

Global Markets Analyst

Investing in EM Womenomics

- Recent years have seen a surge of interest in investing for social and environmental impact, including across emerging markets. One aspect of social impact investing concerns the role of women in the economy, and here we look at the empirical question of investing based on gender equality in emerging economies in the context of the EM sovereign USD bond market. Specifically, we construct a Womenomics Index across EM sovereigns based on five factors: education, labour, agency, women in power and health.
- Conditions have improved for women in both EM and DM, though there is still room for improvement, especially within EM, which lags DM significantly in most categories. Within EM, the Middle East often lags other regions, with a relatively low share of female-to-male labour force participation and women in parliament, and few laws in place to protect women's rights. Conversely, EM Europe records the most equal outcomes for women, driven by the number of laws in place to protect women's rights and better health and education outcomes.
- To assess how investing based on Womenomics can impact investment returns, we look at how our Womenomics Index correlates with sovereign ratings and USD bond spreads, and we backtest long-short baskets of the USD bond spreads of the 8 highest- and lowest-scoring countries on our Womenomics Index ranking. Sovereigns that score higher on gender equality tend to have higher ratings and tighter spreads. Consistent with this, investing based on gender equality in EM sovereigns would have yielded some outperformance over time, led by protection during drawdowns.
- The broad conclusion that investing in Womenomics can protect portfolios in drawdowns, albeit at the cost of some performance in rallies, mimics our results for investing based on broader ESG themes. Essentially, these themes appear to capture a dimension of 'quality' that is not easily picked up in conventional ratings, and can provide greater resilience to portfolios against shocks and drawdowns, and be a way to invest for impact.

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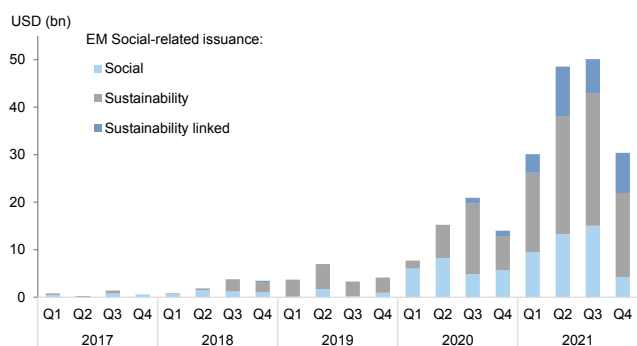
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Investing in Gender Equality Across Emerging Market Sovereigns

In recent years, there has been a surge of interest in investing for social and environmental impact, including across the emerging markets landscape. As companies and sovereigns have responded to this interest, we have witnessed a boom in ESG issuance related to social factors. For example, in 2021 alone, social issuance has amounted to ~\$160bn ([Exhibit 1](#)), more than in the last five years combined.¹

Exhibit 1: ESG issuance related to social factors has surged in 2021

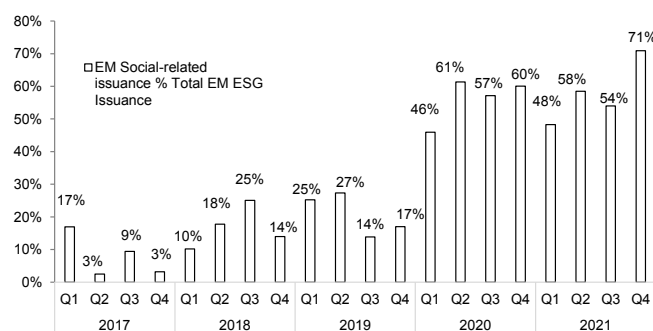
... ESG issuance from EM corporates, governments and government-related entities, as well as supranationals



Source: Bloomberg, Goldman Sachs Global Investment Research

Exhibit 2: ... and makes up an increasing share of gross ESG issuance in EM

ESG issuance from EM corporates, governments and government-related entities, as well as supranationals



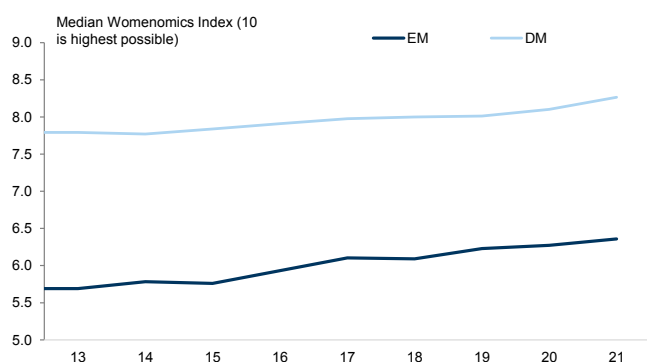
Source: Bloomberg, Goldman Sachs Global Investment Research

One aspect of social impact investing concerns the role of women in the economy – or Womenomics, as our colleagues have described it (see [here](#), [here](#) and [here](#)). This piece looks at whether there is a role for investing in Womenomics in emerging economies within the context of the EM sovereign bond market. Specifically, we construct a Womenomics Index across 72 EM sovereigns in the EM sovereign credit universe, based on five factors: education, labour, agency, women in power and health.

Generally we find that conditions have improved for women in EM over the years ([Exhibit 3](#)), though they still lag DM significantly. Other indices constructed for the same purpose of capturing gender equality have similar results. Whether we look at the female-to-male GNI per capita (i.e., a measure of the wealth gap), the [Women Business and the Law Index](#), the [Sustainable Development Goal Index](#) for Gender Equality, or our own Womenomics Index, we find that women lag men across the world, and this is especially pronounced in EM, with EM Europe and Latin America recording the most equal outcomes and the Middle East bringing up the rear ([Exhibit 4](#)).

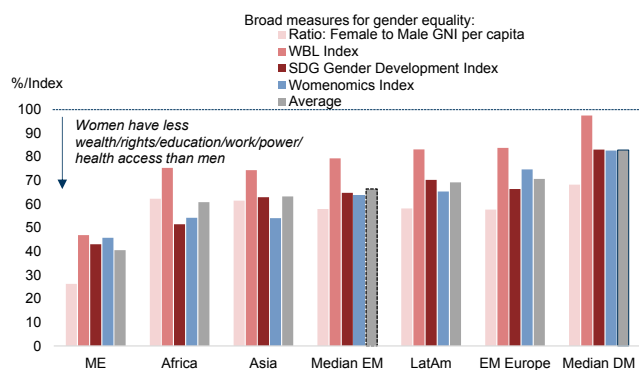
¹ For ESG issuance related to social factors we look at social, sustainability and sustainability-linked bonds. Here, proceeds from social issuance are designated to social factors, proceeds from sustainability issuance are spent on a combination of social and green factors, and sustainability-linked issuance aims to facilitate environmentally and socially sustainable goals.

Exhibit 3: Gender equality has improved across EM and DM ...



Source: Goldman Sachs Global Investment Research

Exhibit 4: ... but women still score lower than men when it comes to wealth, legal rights and a host of other factors



For this Exhibit the Womenomics Index was scaled to 100

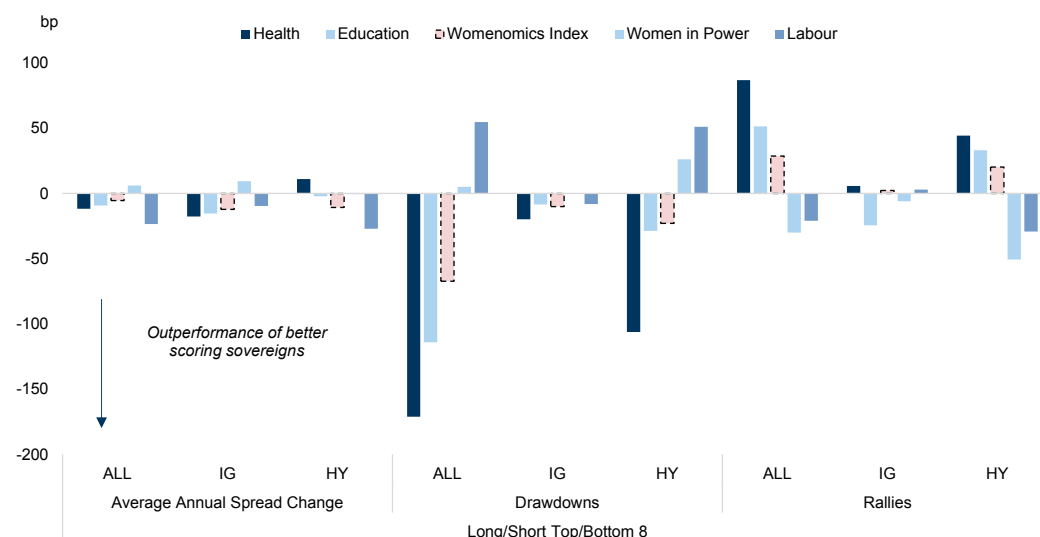
Source: Haver Analytics, World Bank, UN Sustainable Development Goals, Goldman Sachs Global Investment Research

The empowerment of women – broadly defined to mean that women can play a full and complete role in society – and economic development are closely linked, although causality is often bi-directional, as summarised by [Duflo \(2012\)](#). Moreover, as [Besley et al \(2017\)](#) suggest, there appear to be distinct improvements in overall leadership competence (among both men and women) in contexts where representation of women has increased. There is also a literature arguing that economic decisions may lead to less risky outcomes when women have more positions of leadership and power (see, for example, [Charness and Gneezy \(2012\)](#)). These factors – the impact on the level of economic outcomes and potentially on the riskiness of those outcomes – should matter to investors. In other words, the impact on both the mean and the volatility of any income or revenue distribution makes Womenomics a relevant consideration for investors who need to assess the riskiness of credits over long horizons.

Our results suggest that it is possible to rank sovereign credits based on these criteria, and a long-short basket of the USD bond spreads of the 8 highest- and lowest-scoring countries in our Womenomics Index would have yielded some outperformance over time, led by protection during drawdowns, as we discuss in greater detail below.

Exhibit 5: Investing based on Womenomics in EM would have resulted in some outperformance over time, led mostly by additional protection during drawdowns

Exhibit shows the average returns of a long/short strategy of the top/bottom 8 sovereigns within each factor since 2014



Source: Bloomberg, Goldman Sachs Global Investment Research

EM Womenomics — Getting Better, but Still Room to Improve

Constructing our Womenomics Index

For our Womenomics Index, we gather data based on five categories of gender equality:

- 1. Education:** We look at the share of women with an upper secondary school education.
- 2. Labour:** We look at female-to-male labour force participation, both outright and controlling for differences in education.
- 3. Agency:** We ask whether a country's laws fully protect women's rights, by looking at a combination of 10 laws which capture factors such as women's right to equal remuneration for work of equal value, whether women are legally protected from domestic violence, and sexual harassment in the work place.
- 4. Women in Power:** We look at the share of women in managerial positions in corporations, as well as the share of women in parliament and in ministerial positions.
- 5. Health:** This category looks at whether the sex-at-birth ratio is skewed more heavily towards boys than the average natural rate, the share of women who have experienced domestic violence, the adolescent fertility rate, and the maternal mortality rate.

We standardize the data from 0 to 10 (10 being the highest and 0 being the lowest), such that 10 approaches parity between men and women, or in instances where such a

distinction is less obvious (for example within some of the health variables), the standardization is based on the minimum and maximum data point for each variable over time and across all countries.

This gives us a ranking for each variable relative to its historical and cross-sectional distribution, and allows us to compare and average scores across data series with different units of measurement (i.e., this is not an absolute ranking). We then average across all the component series in each category: for instance, the Labour Index is an average of the scores of the two variables within that category. The individual indexes for the EM sovereigns can be found in more detail in [Exhibit 60](#) and [Exhibit 61](#) in the Appendix. We also display the scores for a set of DM economies in [Exhibit 62](#) and [Exhibit 63](#) for benchmarking purposes. Finally, we construct the Womenomics Index as an equally weighted average of the five categories above.²

The variables we use are available on an annual frequency, and are usually updated with a lag of ~2 years. As such, we assume that the current lag of the data has been persistent over time: for example, the adolescent fertility rate for 2019 was only made available later in 2021, so we use the 2019 data for the 2021 Index, and use the 2018 data for the year 2020, and so on.

² For the countries where data are not available, we take the average of the other components.

EDUCATION



Women's access to education is improving.



85% of women in **EM** now have a primary school education and **50%** have attended an upper secondary school.

Nevertheless, this compares to **98%** of women in **DM** with a primary school education, and **76%** with an upper secondary education.

Within **EM**, the dispersion is large, with only **12%** of women in Africa having received an upper secondary education, compared with **84%** in EM Europe.

LABOUR

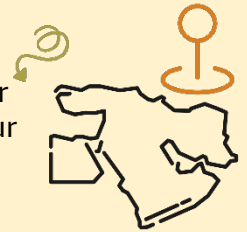


Since 2005, female-to-male labour force participation has increased by ~5pp in **EM** and **DM**, to **~70%** in EM and **~85%** in DM respectively



a trend which is highly correlated with women receiving higher levels of education.

Within **EM**, the Middle East lags other regions, with a female-to-male labour force participation of just **~43%**, compared with **~82%** in Africa.



AGENCY



Legislation to protect women's rights has improved across **EM** and is the most comprehensive in EM Europe, followed by Latin America and Asia.

