very specialized measure. It should thus be seen as a complement to other indices that have a broader focus on gender equality. Again, the earned income component is problematic. In contrast to the GDI, the GEM uses income levels without a logarithmic transformation to determine inequality. This means that a poor country can never achieve a high score in the GEM ranking although it might have achieved equality in earned incomes. Conversely, a rich country might score much better than its relative income levels of men and women would suggest (Klasen, 2006).

The recently established GEI and the Gender Gap Index are conceptually much broader than the UNDP measures and consider important additional information. However, they too fail to include variables capturing the underlying causes of gender inequality. Specifically, the GEI focuses on socio-economic opportunities, grouping ten well-known single variables into three dimensions: education, economic participation and empowerment. In addition to neglecting underlying causes of gender equality, the GEI also ignores other important dimensions of gender equality such as health. The Gender Gap Index is the most comprehensive measure of gender equality, combining information on 14 single indicators into four dimensions: economic participation and opportunity, political empowerment, health and survival, and educational attainment. This multidimensional approach captures many dimensions of gender inequality, but it also raises the question of how this information can and should be compiled in a single indicator. As a result, the calculation of the index is relatively complex and uses weights that depend on each variable's standard deviation. Finally, although capturing more than 90% of the world's population (World Economic Forum, 2006), the index has a strong focus on developed countries.

Our new SIGI presents a wide range of new dimensions and variables that are not considered by other indices. It is the only index that focuses on the underlying sources of gender equality, grouping its 12 single indicators into the four dimensions of gender inequality discussed above. In this respect it offers welcome additional information, which complements — not substitutes for — existing measures. In fact, the SIGI solely concentrates on social norms, traditions and family law that affect gender equality. It is therefore particularly relevant for developing countries where social institutions are of great importance.

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This brief discussion indicates that gender equality may be too complex to be adequately captured by one 'magic indicator'. On the contrary, a careful selection of available indicators should be driven by the precise interest and research question. Data providers should spell out more clearly the limitations of their indicators and encourage a multi-indicator approach. Furthermore, they might want to use different approaches in order to allow for a sensitivity analysis.

Conclusion

The GID-DB compiles — for the first time in an easily usable fashion — measures of social norms, traditions and family laws that affect gender equality. This information can be used for several purposes. It allows a descriptive analysis of variations in gender equality across regions and between country income categories. Furthermore, the data base can be used to develop composite indictors of gender equality and provides evidence to undertake in depth causal analyses of the determinants of gender equality and its link to growth and development.

Addressing the underlying causes of gender discrimination is of crucial importance to improve gender equality. If social institutions prevent women from working outside of the house, increasing the enrolment rate of girls will not have a sizeable effect on female participation in the labor market. If men do not accept that women exercise authority, higher education of girls will not increase the number of women managers. More research is needed to identify policies that can successfully alter gender discrimination through social institutions. The GID-DB and the SIGI are important new tools to find answers to these challenging questions.

Notes

1 The GID-DB can be accessed from the OECD Development Centre's web page [www.oecd.org/dev/gender/gid].

2 In the absence of a general threshold for the level of inequality, ratings are generally based on the relative score of a country compared with other countries.

3 Interesting information on the prevailing family code is equally given by Humana (1992), who rates the ''equality of sexes during marriage and for divorce proceedings''. These data are included in the GID-DB for reference. However, we do not consider the data for the calculation of our family code index as they were already published 15 years ago.

4 All subindices described in this section were calculated by taking the arithmetic average of the single components, also including countries for which not all data points were available.

5 Non-governmental organizations that specifically fight for the abolition of female genital mutilation, for example, may over-report its prevalence as an advocacy strategy.

6 Coomaraswamy and Kois (1999) provide an overview about the various forms of violence against women. Even for many OECD countries, data on violence against women are not available.

7 One of these research questions concerns the relationship between religious affiliation and social institutions, which are discussed in detail by Jütting and Morrisson (2005).

