Annex B. Estimating the economic cost of discriminatory social institutions

Estimating the cost of discriminatory social institutions

Using empirical econometric methods combined with the results from the SIGI, the Organisation for Economic Co-operation and Development (OECD) Development Centre explored the economic cost associated with gender-based discrimination. To analyse the relationship between gender-based discrimination in social institutions and income, the research uses different estimators – ordinary least squares (OLS) and two-stage least squares (2SLS) – and specifications. All resulting regressions have a high explanatory power and suggest a strong, negative and significant relationship between SIGI scores and income per capita in all specifications: higher levels of gender-based discrimination in social institutions are associated with lower levels of income per capita. The results are robust to the inclusion of additional controls, including gender gaps in outcomes. This means that the measurement obtained is the net effect of gender discrimination in social institutions on income, filtered from the effect of gender inequality in outcomes (Ferrant and Kolev, 2016[2]).

Box A B.1. Limitations of the model for regional analysis

With regard to any attempt to put a price tag on gender discrimination, caution should be used when interpreting the results and estimates for Southeast Asia. The calculation of the economic cost associated with gender-based discrimination is an exercise performed at the global level, using cross-country data. In the context of the SIGI regional analysis, applying the same global economic cost rate to a specific region is a strong assumption, as it ignores the fact that the regional intensity of gender discrimination results in different impacts on the economic cost. Unfortunately, substantial data limitations do not allow us to perform region-specific empirical analysis, while restricting the sample of countries would reduce the significance of the result, rendering the analysis ineffective.

The estimates thus constitute a reflection of the economic cost calculated at the global level. Other endogenous factors in Southeast Asia could yield a significant upward or downward impact on the final and real regional economic cost associated with gender-based discrimination.

Simulations run following the publication of the 2019 SIGI scores estimated the income loss associated with current levels of discrimination at up to USD 6 trillion, or 7.5% of current global income (OECD, 2019[3]). Restricting the results to the specific case of Southeast Asia, the cost of discriminatory social institutions amounts to around USD 200 billion, accounting for 7.5% of the regional Gross Domestic Product (GDP) (see Box A B.1 for more details on the limitations of the model for the regional analysis).

Further investigation of the channels of transmission shows that the negative impact of discriminatory social institutions on countries' level of income operates by lowering total factor productivity and by reducing the level of education and labour force participation among women. The results show a stronger effect for low-income countries. At the same time, they showed that gradually dismantling gender-based discrimination in social institutions could yield substantial macroeconomic benefits.

## Estimating the potential economic gains from gender equality

In order to measure the potential economic gains that countries and regions could harness from a significant reduction in gender discrimination, the SIGI developed four distinct scenarios (Ferrant and Kolev, 2016[2]):

- The first scenario, called "Business as usual" (BAU), assumes no change in the global level of gender-based discrimination in social institutions between 2018 and 2030, and therefore constitutes the baseline scenario.

- The second scenario, "SIGI upgrade", assumes that each country addresses its respective gender-based discrimination so that its SIGI score by 2030 allows it to change its SIGI category.[3] For instance, considering a country that is classified as having a medium level of gender-based discrimination, with a score between 30 and 40, the "SIGI upgrade" scenario assumes that by 2030, the country has addressed this discrimination in a way that has advanced it to the next category and the country is now classified as having a low level of gender-based discrimination – meaning a SIGI score of 20-30.

- The third scenario, "Best in region", assumes that each country in Southeast Asia addresses its respective gender-based discrimination so that by 2030, its SIGI score reaches that of the region's top performer in 2019. For instance, consider a country with a SIGI score of 45 that is located in a region where the top performer has a SIGI score of 20. The "Best in region" scenario assumes that by 2030, this country has addressed its own gender-based discrimination in a way that has enabled it to reach the score of the region's top performer in 2019. By design, this scenario also assumes that the score of the region's top performer does not change by 2030.

- Finally, the fourth scenario, "Gender parity", assumes that each country fully addresses its respective gender-based discrimination by 2030 and reaches a SIGI score of 0, indicating no discrimination.

These four scenarios enable the measurement of the potential economic benefits that Southeast Asia and the region's countries could gain from reductions in gender-based discrimination. In Southeast Asia, under the "BAU" scenario (the baseline scenario), GDP is expected to grow on average by 2% annually between 2018 and 2030 (USDA, 2017[4]).[4] Under the "SIGI upgrade" and "Best in region" scenarios, annual growth forecasts increase slightly to 2.2% and 2.4%, respectively, at the regional level. In monetary terms, this translates to forecasted GDPs per capita in 2030 that reach USD 11 603 and USD 11 915 under the "SIGI upgrade" and "Best in region" scenarios, respectively, compared with USD 11 398 under the "BAU" scenario. The "Gender parity" scenario assumes a gradual and total elimination of gender-based discrimination by 2030, and clearly yields the largest economic gains. Under the "Gender parity" scenario, average annual GDP growth is expected to reach 5.7% in Southeast Asia, equivalent to an annual increase of 3.7 percentage points compared with the baseline scenario. In monetary terms, the "Gender parity" scenario would lead to GDP per capita reaching USD 17 369 by 2030, representing a gain of nearly USD 6 000 per capita compared with the baseline scenario (Figure A B.1).