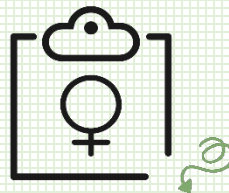


As of 2020, the ability to discriminate on access to credit is still present in **56%** of **EMs**.

Conversely, a larger share of EM countries have legislation addressing domestic violence (89%).



HEALTH



Despite having made significant advances, the maternal mortality rate and the adolescent fertility rate are still high for women in parts of Africa and Latin America.



Women are more likely to experience physical or sexual violence in **EM** than in **DM**, and Asia stands out for having a sex-at-birth ratio that skews heavily in favour of boys.

WOMEN IN POWER



Women now make up **~33%** of managerial positions in **EM** compared with **~34%** in **DM**.



However, **EM** still lags when it comes to the share of women in parliament, where women now make up **~38%** of parliament in **DM**, compared with just **~23%** in EM.

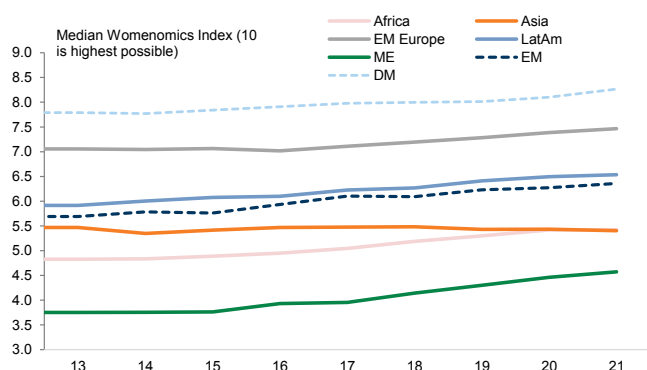
Our Womenomics Index has improved over time, led by Education, Agency and Women in Power

Exhibit 6 shows the median EM sovereign Womenomics Index by region since 2013. The median EM sovereign scores 6.36 out of 10 and this has improved by ~0.67 points since 2013. This is ~2 points lower than the median DM sovereign, which has shown an improvement of ~0.5 points over the same period. Looking at the regional medians, we find that the Middle East (ME) has improved the most, though it still lags behind other regions. Conversely, the median country in EM Europe scores the highest among EM, but has only improved slightly, with a score of ~7 throughout the sample.

Looking across the categories, we find that the median country scores the highest in the Health category, followed by Agency, with the median country’s score increasing from 7 to 8 over the sample horizon (Exhibit 7). The Labour Index has improved only marginally (~0.05 points) between 2013 and 2021 and while Education has seen significant improvement over the period, the median score remains relatively low (4.93). Similarly, the median Women in Power Index has improved the most, by ~1.15 points, yet the level remains relatively low in 2021 (4.10).

Exhibit 6: The Middle East (ME) has improved the most, but still lags other regions

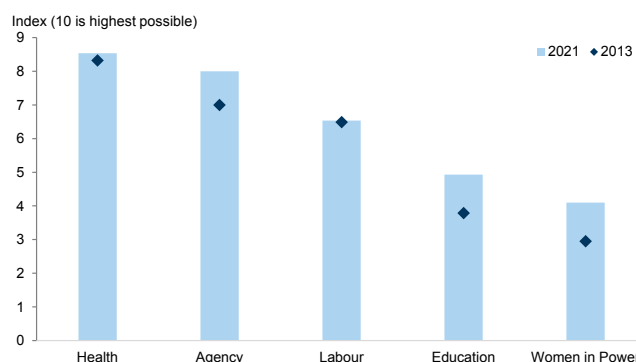
Exhibit shows the median Womenomics Index by region



Source: Haver Analytics, World Bank, UN Sustainable Development Goals, Goldman Sachs Global Investment Research

Exhibit 7: EM countries score the highest in the Health category followed by Agency

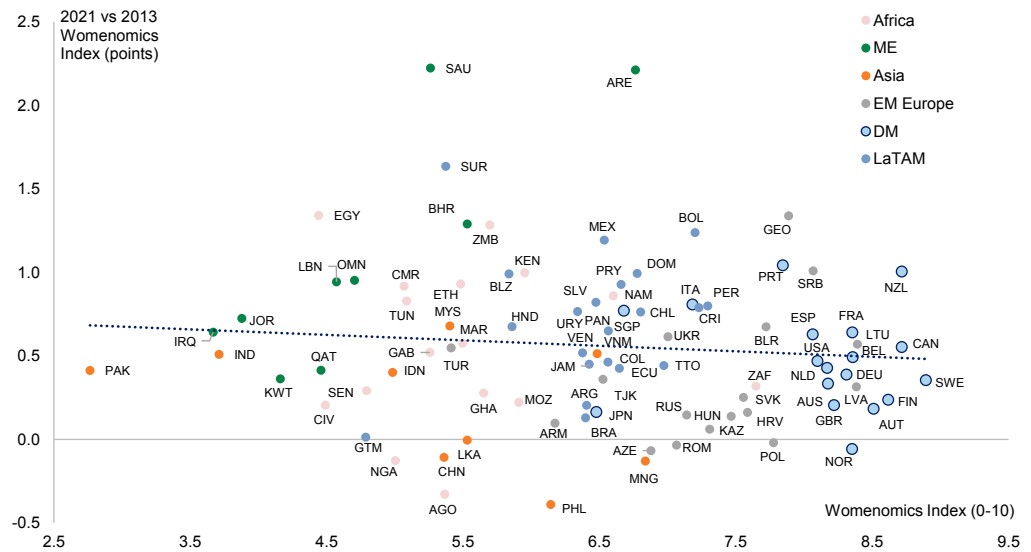
Exhibit shows the median index across the five factors



Source: Haver Analytics, World Bank, UN Sustainable Development Goals, Goldman Sachs Global Investment Research

To better assess the cross-country development over time, Exhibit 8 displays the latest Womenomics Index on the x-axis and the change since 2013 on the y-axis. Here, besides DM, countries in EM Europe stand out as scoring the highest, such as Georgia, Lithuania, Latvia, Serbia, Poland and Belarus, but with a large dispersion in development, showing a significant improvement in Georgia and a small decline in Poland. Conversely, we find countries in the Middle East, Africa and Asia often score the lowest, but again with a significant dispersion both in the overall score and their development since 2013.

Exhibit 8: There is a high dispersion in the development of the Womenomics Index across regions

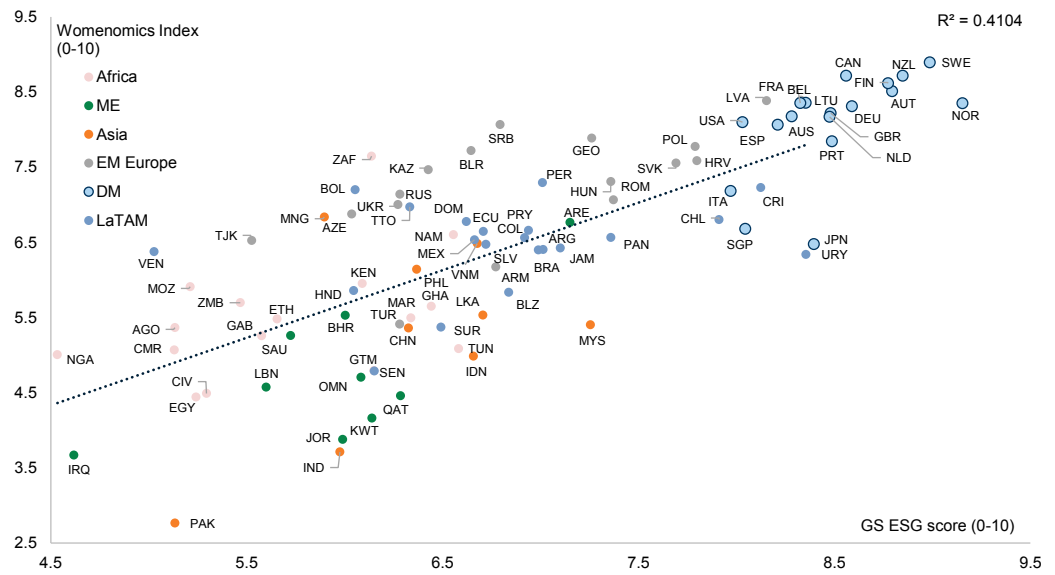


Source: Haver Analytics, World Bank, UN Sustainable Development Goals, Goldman Sachs Global Investment Research

Finally, it is worth noting that our EM Sovereign ESG Scores also incorporate a subset of the variables used to construct the EM Womenomics Index, namely the female-to-male labour force participation, women in parliament and the adolescent fertility rate. As such, 3 out of the 11 variables in our Womenomics Index feature in our ESG scores, which in turn has 29 variables (i.e., ~27% of the variables in our Womenomics Index make up ~10% of our ESG Index).³ Although the overlap is relatively small, we find a strong relationship between our Womenomics index and ESG scores, suggesting Womenomics may be correlated with a broader set of variables, as the literature suggests (Exhibit 9).

³ Within the Womenomics Index we count Agency as one variable (which is made up of 10 underlying data series) and labour force participation controlling for education as one variable (which is made up of 3 underlying data series).

Exhibit 9: There is a strong positive correlation between our Womenomics Index and ESG scores



Source: World Bank, SDG Database, Fund for Peace, Freedom House, University of Notre Dame, The Social Progress Imperative, Doing Business, Our World in Data, European Commission, Haver Analytics, UN Sustainable Development Goals, Goldman Sachs Global Investment Research

Education: Women in EM lag DM when it comes to years spent in education

Within our Womenomics Index, we find a significant improvement in education over the years. Here, we focus on the proportion of female adults with an upper secondary education. We also look at how this compares to the proportion of men with an education in the same country, to better understand when gender biases might be at play. However, as access to education is considered a fundamental human right, our index only incorporates the share of women who have gained access to an upper secondary education.⁴

For the median EM economy in the fixed income universe, ~85% of women have a primary school education, ~65% have a primary and secondary school education, and ~50% also have an upper secondary school education (Exhibit 10). This compares to ~98% of women in DM who have attended primary school, ~85% with a lower secondary education, and ~76% with an upper secondary school education. As such, on a headline level, the largest difference between EM and DM appears to be the number of years women have spent in education. However, the variation within EM is large, with only ~12% of women in Africa having attained an upper secondary education compared with ~84% in EM Europe (i.e., CEE and CIS).

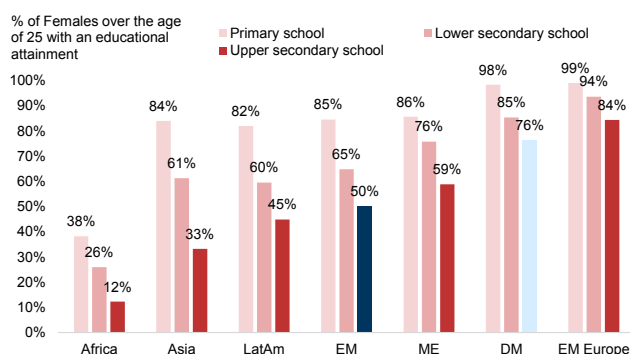
More broadly, we find that the gap between EM and DM narrows when we compare the proportion of women with an education to the proportion of men (Exhibit 11). However, Africa is still an outlier, with only ~60-70% of women gaining the same level of education as men.

⁴ In terms of data quality, we find that looking at the share of the population which has gained an education is a more accurate representation of number of children who are able to complete school. By contrast, we find that data on gross enrolment often show that 100% of girls and boys are enrolled in school, which may not accurately reflect the number of children out of school in any given year.

UNICEF links the barriers to girls’ education to a number of factors, such as poverty, child marriage, gender-based violence, and/or a preference for investing in the education of boys over girls. Moreover, biases at schools can also create barriers to girls’ education, with unmet safety, hygiene or sanitation needs, or teaching practices that are not gender-responsive.

Exhibit 10: Africa lags EM when it comes to the proportion of women with an education ...

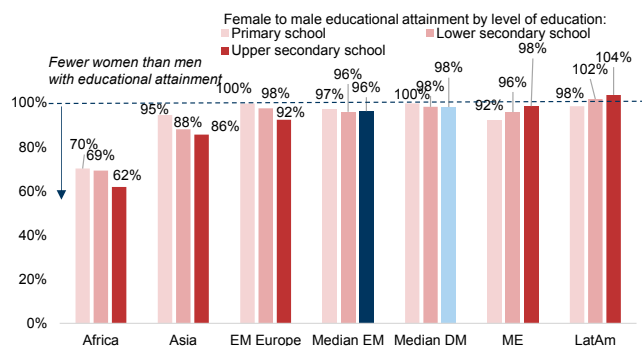
Exhibit shows the median educational attainment for women across regions



Source: World Bank, Haver Analytics, Goldman Sachs Global Investment Research

Exhibit 11: ... and Africa has the largest educational gap between men and women

Exhibit shows the median female-to-male educational attainment across regions



Source: World Bank, Haver Analytics, Goldman Sachs Global Investment Research

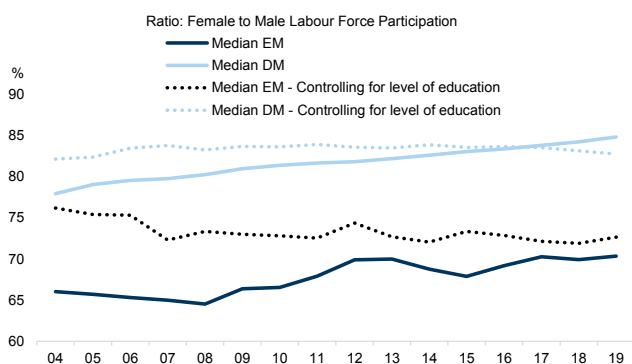
Labour: The Female-to-male labour force participation is especially low in the Middle East, and high in Africa

As with education, EM lags DM when it comes to female labour force participation (Exhibit 12). Female-to-male labour force participation has improved across both over the years, but we find that this improvement falls away when we control for the level of educational attainment across the female and male working population (this is categorized as basic, intermediate or advanced). In other words, there is a positive correlation between women’s level of education and women entering the labour force.