8 The literature on the determinants of women's labor-force participation is huge: the first generation of such studies, which focused on individual women's decision-making, is reviewed at length by Killingsworth and Heckman (1986). The literature on cross-country differences is less extensive: Jaumotte (2003) analyzes variation within the OECD, while Antecol (2000, 2003) uses information from the International Social Survey Program to analyze the effect of social attitudes on cross-country variations. Antecol's work is nevertheless also restricted to a relatively small set of upper-middle and high-income countries.

9 A main objective of the GID-DB is to provide comprehensive information on issues related to gender equality. As explained in this section, these data can be used to construct composite indicators of gender equality, of which the SIGI is just one example. We therefore encourage users of the data base to build their own indicators using the information provided.

10 A similar exercise could have been done for the GEM. However, we refrain from doing this as the GEM includes variables on economic participation, which is the dependent variable in our research question.

11 It might likewise be argued that variations in the influence of unions, as well as other labor-market institutions, should be controlled for in this kind of regression exercise. This is likely to be important in OECD countries, but the rate of unionization and formal sector employment that would be affected by labor-market institutions is quite low in most developing countries. We therefore do not include these controls in our regression.

12 We similarly considered regression models with a log-income term as well as an exponential income term in order to account for the fact that the relationship between GDP per capita and female labor force participation may be non-linear. However, these set-ups did not have a significant impact on the results we obtained (refer to Appendix 2 for more information).

13 For a critical reflection on these indicators and debates about alternatives, please see the special issue of the *Journal of Human Development* (volume 7(2), 2006).

14 The African Centre for Gender and Development (2005) introduced a regional indicator of gender equality: the African Gender and Development Index.

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Appendix 1.

FIGURE A-1. Sources and Description of the GID-DB's Social Institutions' Variables

	Variable Name	Variable Description	Source	Year
FAMILY CODE	Early marriage	Share of female population between ages 15 and 19 that has ever been married. Values between 0=early marriage does not exist and 1=all girls are married before age 20.	*United Nations, World Fertility Report 2003*	1985-2002
	Polygamy	Acceptance of polygamy within a society. Values between 0=no and 1=complete acceptance.	*various sources (e.g. AFROL, Lang, WHO)*	1998-2005
	Parental authority	Parental authority granted to father and mother equally (values range between 0=yes and 1=no).	*primarily based on Lang (1998)*	1998
	Inheritance	Inheritance practices in favour of male heirs (values range between 0=no and 1=yes).	*primarily based on Lang (1998)*	1998
	Family Code Sub-Index	Unweighted average of family code variables (i.e. early marriage, inheritance, parental authority and polygamy).	*Own calculation*	
PHYSICAL INTEGRITY	Female Genital Mutilation	Prevalence of female genital mutilation (share of women affected by this practice: 0=none, 1=all).	*various sources (e.g. WHO, Amnesty International, StopFGM, UNICEF)*	1990-2005
	Violence against women	Existence of legislation punishing acts of violence against women in three fields: rape, domestic violence, sexual harassment (level of discrimination between 0=specific legislation in place in all three dimensions and 1=no legislation in place in any of them).	*UNIFEM (2003); sources for individual countries as cited by UNIFEM*	2003
	Missing women	Difference between expected number of women and actual number of women in a country (as a share of the actual number of women). Values between 0=no women are missing to 1=highest percentage of missing women observed (i.e. Afghanistan with 9.3 %). Values for other percentages assigned accordingly.	*Klasen and Wink (2003); own calculations for Sub-Saharan Africa assuming sex ratio of 0.97*	1990-2000
	Physical Integrity Sub-Index	Unweighted average of physical integrity variables (i.e. female genital mutilation, violence against women and missing women).	*Own calculation*	