Figure A B.1. Economic gains in the Southeast Asian region from a reduction in gender-based discrimination

2018-30
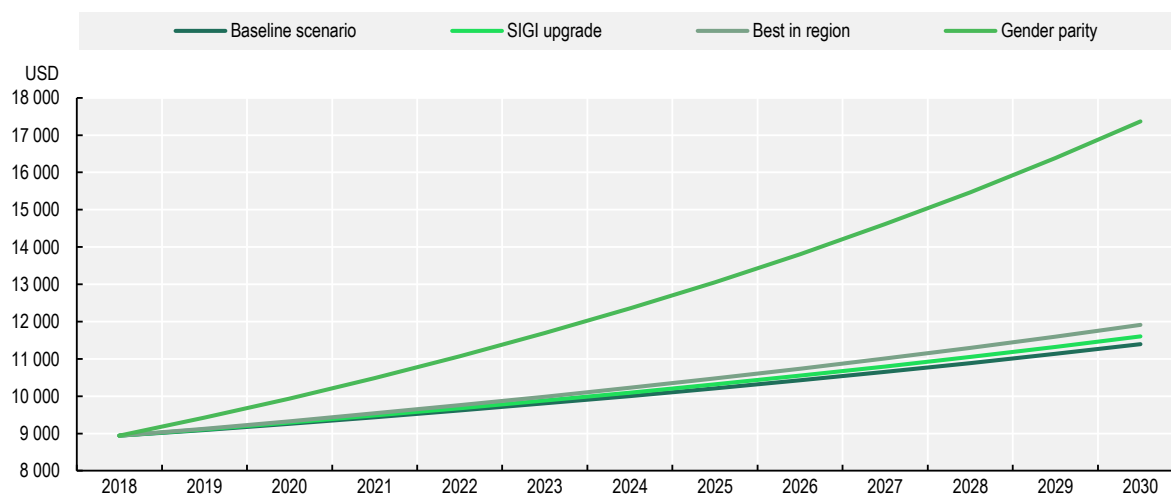
Note: GDP forecasts are measured in terms of 2010 real GDP per capita at current PPP. GDP forecasts follow four distinct scenarios: 1) the baseline scenario, using available growth forecasts, and assuming no change in the global level of gender-based discrimination in social institutions between 2018 and 2030; 2) "SIGI upgrade", assuming that each country would decrease gender discrimination enough by 2030 to be classified as the next SIGI classification level; 3) "Best in the region", assuming that each country would decrease gender discrimination enough by 2030 to attain the region's best performer's 2019 SIGI score; and 4) "Gender parity", assuming that each country would have eliminated gender-based discrimination in social institutions by 2030. Regional calculations do not include Brunei Darussalam, Malaysia and Timor-Leste (no SIGI score).
Source: OECD calculations based on (OECD, 2019[5]), *Social Institutions and Gender Index*, https://dx.doi.org/10.1787/f0c48e52-en; (USDA, 2017[4]), *ERS International Macroeconomic Dataset*, https://data.nal.usda.gov/dataset/international-macroeconomic-data-set; and (World Bank, 2019[6]), *World Development Indicators*, https://databank.worldbank.org/source/world-development-indicators.

StatLink 🔗 https://doi.org/10.1787/888934230091

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OECD (2019), *SIGI 2019 Global Report: Transforming Challenges into Opportunities*, Social Institutions and Gender Index, OECD Publishing, Paris, https://dx.doi.org/10.1787/bc56d212-en. [3]

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USDA (2017), *ERS International Macroeconomic Data Set*, https://www.ers.usda.gov/data-products/international-macroeconomic-data-set/ (accessed on 12 November 2020). [4]

World Bank (2019), *World Development Indicators (WDI)*, https://datacatalog.worldbank.org/dataset/world-development-indicators (accessed on 14 November 2019). [6]
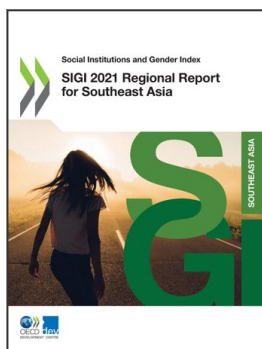
Notes

[1] ActionAID (2013), Bangladesh Bureau of Statistics (2013), Cabo Verde National Institute of Statistics (2012), ECLAC (2010), ECLAC (2016), General Statistics Office of Viet Nam (2014-15), Instituto Nacional de Estadistica y Censos – Costa Rica, National Institute of Statistics of Rwanda (2013-14), National Statistics, Republic of China (Chinese Taipei) (2000), OECD SIGI Burkina Faso country study (2018), OXFAM (2017), République de Guinée (2002-03), Statistics Sierra Leone (2003-04), Timor-Leste Ministry of Finance (2007), Troisième enquête Camerounaise auprès des ménages, UNSD time use data portal (2016), Zimbabwe 2014 LFS.

[2] ActionAID (2013), Bangladesh Bureau of Statistics (2013), Cabo Verde National Institute of Statistics (2012), ECLAC (2010), ECLAC (2016), General Statistics Office of Viet Nam (2014-15), Instituto Nacional de Estadistica y Censos – Costa Rica, National Institute of Statistics of Rwanda (2013-14), National Statistics, Republic of China (Chinese Taipei) (2000), OECD SIGI Burkina Faso country study (2018), OXFAM (2017), République de Guinée (2002-03), Statistics Sierra Leone (2003-04), Timor-Leste Ministry of Finance (2007), Troisième enquête Camerounaise auprès des ménages, UNSD time use data portal (2016), Zimbabwe 2014 LFS.

[3] The SIGI classifies countries into five categories based on their global SIGI score: very low level of discrimination (SIGI <20); low level of discrimination (SIGI 20-30); medium level of discrimination (SIGI 30-40); high level of discrimination (SIGI 40-50); and very high level of discrimination (SIGI >50).

[4] GDP forecasts are measured in terms of 2010 real GDP per capita at current PPP, and projections are extracted from the 2017 ERS International Macroeconomic Data Set of USDA.