Exhibit 13, which shows female-to-male labour force participation across the different classifications of education, clearly illustrates that this increases significantly for women with advanced degrees. Nevertheless, the gap between female and male labour force participation remains higher for EM than DM even when controlling for educational differences, with an especially low female-to-male labour force participation in the Middle East. Conversely, Africa has a relatively high female-to-male labour force participation across the different levels of education (see total female-to-male labour force participation in Exhibit 37 in Appendix A).

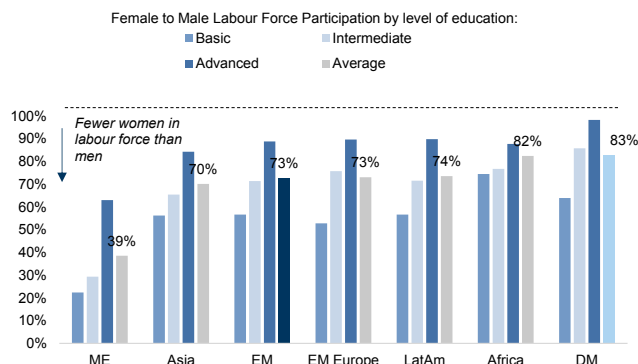
There are several hypotheses as to why the female labour force participation still lags male labour force participation. The International Labour Organization links the persistent labour force gap to a number of factors, such as gender role bias (i.e., 20% of men and 14% of women globally still believe it is unacceptable for a woman to have a paid job outside the home), lack of safe and affordable transport, and lack of child care.

Exhibit 12: Female labour force participation has increased across the world ...



Source: Haver Analytics, World Bank, Goldman Sachs Global Investment Research

Exhibit 13: ... but remains low compared with that of men, especially in the Middle East



Source: Haver Analytics, World Bank, Goldman Sachs Global Investment Research

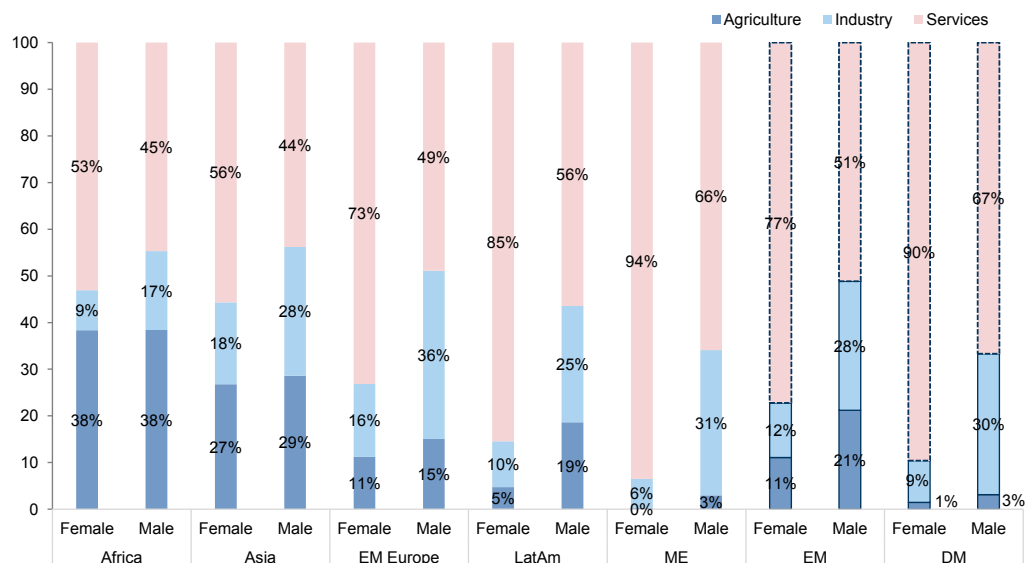
These factors also become transparent in the types of employment that are typically dominated by women, which further contributes to the wealth gap between men and women. For example, women are more likely to work in services, and often make up a larger share of the workforce in the Tourism industry, which is more cyclical (Exhibit 14).⁵ As a result, female employment has also been impacted more by Covid-19, as it relates both to women’s exposure to the more vulnerable parts of the service sector which took a bigger hit from the pandemic, and to their employment in the health care sector (globally, women make up 70% of the health and social sectors), which was on the front line of the Covid-19 response.

Moreover, in DM, where female labour force participation is higher than in EM, women are more likely to work part-time (see Exhibit 39 in the Appendix), a factor that has been linked to household chores still primarily falling on the woman, and in turn contributes to the gender pay gap (see, for example, Claudia Goldin’s A Grand Gender Convergence: Its Last Chapter).

⁵ According to the World Bank, service jobs consist of “wholesale and retail trade and restaurants and hotels; transport, storage, and communications; financing, insurance, real estate, and business services; and community, social, and personal services”.

Exhibit 14: Women are more likely than men to be employed in services

Exhibit shows the share of female and male employment across Agriculture, Industry and Services



Source: Haver Analytics, World Bank, Goldman Sachs Global Investment Research

Agency: Legislation to protect women's rights has improved across EM

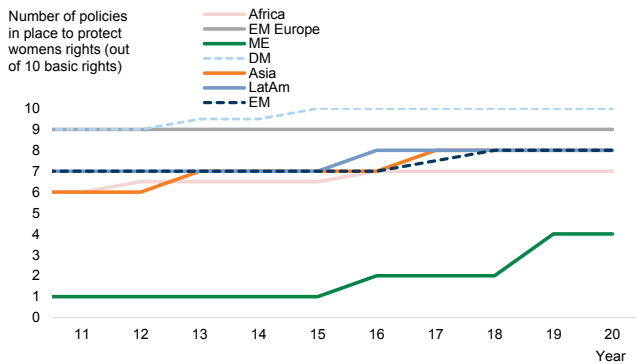
The infrastructure and laws surrounding the protection of women in the work place may be an important factor in explaining their labour force participation (see, for example, [Exhibit 43](#) in Appendix), but it is also a contributor to gender inequality beyond the work force. To assess this, we look at a set of 10 policy variables from the World Bank (the variable takes the value 1 if the relevant policy is in place and 0 otherwise), ranging from 2011 and 2020. We then add these up such that countries can be ranked from 0 (where none of these policies exist) to 10 (where all of these exist).

In particular, we look at whether (i) sons and daughters have equal rights to inherit assets from their parents, (ii) there is no legal provision in place that requires a married woman to obey her husband, (iii) there is legislation specifically addressing domestic violence, (iv) a woman has the same rights to remarry as a man, (v) the law mandates equal remuneration for females and males for work of equal value, (vi) the law prohibits discrimination in employment based on gender, (vii) there is legislation on sexual harassment in employment, (viii) the dismissal of pregnant workers is prohibited, (ix) paid maternity leave of at least 14 weeks is available, and, finally, (x) the law prohibits discrimination in access to credit based on gender.

[Exhibit 15](#) shows the median score per region, with 10 being the highest number of policies in place to protect women's rights. Generally, we find that the median DM economy has had all 10 types of policies in place since 2015. Conversely, within EM, EM Europe has the highest number of policies in place (with an unchanged median of 9 since 2011), followed by Latin America and Asia, where the median country now has 8 out of 10 policies. While still lagging behind, women's rights have also improved in the Middle East, going from a median of 1 out of 10 policies in place in 2011, to 4 in 2019.

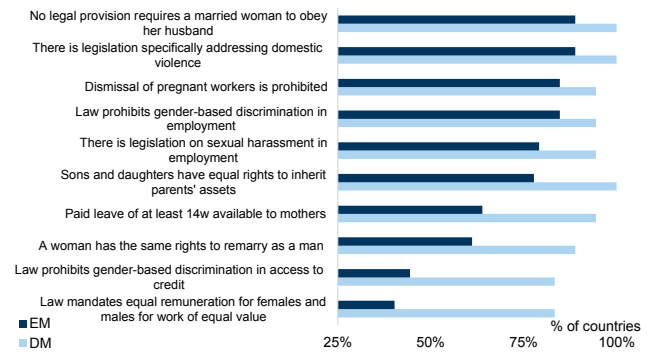
Beneath the surface, [Exhibit 16](#) shows the share of countries in EM and DM that have each of the 10 laws to protect women in place. According to World Bank data, as of 2020, only 40% of EM economies in our sample had a law mandating equal pay between men and women, and the ability to discriminate in access to credit is still present in over 56% of EMs. Conversely, a larger share of EM countries have legislation addressing domestic violence (89%).

Exhibit 15: The number of laws in place to protect women’s rights have improved since 2011 ...



Source: World Bank, Goldman Sachs Global Investment Research

Exhibit 16: ... but EM still lags DM on all fronts



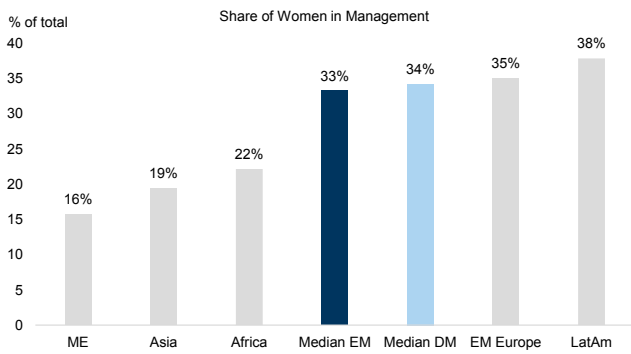
Source: World Bank, Goldman Sachs Global Investment Research

Power: The number of women in power is small but rising

One reason why women’s rights in EM lag DM may be related to the share of women in power. Here, we look at a number of factors, such as the share of women in managerial positions, and the share of women in parliament and ministerial positions. We find that, despite women in EM having a lower labour force participation and fewer policies in place to protect women’s rights than in DM, women make up ~33% of managerial positions in EM compared with ~34% in DM ([Exhibit 17](#)), with EM Europe and Latin America having a higher share of women in management than DM, and the Middle East, Asia and Africa lagging behind.

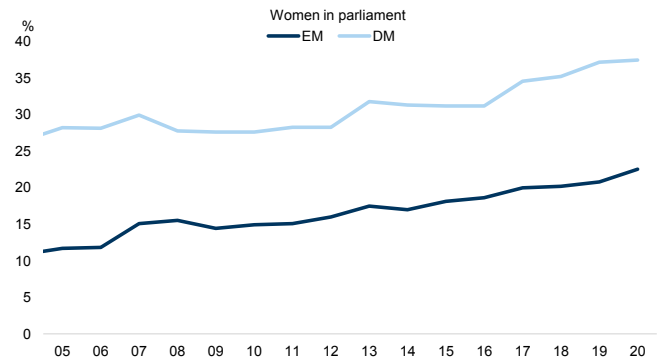
When it comes to women in government, however, EM still lags DM ([Exhibit 18](#)). For example, women now make up ~38% of parliament in DM, compared with just ~23% in EM, though both have improved by almost 10pp since 2005.

Exhibit 17: EM has a relatively high share of women in managerial positions ...



Source: Haver Analytics, World Bank, Goldman Sachs Global Investment Research

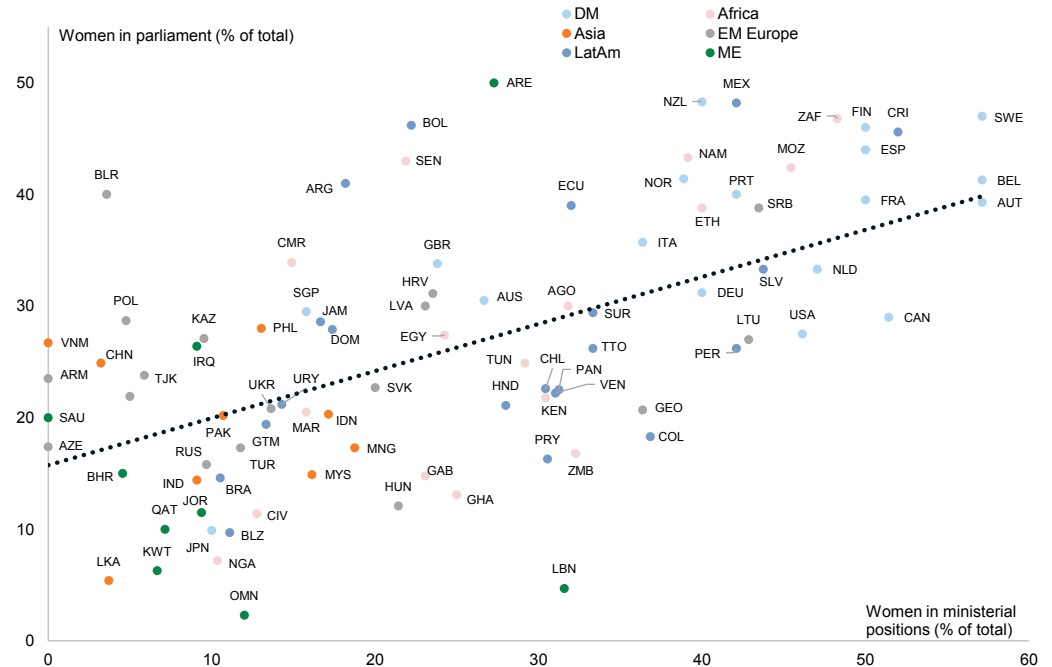
Exhibit 18: ... but lags DM when it comes to the share of women in parliament



Source: Haver Analytics, World Bank, Goldman Sachs Global Investment Research

The low share of women in parliament is also evident across government, as seen with the strong correlation between the number of women in ministerial positions and women in parliament (Exhibit 19). Here it is worth noting that the dispersion within EM and DM is high, and that some EM economies, such as Costa Rica, South Africa and Mexico, rank similar to or better than other DM economies when it comes to female representation in government.