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CIVIL LIBERTIES	Freedom of movement	Freedom to move independently outside of the house (level of discrimination between 0=no restrictions and 1=complete dependence on male authority).	*primarily based on Lang (1998)*	1998
	Veil	Obligation to wear a veil in public: 0=no and 1=yes.	*primarily based on Lang (1998)*	1998
	Civil Liberties Sub-Index	Unweighted average of civil liberty variables (i.e. freedom of movement and veil).	*Own calculation*	
OWNERSHIP RIGHTS	Women's access to land	Women's access to land ownership (between 0=unrestricted and 1=impossible).	*various sources (e.g. AFROL, BRIDGE, WIDNET, Lang)*	1998-2005
	Women's access to bank loans	Women's access to bank loans (between 0=unrestricted and 1=impossible).	*various sources (e.g. AFROL, BRIDGE, WIDNET, Lang)*	1998-2005
	Women's access to property other than land	Women's access to property other than land (between 0=unrestricted and 1=impossible).	*various sources (e.g. AFROL, BRIDGE, WIDNET, Lang)*	1998-2005
	Ownership Rights Sub-Index	Unweighted average of ownership variables (i.e. access to bank loans, land and property other than land).	*Own calculation*	

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Appendix 2. Regression Analysis Including a Log Income Term and an Exponential Income Term

	(1)	(2)	(3)	(4)	(5)
	Share of women in wage employment in the non-agricultural sector (%)				
Social Institutions and Gender Index	-45.054**	-40.102**	-40.94**	-41.669**	-22.726**
	(11.72)	(7.75)	(6.20)	(7.61)	(3.05)
GDP pc (/1000)		0.223	0.272		-0.275
		(1.13)	(0.89)		(1.08)
[GDP pc (/1000)]^2		-0.004	-0.005		0.003
		(1.01)	(0.94)		(0.69)
ln Y				0.433	
				(0.44)	
Openness to Trade		0.021	0.026	0.016	0.006
		(0.88)	(1.02)	(0.68)	(0.23)
Gender-related Development Index			-2.469		
			(0.21)		
Life-expectancy Ratio					45.347
					(1.37)
Literacy Ratio					27.466**
					(3.25)
Constant	46.396**	42.56**	43.777**	41.021**	-29.492
	(38.08)	(13.38)	(5.72)	(4.38)	(0.80)
Observations	*116*	*109*	*107*	*109*	*93*
R-squared	*0.55*	*0.54*	*0.54*	*0.54*	*0.55*

*Absolute value of t statistics in parentheses: * significant at 5%; ** significant at 1%.*
GDP pc is divided by 1000 to harmonize scale of variables.
Source: Authors' calculations.

Appendix 3. Regression Analysis Including Regional Dummies

	(1)	(2)	(3)	(4)
	Share of women in wage employment in the non-agricultural sector (%)			
Social Institutions and Gender Index	-37.546**	-35.084**	-20.494*	-21.55*
	(5.42)	(4.72)	(2.55)	(2.61)
Sub-Saharan Africa (SSA)	-1.05	2.17	9.869	6.738
	(0.29)	(0.44)	(1.97)	(1.19)
South Asia (SA)	-9.927*	-7.089	-4.246	0.005
	(2.00)	(1.20)	(0.76)	(0.00)
Latin America & Caribbean (LAC)	-3.427	-0.103	0.391	-0.118
	(1.30)	(0.02)	(0.10)	(0.02)
East Asia and Pacific (EAP)	-0.642	2.361	0.852	3.835
	(0.21)	(0.59)	(0.23)	(0.73)
Middle East & North Africa (MENA)	-10.287**	-7.61	-10.381*	-4.762
	(2.68)	(1.65)	(2.36)	(0.90)
Europe and Central Asia (ECA)	2.238	4.918	2.808	3.717
	(0.74)	(1.16)	(0.70)	(0.68)
GDP pc (/1000)		0.125	-0.189	-0.001
		(0.93)	(1.27)	(0.01)
Openness to Trade		0.003	0.011	-0.002
		(0.13)	(0.50)	(0.06)
Gender-related Development Index			46.986**	
			(3.86)	
Life-expectancy Ratio				48.202
				(1.29)
Literacy Ratio				28.78**
				(3.65)
Constant	47.16**	42.812**	8.173	-37.257
	(25.84)	(9.05)	(0.82)	(0.89)
Observations	116	109	107	93
R-squared	0.62	0.61	0.66	0.63

Absolute value of t statistics in parentheses: * significant at 5%; ** significant at 1%.
GDP pc is divided by 1000 to harmonize scale of variables.
Source: Authors' calculations.