Exhibit 19: There is a significant dispersion within EM, with countries such as Mexico, South Africa and Costa Rica having more women in government than some DMs



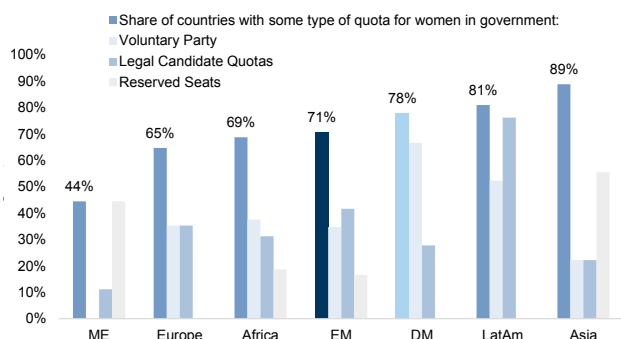
Source: Haver Analytics, World Bank, Goldman Sachs Global Investment Research

This may partly be due to quotas meant to increase the share of women in government. For example, Mexico, South Africa and Costa Rica all have a combination of voluntary

party quotas and legislated quotas. Looking more broadly at the countries in our sample, we find that the majority have some type of quota for the share of women in government (Exhibit 20). In EM, countries appear to use a combination of voluntary and constitutional/legislative quotas (i.e., legal candidate quotas or reserved seats), whereas DM appears to lean more heavily towards voluntary party quotas (see [here](#) for definitions on the different types of quotas).

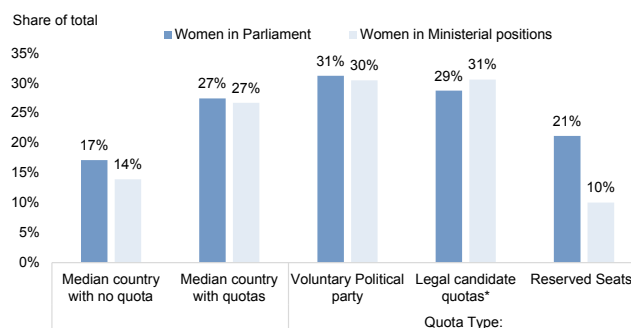
When looking at the difference in the share of women in government between countries with and without quotas, we do find that the median country with quotas has more women in government, and that voluntary quotas appear to be at least as successful as legal candidate quotas, unlike reserved seats (Exhibit 21). Nevertheless, the overall share of women in government is still relatively low for this group, and raises the point that the effectiveness of quotas depends on their design (i.e., the rules, and sanctions for non-compliance). For example, an electoral law stating that women must make up 50% of the candidates on the party list for local elections may be less effective in bringing women into government if the placement of the female candidates is not considered (i.e., all the female candidates are at the bottom of the list).

Exhibit 20: A large number of countries in EM and DM have some type of quota for women in government



Source: International IDEA, World Bank, Goldman Sachs Global Investment Research

Exhibit 21: Voluntary quotas appear to be at least as effective as legal candidate quotas in increasing the share of women in government



*legislative or constitutional

Source: International IDEA, World Bank, Goldman Sachs Global Investment Research

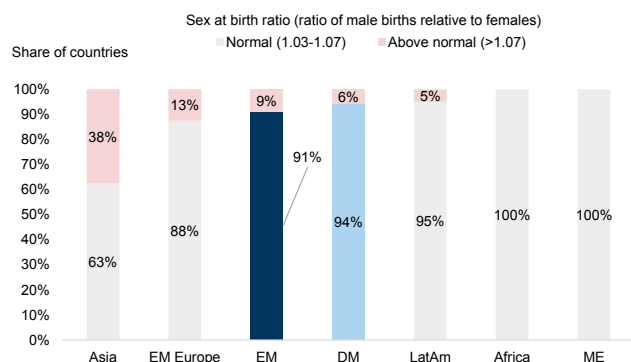
Health: EM often lags DM when it comes to Women’s Health

Finally, women’s health is an important feature of gender equality and one which has seen only limited improvement over the last 10 years. Here, we look at factors such as the birth skew favouring boys over girls, the prevalence of domestic violence, the adolescent fertility rate and the maternal mortality rate. While a number of other variables are also important in capturing women’s health and the gender biases in society, these were the factors with the best data availability, allowing us to capture cross-sectional differences and developments over time.

While girls typically have a higher ‘probability of survival’ than boys once born (see, for example, [Exhibit 53](#) in Appendix A), the natural ratio of male to female births tends to favour boys (i.e., roughly 103 to 107 male births to every 100 female births). In some parts of the world, however, the perception that boys have more value than girls has

increased this skew. As [Exhibit 22](#) shows, the birth skew in favour of boys is especially high in Asia, parts of EM Europe, DM and Latin America. The sex selective birth ratio in favour of boys is often linked to estimates of missing women, which economist Amartya Sen originally estimated at more than 100 million. Other factors, such as female infanticide, inadequate health care and nutrition for girls, are also believed to have contributed to this number.

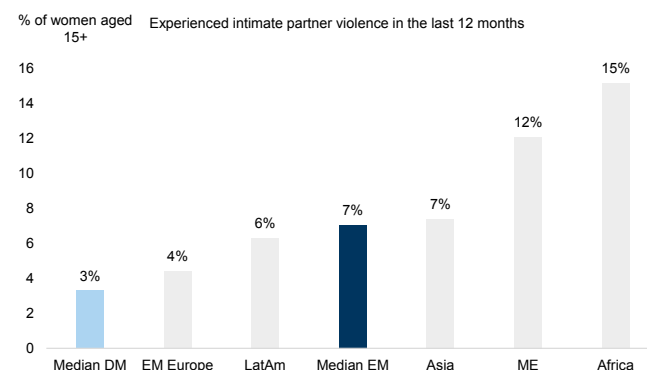
Exhibit 22: The sex-at-birth ratio skews more heavily in favour of boys in parts of Asia, EM Europe, DM and Latin America



Source: World Bank, Goldman Sachs Global Investment Research

Exhibit 23: Reported incidents of domestic violence are prevalent across the world, and highest in Africa

Exhibit shows median across regions



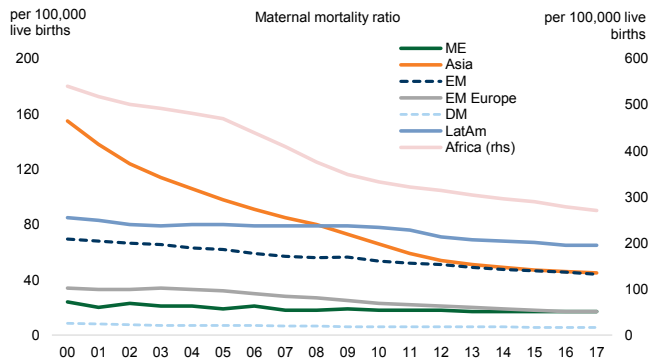
Only one country in the Middle East was surveyed (Jordan)

Source: UN Sustainable Development Goals, Goldman Sachs Global Investment Research

Male violence against women is another stark factor affecting women’s health, with a sharp rise in domestic violence often quoted as the shadow pandemic during the height of the Covid-19 lockdowns across the world. The UN estimates that 1 in 3 women will experience physical or sexual violence in their lifetime, and survey data from 2000-2018 on domestic violence shows that this is more prevalent in EM than in DM ([Exhibit 23](#)). More specifically, during the survey, Africa had the highest rates of women who had experienced violence over the previous 12 months.

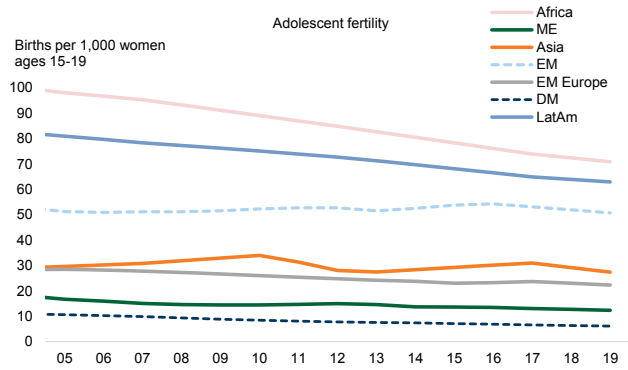
In addition, while other factors related to women’s health have improved significantly in the last 20 years, the maternal mortality rate is still high for women in parts of Africa, as well as in Latin America and Asia ([Exhibit 24](#)). Similarly, the adolescent fertility rate is high in Africa and Latin America ([Exhibit 25](#)), a factor which we find to be strongly correlated with access to contraception, such as access to and prevalence of contraceptives, and information and unmet needs for help with family planning (see [Exhibit 54](#) in Appendix). While not shown here, some of these factors are also correlated with a country’s GDP per capita, which in part biases in favour of wealthier countries that have better health care systems and infrastructure.

Exhibit 24: The maternal mortality rate has fallen, but remains high in EM



Source: World Bank, Haver Analytics, Goldman Sachs Global Investment Research

Exhibit 25: Similarly, the adolescent fertility rate has fallen, but is higher in EM than in DM



Source: Haver Analytics, World Bank, Goldman Sachs Global Investment Research

Investing Based on EM Womenomics

Bringing all this together, we look at how investors can incorporate these elements into their investment decisions within EM Sovereign Credit, and the potential impact on their returns.

Our Womenomics Index has a small positive correlation with ratings ...

First, we look at how our Womenomics Index correlates with spreads and ratings, by looking at the cross correlation matrix between our various sub-categories and our Womenomics Index, spreads and ratings ([Exhibit 26](#)). Generally, we find that the correlation with ratings is positive, yet relatively small (33%), and even smaller but negative for spreads (~5%). As such, sovereigns that score better on our Womenomics Index generally have higher ratings and tighter spreads. We find some exceptions within the sub-categories, however, with an almost negligible correlation between ratings and Women in Power or Labour.

Exhibit 26: Across most categories there is a small positive correlation with ratings and a negative correlation with spreads

	Education	Labour	Agency	Women in Power	Health	Womenomics Index
Education						67%
Labour	13%					66%
Agency	31%	60%				80%
Women in Power	-8%	38%	38%			48%
Health	54%	-12%	8%	-2%		43%
Rating	33%	11%	16%	7%	35%	33%
Spreads	-2%	-8%	-3%	2%	-6%	-5%

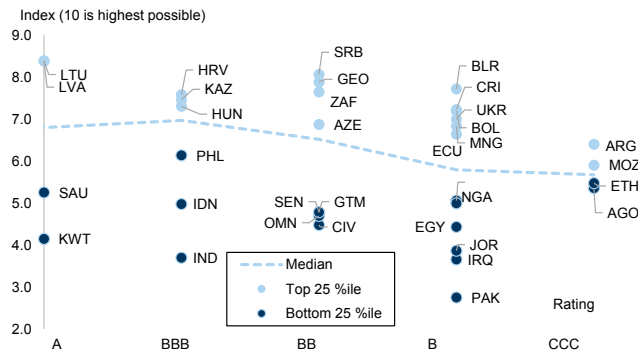
Source: Bloomberg, Haver Analytics, World Bank, UN Sustainable Development Goals, Goldman Sachs Global Investment Research

Looking across rating buckets, this relationship also holds on the median (for instance, the median A-rated sovereign Womenomics Index is 6.80, while the median B-rated credit is 5.65; [Exhibit 27](#)). However, under the hood, there is clear dispersion within the rating buckets, with lower-rated sovereigns such as South Africa scoring higher than BBB-rated sovereigns like the Philippines.

... and countries with a higher Womenomics score tend to have tighter spreads (even when controlling for ratings)

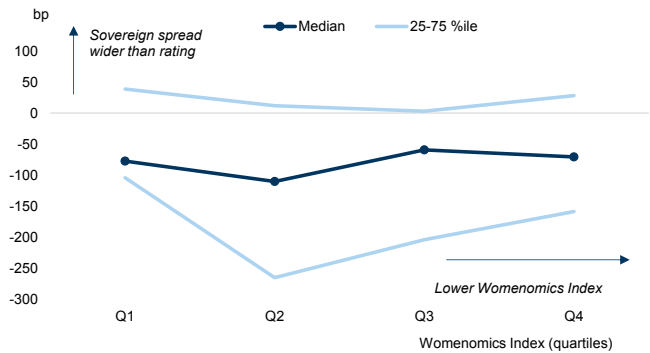
We also look at the rating-neutral spreads across the quartiles of the Womenomics Index in [Exhibit 28](#) (i.e., this is the difference between the sovereign's average USD bond spread and the average IG or HY sovereign spread, depending on which rating category the sovereign falls under). Here, we find that when controlling for ratings, higher-scoring sovereigns only have slightly tighter spreads than their peers, though the interquartile range is large (Appendix A shows these correlations, with ratings and spreads across the 5 factors).

Exhibit 27: We find a positive (yet small) correlation between sovereigns' ratings and their Womenomics score



Source: Bloomberg, Haver Analytics, World Bank, UN Sustainable Development Goals, Goldman Sachs Global Investment Research

Exhibit 28: Countries with a higher Womenomics score have slightly tighter spreads once controlling for ratings



Source: Bloomberg, Haver Analytics, World Bank, UN Sustainable Development Goals, Goldman Sachs Global Investment Research

One way to examine this in a more statistically robust way is to regress average annual spreads (we take the log of spreads) since 2013 for the 72 EM countries in our sample on the Womenomics Index. This allows us to assess the relationship between spreads and our Womenomics Index over time, and controlling for ratings. We display the results of this exercise in [Exhibit 29](#). Overall, we find that countries with higher Womenomics Indexing tend to have tighter spreads, also when controlling for ratings, and that this relationship is statistically significant (regressions (1) and (2)).

When we include each category of the aggregate separately, we find the same negative association for Education, Agency and Health (though Health is not robust to the inclusion of ratings) and for Women in Power (though this is not statistically significant). For Labour, this analysis suggests that a better Labour Index tends to be associated with wider spreads; however, this is not a statistically significant relationship (except when controlling for ratings) and is not robust to different specifications: for instance in a univariate regression, a better Labour Index is associated with tighter spreads (even when controlling for ratings). We also find a negative relationship between a higher index value and spreads when we regress each of the categories univariately (regressions (5) to (14)). This negative association still holds with the inclusion of rating levels, except for Women in Power and Labour, where it becomes statistically insignificant.

Exhibit 29: A higher Womenomics score is associated with tighter spreads, and is statistically significant even when controlling for ratings

	Dependent variable: Log EMBI spread													
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Womenomics Index (0-10)	-0.28***	-0.1***	-	-	-	-	-	-	-	-	-	-	-	-
Education (0-10)	-	-	-0.1***	-0.04***	-0.14***	-0.05***	-	-	-	-	-	-	-	-
Labour (0-10)	-	-	0.02	0.04**	-	-	-0.04**	-0.011	-	-	-	-	-	-
Agency (0-10)	-	-	-0.08***	-0.07***	-	-	-	-	-0.11***	-0.05***	-	-	-	-
Women in Power (0-10)	-	-	-0.03	-0.0007	-	-	-	-	-	-	-0.05**	-0.01	-	-
Health (0-10)	-	-	-0.1***	0.012	-	-	-	-	-	-	-	-	-0.22***	-0.04**
Rating	-	0.55***	-	0.54***	-	0.55***	-	0.58***	-	0.56***	-	0.58***	-	0.57***
R-squared	15%	59%	20%	60%	16%	59%	1%	57%	8%	59%	1%	57%	10%	57%
Observations	571	568	535	532	535	532	571	568	571	568	571	568	571	568

Source: Bloomberg, Haver Analytics, World Bank, UN Sustainable Development Goals, Goldman Sachs Global Investment Research

Investing based on Womenomics would have outperformed over time

To assess how investing based on Womenomics might impact investor returns over time, we take three different approaches. The first is a long/short strategy based on the entire universe of EM sovereigns. Here, we go long the 8 highest-scoring countries at the beginning of the year, and short the 8 bottom-scoring countries. The other two strategies follow a similar approach, but within IG and HY respectively, to control for the potential rating and spread bias that we found above.

The investment baskets are turned at the beginning of every year, as new data enters the index (we assume the current data lags have been persistent over time, to avoid the benefit of hindsight).⁶ As such, the latest baskets were initiated on January 1, 2021, using all the data which would have been available at the time, and will only be changed on January 1, 2022. Each of the strategies is based on spread changes, as opposed to total returns, thereby netting out any impact from duration, which may impact performance in any given year.

Across the strategies we exclude defaulted sovereigns, and smaller credits with persistent idiosyncratic risks. Since the strategies are implemented at the beginning of the year, we only include sovereigns which had existing USD bonds at that time (i.e., sovereigns are not included throughout the year if they issue USD bonds), and exclude sovereigns if all of their USD bonds were due to mature throughout the investment year.

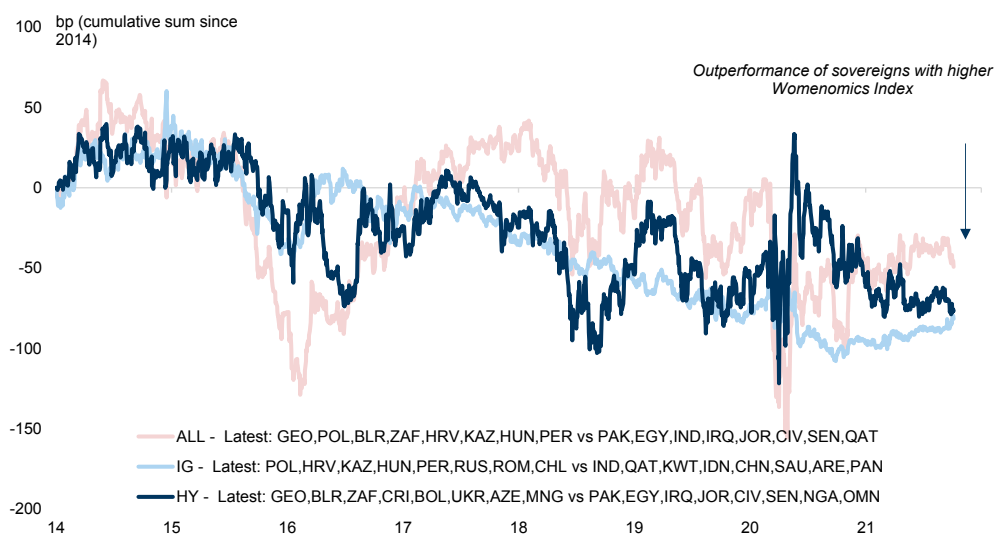
[Exhibit 30](#) shows the spread performance of the three investment baskets since 2014 (negative values means higher Womenomics scoring sovereigns have outperformed), and [Exhibit 31](#) presents the summary statistics, showing the average annual spread performance over the same period, and how this differs in a risk-off and risk-on episodes.

Overall, we find that investing based on higher-Indexing Womenomics countries would have outperformed over time. For the overall basket (named 'ALL'), we find that most of

⁶ This is not possible for domestic violence against women, where we only have one data point per country from 2000 to 2018.

this outperformance would have come during drawdowns, consistent with our findings above that higher-scoring countries also have higher ratings. However, we find a similar pattern even when controlling for ratings (i.e. within IG and HY) though the magnitude of the outperformance during drawdowns is smaller.

Exhibit 30: A long/short strategy of the sovereigns with the highest/lowest Womenomics score would have outperformed over time ...



Source: Bloomberg, Goldman Sachs Global Investment Research

Exhibit 31: ... and would have been relatively defensive in nature, even within IG and HY

	Top 8			Bottom 8			Long/Short Top/Bottom 8		
	ALL	IG	HY	ALL	IG	HY	ALL	IG	HY
Average Annual Spread Change (bp)	-22	-23	-17	-17	-11	-6	-5	-12	-11
Drawdowns (bp)	117	86	198	184	96	221	-67	-10	-23
Rallies (bp)	-104	-86	-125	-133	-88	-145	29	2	20

The drawdowns and rallies are the average returns of 5 episodes where the EMBIG-Div spread tightened/widened by -100bp, and have been standardized to 100bp

Source: Bloomberg, Goldman Sachs Global Investment Research

Finally, we find a similar pattern within almost all of the categories of our Womenomics ranking (Exhibit 32), suggesting that even if investors choose to focus only on certain aspects of gender equality, they are likely to see an outperformance over time.⁷

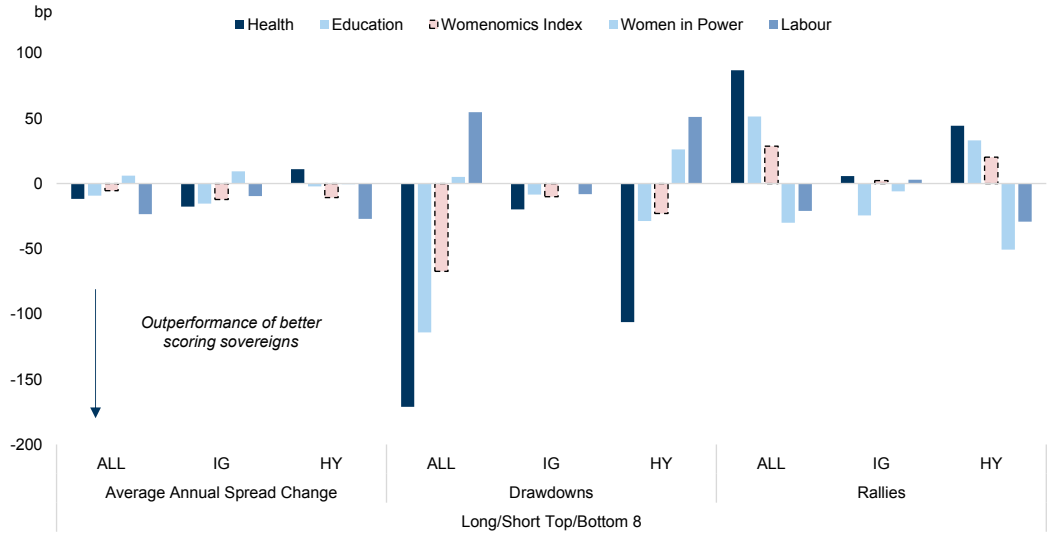
Across the factors, we find that Health and Education exhibit the strongest 'flight-to-quality', whereby most of the outperformance comes from protection during drawdowns. Conversely, we find that Women in Power and Labour tend to be higher beta in nature, especially within HY, where they lead to outperformance in rallies and underperformance during drawdowns. This is consistent with our finding above that both Labour and Women in Power have no significant correlation with sovereign ratings (see Exhibit 26, as well as Exhibit 50 and Exhibit 40 in the Appendix), and suggests that focusing on various aspects of gender equality within the sovereign investment space

⁷ Our backtesting excludes Agency, where by construction the highest-/lowest-scoring countries are too small to get any robust signal for a long/short investment strategy over time.

can offer some diversification of risks within the portfolio as well.

Exhibit 32: Focusing on various aspects of gender equality within the sovereign investment space can offer some diversification of risks within the portfolio

Exhibit shows the average returns of a long/short strategy of the top/bottom 8 sovereigns within each factor since 2014



Source: Bloomberg, Goldman Sachs Global Investment Research

Sara Grut, Teresa Alves, Kamakshya Trivedi and Mutale Chewe*

**Mutale is an intern in the EM Strategy Team*

Related Research: Womenomics



EM Sovereign 2021 ESG scores — Still Positive Momentum

Jan 14, 2021

In this Global Markets Analyst we update our EM sovereign ESG scores with the latest available data, and take a look at recent developments on a country-specific and a regional level. Overall, the median EM sovereign's ESG score was largely unchanged over the last year, but with some differentiation across regions.



The Bigger Picture: Black Womenomics

Mar 9, 2021

Black women face a 90% wealth gap. The economic and business case for diversity will only grow as US demographics and the labor force are set to become increasingly racially and ethnically diverse over the coming decades. Yet, due to complex historical factors and ongoing discrimination, Black Americans and especially Black women remain heavily disadvantaged across a broad range of economic measures, including wealth, earnings, and health.



Womenomics: Europe moving ahead

Oct 13, 2020

Labour participation rates for women in Europe on the rise. In Europe there are some tantalising signs of progress on women's contribution to the economy: most notably, participation rates for women in the workforce have risen dramatically and continue to move up. In many European countries they are now above rates in the US. In comparison, the US has flat-lined in terms of female participation in the workforce since the late 1990s



Womenomics 5.0: 20 Years On

Apr 16, 2019

Since our initial Womenomics report in 1999, Japan now enjoys record female labor participation (71%) that surpasses the US and Europe, generous parental leave benefits, improved gender transparency, and labor reforms. Areas for improvement include: a dearth of female leaders, gender pay gaps, inflexible labor contracts, tax disincentives, insufficient caregiving capacity, and unconscious biases.

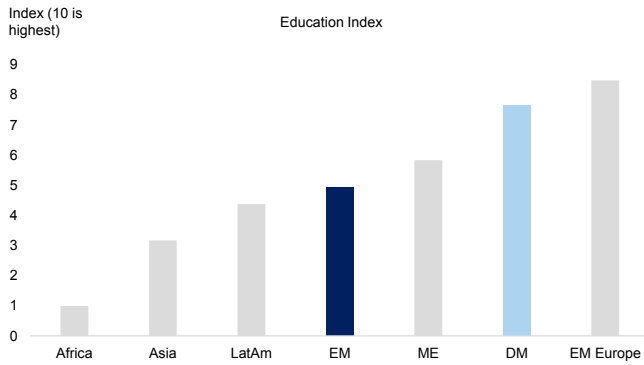
Explore our dedicated theme page:

[Womenomics >](#)

Appendix

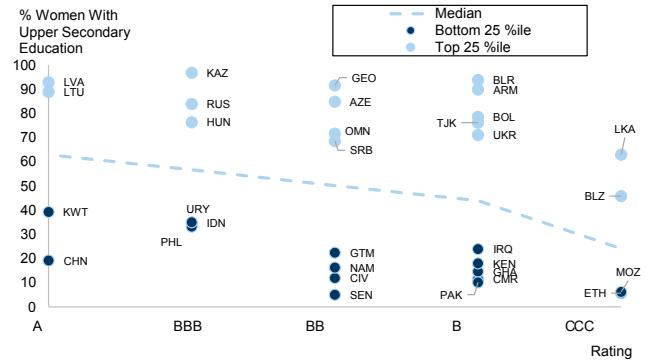
Appendix A — Additional Analysis 1) Education

Exhibit 33: Latest median Education Index by region



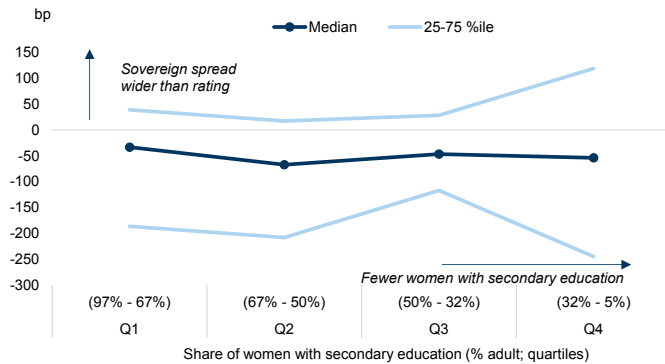
Source: Goldman Sachs Global Investment Research

Exhibit 34: Countries with higher ratings tend to have more women with an upper secondary education



Source: Bloomberg, World Bank, Haver Analytics, Goldman Sachs Global Investment Research

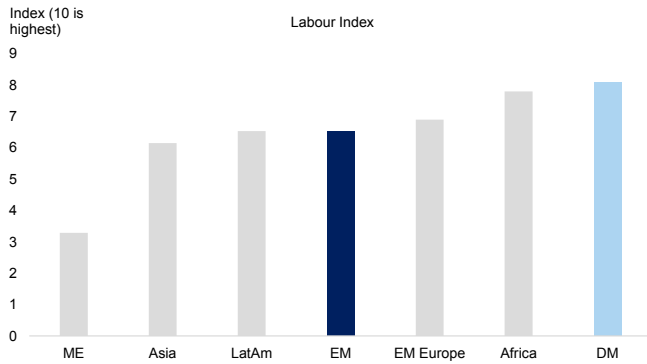
Exhibit 35: Once controlling for ratings, we do not find a significant correlation between countries' spreads and the share of women with an upper secondary education



Source: Bloomberg, World Bank, Haver Analytics, Goldman Sachs Global Investment Research

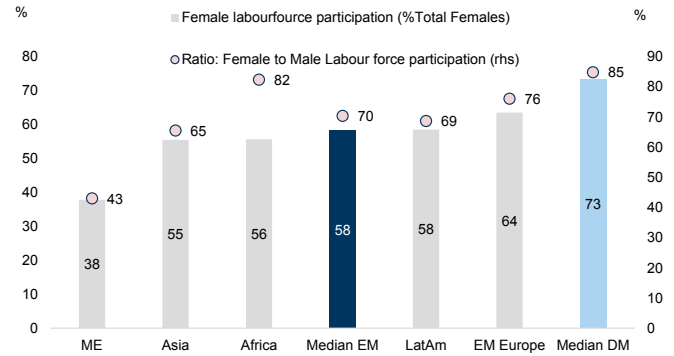
2) Labour

Exhibit 36: Latest median Labour Index by region



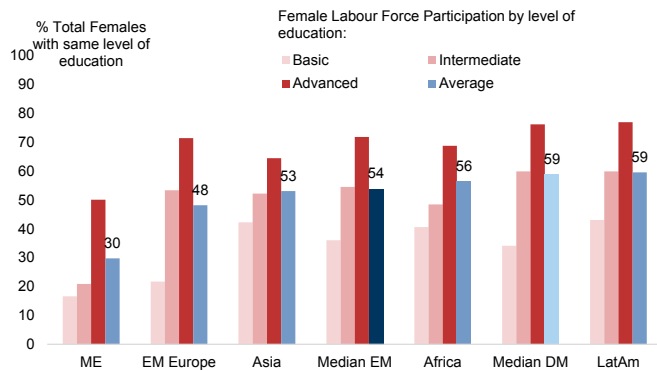
Source: Goldman Sachs Global Investment Research

Exhibit 37: The EM female labour force participation lags DM ...



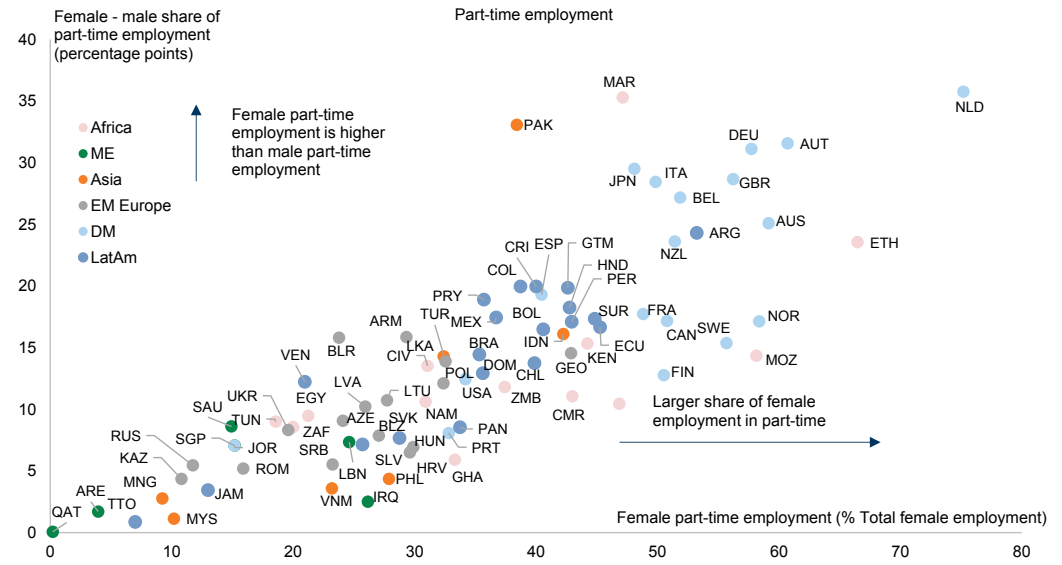
Source: Haver Analytics, World Bank, Goldman Sachs Global Investment Research

Exhibit 38: ... but the gap narrows when controlling for the level of education



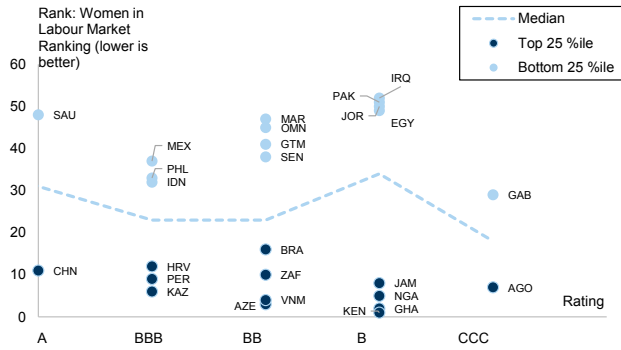
Source: Haver Analytics, World Bank, Goldman Sachs Global Investment Research

Exhibit 39: Female part-time employment is more prevalent in DM than EM



Source: Haver Analytics, World Bank, Goldman Sachs Global Investment Research

Exhibit 40: We do not find a significant correlation between countries' ratings and their labour score ...



Source: Bloomberg, Haver Analytics, World Bank, Goldman Sachs Global Investment Research

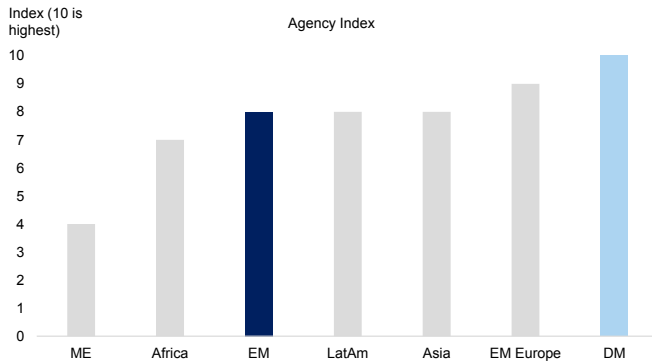
Exhibit 41: ... or between their labour score and spreads, once controlling for ratings



Source: Bloomberg, Haver Analytics, World Bank, Goldman Sachs Global Investment Research

3) Agency

Exhibit 42: Latest median Agency Index by region



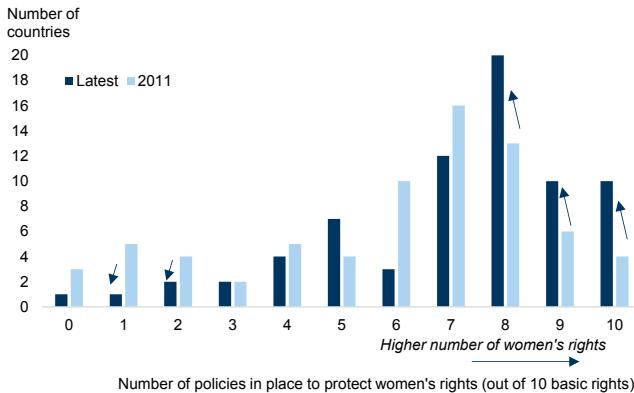
Source: Goldman Sachs Global Investment Research

Exhibit 43: EM lags DM when it comes to the number of laws in place to protect women in the work place



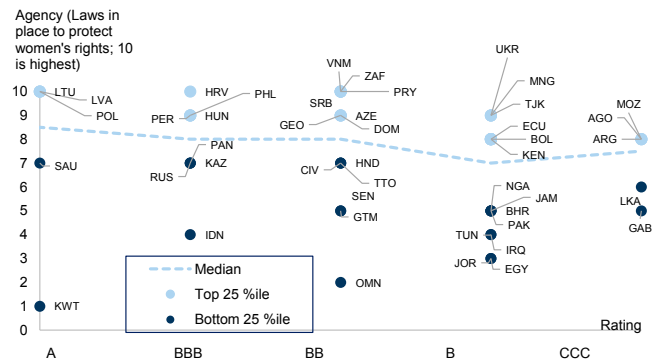
Source: World Bank, Goldman Sachs Global Investment Research

Exhibit 44: The share of countries with a higher number of policies in place to protect women's rights has increased



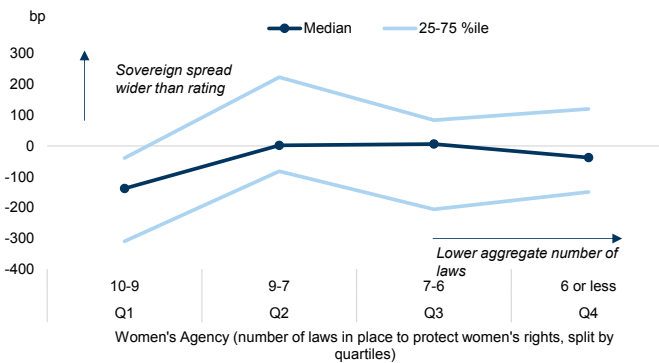
Source: World Bank, Goldman Sachs Global Investment Research

Exhibit 45: There is no significant correlation between the number of policies in place to protect women and ratings



Source: Bloomberg, World Bank, Goldman Sachs Global Investment Research

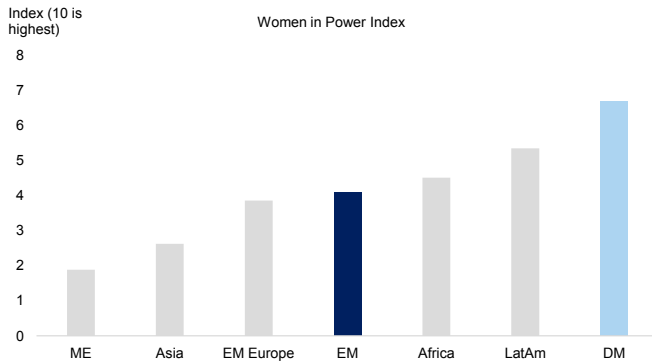
Exhibit 46: Countries with the highest number of policies in place tend to have tighter spreads when controlling for ratings



Source: Bloomberg, World Bank, Goldman Sachs Global Investment Research

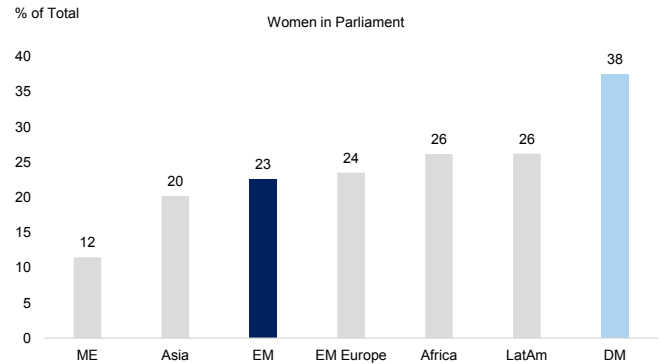
4) Women in Power

Exhibit 47: Latest median Women in Power Index by region



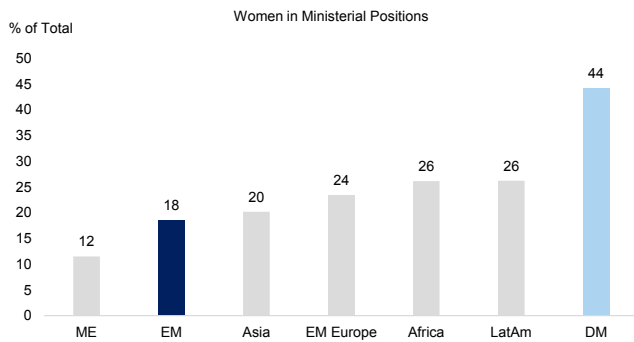
Source: Goldman Sachs Global Investment Research

Exhibit 48: Latest Women in Parliament



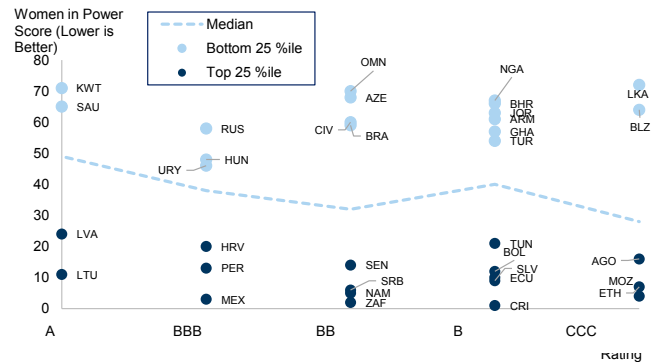
Source: World Bank, Goldman Sachs Global Investment Research

Exhibit 49: Latest Women in Ministerial Positions



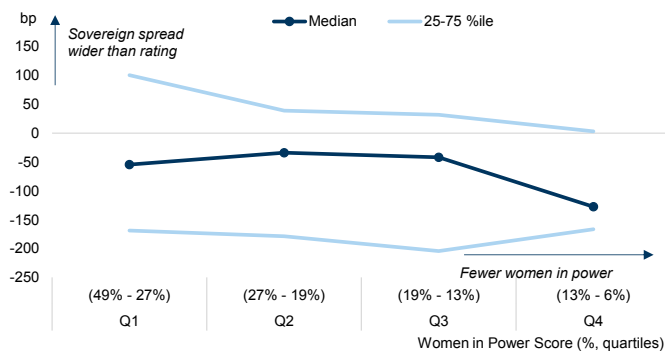
Source: World Bank, Goldman Sachs Global Investment Research

Exhibit 50: There is no significant correlation between Women in Power and ratings



Source: Bloomberg, Haver Analytics, World Bank, Goldman Sachs Global Investment Research

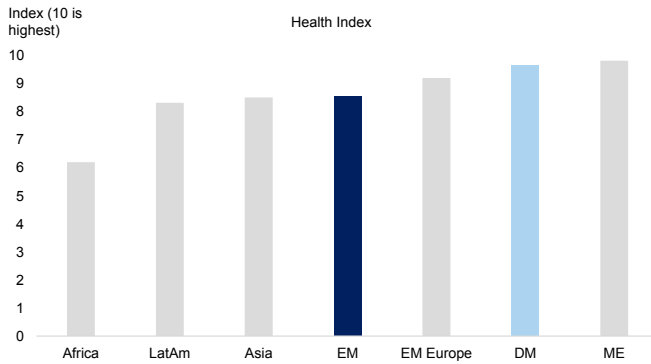
Exhibit 51: There is no significant correlation between Women in Power and spreads



Source: Bloomberg, Haver Analytics, World Bank, Goldman Sachs Global Investment Research

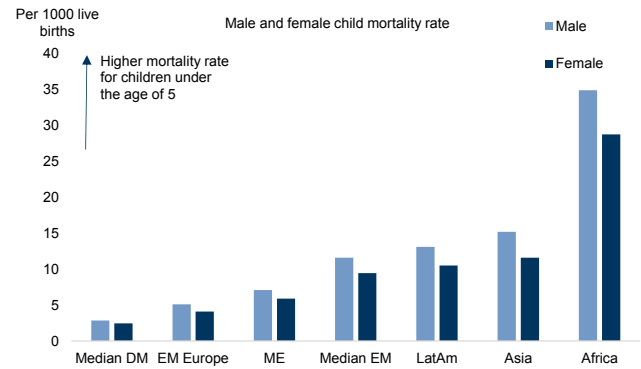
5) Women's Health

Exhibit 52: Latest median Health Index by region



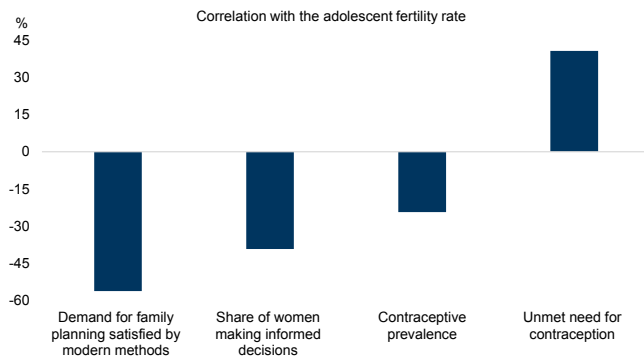
Source: Goldman Sachs Global Investment Research

Exhibit 53: The child mortality rate tends to be higher for boys than girls



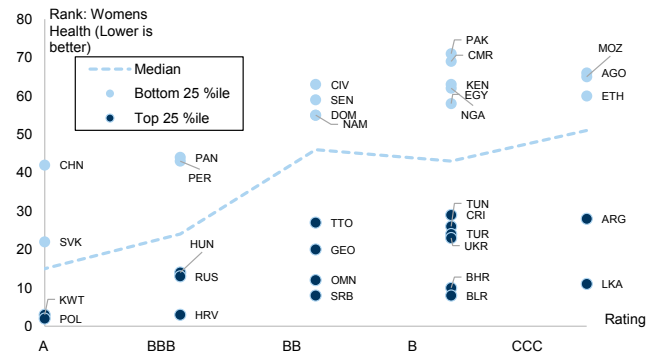
Source: World Bank, Haver Analytics, Goldman Sachs Global Investment Research

Exhibit 54: We find that the adolescent fertility rate is correlated with unmet need for contraception, contraceptive prevalence, the share of women making informed decisions, and whether demand for family planning is satisfied by modern methods



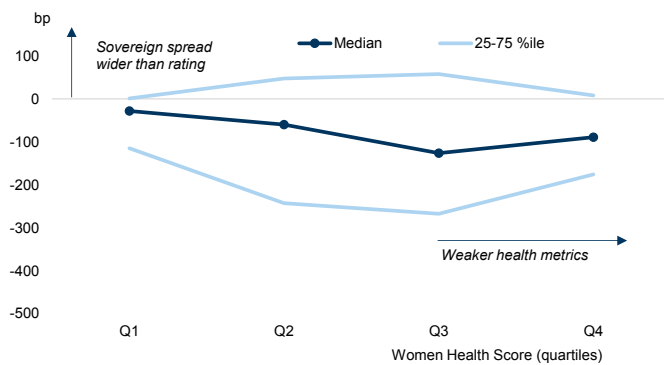
Source: Haver Analytics, World Bank, Goldman Sachs Global Investment Research

Exhibit 55: There is a positive correlation between countries' health scores and their ratings



Source: Bloomberg, Haver Analytics, World Bank, UN Sustainable Development Goals, Goldman Sachs Global Investment Research

Exhibit 56: We find no significant correlation with spreads once controlling for ratings



Source: Bloomberg, Haver Analytics, World Bank, UN Sustainable Development Goals, Goldman Sachs Global Investment Research

Appendix B — Variables Used for the Womenomics Index

Exhibit 57: Definition, source and description of education and labour variables

Variable	Description	Source	Frequency	Period used
Education and labour				
Education				
Female educational attainment, at least completed upper secondary (% of female population)	The percentage of the female population ages 25 and over that attained or completed upper secondary education.	Haver Analytics, World Bank	Annual level	2004-2020
Labour				
Female to male labour force participation rate (% of female to male population)	The proportion of the female to male population ages 15 and older that are economically active: all people who supply labour for the production of goods and services during a specified period. It includes people who are currently employed and people who are unemployed but seeking work as well as first-time job-seekers. Not everyone who works is included, however. Unpaid workers, family workers, and students are often omitted, and some countries do not count members of the armed forces.	Haver Analytics, World Bank	Annual level	2004-2019
Female to male labour force with advanced education (% of female to male working-age population with advanced education)	The percentage of the female to male working age population with an advanced level of education who are in the labour force. Advanced education comprises short-cycle tertiary education, a bachelor's degree or equivalent education level, a master's degree or equivalent education level, or doctoral degree or equivalent education level according to the International Standard Classification of Education 2011 (ISCED 2011).	Haver Analytics, World Bank	Annual level	2004-2019
Female to male labour force with intermediate education (% of female to male working-age population with intermediate education)	The percentage of the female to male working age population with an intermediate level of education who are in the labour force. Intermediate education comprises upper secondary or post-secondary non-tertiary education according to the International Standard Classification of Education 2011 (ISCED 2011).	Haver Analytics, World Bank	Annual level	2004-2019
Female to male labour force with basic education (% of female to male working-age population with basic education)	The percentage of the female to male working age population with a basic level of education who are in the labour force. Basic education comprises primary education or lower secondary education according to the International Standard Classification of Education 2011 (ISCED 2011).	Haver Analytics, World Bank	Annual level	2004-2019

Source: Haver Analytics, World Bank, Goldman Sachs Global Investment Research

Exhibit 58: Definition, source and description of agency variables

Variable	Description	Source	Frequency	Period used
Agency				
There Is No Legal Provision That Requires A Married Woman To Obey Her Husband (1=yes; 0=no)	Whether a married woman is legally required to obey her husband.	World Bank	Annual level	2011-2020
There is legislation specifically addressing domestic violence (1=yes; 0=no)	Whether there is legislation addressing domestic violence that includes criminal sanctions or provides for protection orders for domestic violence, or the legislation addresses "harassment" that clearly leads to physical or mental harm in the context of domestic violence.	World Bank	Annual level	2011-2020
Law mandates equal remuneration for females and males for work of equal value (1=yes; 0=no)	Whether there is a law that obligates employers to pay equal remuneration to male and female employees who do work of equal value. "Remuneration" refers to the ordinary, basic or minimum wage or salary and any additional emoluments payable directly or indirectly, whether in cash or in kind, by the employer to the worker and arising out of the worker's employment. "Work of equal value" refers not only to the same or similar jobs but also to different jobs of the same value.	World Bank	Annual level	2011-2020
Law prohibits discrimination in employment based on gender (1=yes; 0=no)	Whether the law generally prevents or penalizes gender-based discrimination in employment. Laws that mandate equal treatment or equality between women and men in employment are also counted for this question. It is not considered whether the laws only prohibit discrimination in one aspect of employment, such as pay or dismissal.	World Bank	Annual level	2011-2020
There is legislation on sexual harassment in employment (1=yes; 0=no)	Whether there is a legal provision or legislation that specifically protects women against sexual harassment in employment, including unwelcome verbal or physical conduct of a sexual nature.	World Bank	Annual level	2011-2020
Paid leave of at least 14 weeks is available to women (1=yes; 0=no)	The indicator measures whether women are legally entitled to at least 14 weeks (98 calendar days) of paid leave for the birth of a child through maternity leave, parental leave or a combination of both.	World Bank	Annual level	2011-2020
Dismissal of pregnant workers is prohibited (1=yes; 0=no)	Whether the law explicitly prohibits the dismissal of pregnant women, if pregnancy cannot serve as grounds for termination of a contract or if dismissal of pregnant workers is considered a form of unlawful termination, unfair dismissal or wrongful discharge.	World Bank	Annual level	2011-2020
The Law Prohibits Discrimination In Access To Credit Based On Gender (1=yes; 0=no)	Whether the law prohibits discrimination by creditors based on gender or prescribes equal access for both men and women when conducting financial transactions, entrepreneurial activities or receiving financial assistance, or if the law prohibits gender discrimination when accessing goods and services (and services are defined to include financial services).	World Bank	Annual level	2011-2020
Sons and daughters have equal rights to inherit assets from their parents (1=yes; 0=no)	Whether there are gender-based differences in the rules of intestate succession for transfer of property from parents to children.	World Bank	Annual level	2011-2020
A woman has the same rights to remarry as a man (1=yes; 0=no)	The answer is "Yes" if women and men have an equal right to remarry. The answer is "No" if provisions limit a woman's right to remarry, such as requiring a waiting period before remarriage to which a man is not subject, or divorce is legally prohibited.	World Bank	Annual level	2011-2020

Source: World Bank, Goldman Sachs Global Investment Research

Exhibit 59: Definition, source and description of women in power and health variables

Variable	Description	Source	Frequency	Period used
Women in power and health				
Women in power				
Women in parliament (%)	The proportion of seats held by women in national parliaments is the number of seats held by women members in single or lower chambers of national parliaments, expressed as a percentage of all occupied seats; it is derived by dividing the total number of seats occupied by women by the total number of seats in parliament.	Haver Analytics, World Bank	Annual level	2004-2020
Women in ministerial positions (%)	Women in ministerial level positions is the proportion of women in ministerial or equivalent positions (including deputy prime ministers) in the government. Prime Ministers/Heads of Government are included when they hold ministerial portfolios. Vice-Presidents and heads of governmental or public agencies are excluded.	World Bank	Annual level	2012-2020
Women in management (%)	The proportion of females in total employment in senior and middle management.	Haver Analytics, World Bank	Annual level	2004-2019
Health				
Sex at birth ratio	Sex ratio at birth (male births per female births).	World Bank	Annual level	2007-2019
Intimate partner violence (%)	Proportion of ever-partnered women and girls subjected to physical and/or sexual violence by a current or former intimate partner in the previous 12 months, aged 15+.	UN Sustainable Development Goals	Annual level	2018
Adolescent fertility (birth per 1,000 women ages 15-49)	Adolescent fertility rate is the number of births per 1,000 women ages 15-19.	Haver Analytics, World Bank	Annual level	2004-2019
Maternal mortality ratio (per 100,000 live births)	Maternal mortality ratio is the number of women who die from pregnancy-related causes while pregnant or within 42 days of pregnancy termination per 100,000 live births.	Haver Analytics, World Bank	Annual level	2000-2017

Source: Haver Analytics, UN Sustainable Development Goals, World Bank, Goldman Sachs Global Investment Research

Appendix C — The Womenomics Index

Exhibit 60: EM ranking of variables - Womenomics Index, education, labour and agency

ISO Code	Country	Womenomics Index		Education		Labour		Agency	
		Rank	Latest Score	Latest Score	Latest Data Point	Latest Score	Latest Score	Latest Score	Latest Score
LTU	Lithuania	1	8.39	8.96	89.03	7.29	8.18	6.40	71.07
LVA	Latvia	2	8.38	9.37	92.91	7.64	7.84	7.44	79.44
SRB	Serbia	3	8.07	6.84	68.60	7.27	7.18	7.35	78.73
GEO	Georgia	4	7.89	9.24	91.69	6.90	7.11	6.70	73.46
POL	Poland	5	7.78	8.64	85.95	6.31	6.91	5.72	65.57
BLR	Belarus	6	7.72	9.47	93.87	7.69	7.69		80.38
ZAF	South Africa	7	7.65	5.36	54.32	7.66	7.51	7.81	82.42
HRV	Croatia	8	7.59	6.28	63.20	7.49	7.40	7.57	80.47
SVK	Slovakia	9	7.56	8.48	84.35	6.99	7.35	6.63	72.93
KAZ	Kazakhstan	10	7.47	9.78	96.90	8.00	8.00		83.04
HUN	Hungary	11	7.31	7.65	76.37	6.74	6.83	6.66	73.12
PER	Peru	12	7.29	5.26	53.38	7.88	7.97	7.80	82.32
CRI	Costa Rica	13	7.23	4.10	42.20	6.53	6.14	6.93	75.31
BOL	Bolivia	14	7.20	7.88	78.60	7.21	7.53	6.88	74.95
RUS	Russia	15	7.14	8.43	83.93	6.78	7.43	6.13	68.90
ROM	Romania	16	7.07	6.42	64.57	6.59	6.43	6.74	73.79
UKR	Ukraine	17	7.00	7.10	71.11	6.87	6.99	6.75	73.88
TTO	Trinidad & Tobago	18	6.97	6.78	68.06	6.75	6.58	6.92	75.28
AZE	Azerbaijan	19	6.88	8.53	84.88	8.88	8.88		90.47
MNG	Mongolia	20	6.84	4.96	50.50	7.16	7.40	6.93	75.30
CHL	Chile	21	6.80	5.78	58.37	6.61	6.54	6.69	73.36
DOM	Dominican Republic	22	6.78	5.00	50.89	6.59	6.22	6.96	75.55
ARE	United Arab Emirates	23	6.77	7.12	71.31	4.32	4.78	3.86	50.61
PRY	Paraguay	24	6.66	4.10	42.20	6.67	6.53	6.81	74.37
ECU	Ecuador	25	6.65	4.28	43.93	6.51	6.27	6.74	73.80
NAM	Namibia	26	6.60	1.41	16.30	8.69	8.59	8.79	90.31
PAN	Panama	27	6.57	5.61	56.74	6.46	6.31	6.62	72.83
COL	Colombia	28	6.56	5.35	54.24	6.54	6.48	6.60	72.66
MEX	Mexico	29	6.54	3.63	37.71	5.43	5.06	5.81	66.32
TJK	Tajikistan	30	6.53	7.63	76.21	5.19	5.06	5.33	62.44
VNM	Vietnam	31	6.48	2.78	29.53	8.74	8.65	8.84	90.68
SLV	El Salvador	32	6.47	2.95	31.18	5.95	5.28	6.63	72.90
JAM	Jamaica	33	6.42			7.91	7.91		82.30
ARG	Argentina	34	6.41	3.45	35.94	6.49	6.54	6.44	71.41
BRA	Brazil	35	6.40	4.86	49.51	6.95	6.95	6.94	75.41
VEN	Venezuela	36	6.38	6.49	65.18	5.41	4.82	5.99	67.77
URY	Uruguay	37	6.34	3.35	35.05	7.46	7.14	7.78	82.18
ARM	Armenia	38	6.17	9.06	89.97	5.80	6.00	5.60	64.61
PHL	Philippines	39	6.14	3.16	33.22	6.00	5.80	6.21	69.51
KEN	Kenya	40	5.95	1.58	18.00	9.30	9.30	9.29	94.31
MOZ	Mozambique	41	5.91	0.36	6.20	8.95	9.80	8.10	84.73
HND	Honduras	42	5.86	2.59	27.66	5.94	5.37	6.50	71.86
BLZ	Belize	43	5.84	4.47	45.83	5.84	5.50	6.18	69.26
ZMB	Zambia	44	5.70	0.63	8.87	7.31	8.74	5.88	66.85
GHA	Ghana	45	5.65	1.24	14.68	8.88	8.71	9.04	92.30
LKA	Sri Lanka	46	5.53	6.26	63.01	4.38	3.58	5.18	61.26
BHR	Bahrain	47	5.53	6.69	67.19	4.33	4.33		51.88
MAR	Morocco	48	5.50			2.03	1.85	2.21	37.35
ETH	Ethiopia	49	5.48	0.30	5.66	8.32	8.34	8.30	86.36
TUR	Turkey	50	5.41	3.45	35.96	4.31	3.81	4.81	58.29
MYS	Malaysia	51	5.40	6.25	62.96	6.20	6.03	6.36	70.74
SUR	Suriname	52	5.37	2.44	26.25	6.52	5.48	7.56	80.37
AGO	Angola	53	5.37	0.99	12.29	7.94	9.59	6.28	70.13
CHN	China	54	5.36	1.71	19.20	7.65	7.65		80.07
SAU	Saudi Arabia	55	5.26	5.83	58.83	1.67	1.54	1.80	34.13
GAB	Gabon	56	5.26			6.44	6.44		69.76
TUN	Tunisia	57	5.09			3.17	2.47	3.87	50.69
CMR	Cameroon	58	5.07	0.91	11.48	8.32	8.59	8.05	84.30
NGA	Nigeria	59	5.00	3.76	38.98	8.29	7.28	9.31	94.48
IDN	Indonesia	60	4.98	3.31	34.63	6.15	5.93	6.37	70.80
SEN	Senegal	61	4.79	0.23	5.01	5.43	5.43	5.42	63.21
GTM	Guatemala	62	4.79	2.04	22.43	4.82	3.76	5.89	66.98
OMN	Oman	63	4.70	7.16	71.67	3.29	3.29		43.02
LBN	Lebanon	64	4.57	3.09	32.51	2.45	1.99	2.90	42.97
CIV	Ivory Coast	65	4.49	0.96	11.98	6.37	6.61	6.14	68.94
QAT	Qatar	66	4.46	5.96	60.10	4.87	5.26	4.48	55.63
EGY	Egypt	67	4.44	6.72	67.46	1.63	1.28	1.98	35.51
KWT	Kuwait	68	4.16	3.79	39.28	4.91	4.91		56.81
JOR	Jordan	69	3.88	4.89	49.86	1.18	0.91	1.46	31.32
IND	India	70	3.71	1.73	19.43	1.25	1.45	1.05	28.03
IRQ	Iraq	71	3.67	2.20	23.95	0.85	0.05	1.64	32.83
PAK	Pakistan	72	2.76	0.77	10.14	0.87	1.34	0.40	22.82

Source: Haver Analytics, UN Sustainable Development Goals, World Bank, Goldman Sachs Global Investment Research

Exhibit 61: EM ranking of variables - women in power and health

ISO Code	Country	Women in power						Health									
		Aggregate Power	Women in parliament (% of number of seats in parliament)		Women in ministerial positions (% of number of ministerial positions)		Women in management (% of total management)		Aggregate Health	Adolescent Fertility (birth per 1,000 women ages 15-49)		Intimate Partner Violence (% of females aged 15+)		Maternal Mortality (per 100,000 live births)		Sex at birth ratio (male to female)	
			Latest Score	Latest Score	Data Point	Latest Score	Data Point	Latest Score		Data Point	Latest Score	Latest Data	Latest Score	Data Point	Latest Score	Latest Data	Latest Score
LTU	Lithuania	6.18	5.08	27.00	7.40	42.86	6.06	38.59	9.52	9.76	9.55	8.37	4.10	9.95	8	10	1.06
LVA	Latvia	5.52	5.65	30.00	3.99	23.08	6.94	43.54	9.39	9.44	15.43	8.25	4.40	9.85	19	10	1.06
SRB	Serbia	6.66	7.31	38.80	7.51	43.48	5.18	33.57	9.57	9.54	13.58	8.81	3.00	9.91	12	10	1.07
GEO	Georgia	5.09	3.90	20.70	6.28	36.36			9.20	7.88	43.96	9.13	2.20	9.80	25	10	1.06
POL	Poland	4.25	5.40	28.70	0.82	4.76	6.51	41.15	9.68	9.75	9.80	8.97	2.80	10.00	2	10	1.06
BLR	Belarus	4.07	7.53	40.00	0.62	3.57			9.38	9.58	13.00	7.94	5.20	10.00	2	10	1.06
ZAF	South Africa	7.42	8.81	46.80	8.34	48.28	5.12	33.26	7.79	6.58	67.79	5.63	11.00	8.96	119	10	1.03
HRV	Croatia	4.49	5.86	31.13	4.06	23.53	3.54	24.27	9.67	9.86	7.85	8.89	2.80	9.95	8	10	1.06
SVK	Slovakia	4.29	4.27	22.70	3.45	20.00	5.13	33.30	9.03	8.85	26.19	8.25	4.40	9.97	5		
KAZ	Kazakhstan	3.37	5.10	27.10	1.65	9.52			9.17	8.70	28.98	8.06	4.90	9.93	10	10	1.07
HUN	Hungary	3.86	2.28	12.10	3.70	21.43	5.59	35.90	9.30	8.94	24.57	8.33	4.20	9.91	12	10	1.06
PER	Peru	6.10	4.93	26.20	7.27	42.11			8.23	7.28	55.02	6.39	9.10	9.24	88	10	1.05
CRI	Costa Rica	8.78	8.59	45.60	8.98	52.00			8.74	7.47	51.58	7.70	5.80	9.78	27	10	1.05
BOL	Bolivia	5.58	8.70	46.20	3.84	22.22	4.21	28.08	7.34	6.85	62.91	3.85	15.50	8.64	155	10	1.05
RUS	Russia	3.77	2.98	15.80	1.67	9.68	6.66	41.99	9.71	9.27	18.54			9.87	17	10	1.06
ROM	Romania	3.42	4.12	21.90	0.86	5.00	5.29	34.19	8.89	8.38	34.86	7.34	6.70	9.85	19	10	1.06
UKR	Ukraine	3.14	3.92	20.80	2.36	13.64			8.91	9.07	22.29	6.71	8.30	9.85	19	10	1.06
TTO	Trinidad & Tobago	5.35	4.93	26.20	5.76	33.33			8.98	8.72	28.58	7.78	5.60	9.42	67	10	1.04
AZE	Azerbaijan	1.64	3.28	17.40	0.00	0.00			6.34	7.16	57.16	8.41	4.00	9.79	26	0	1.12
MNG	Mongolia	4.45	3.26	17.30	3.24	18.75	6.84	43.00	8.62	8.54	31.88	6.31	9.30	9.62	45	10	1.03
CHL	Chile	4.59	4.26	22.60	5.26	30.43	4.25	28.29	9.03	8.14	39.22	8.10	4.80	9.90	13	10	1.04
DOM	Dominican Republic	5.46	5.25	27.90	3.00	17.39	8.11	50.19	7.84	5.27	91.81	6.90	7.80	9.18	95	10	1.05
ARE	United Arab Emirates	5.39	9.42	50.00	4.71	27.27	2.03	15.75	10.00	10.00	5.23			9.99	3	10	1.05
PRY	Paraguay	4.17	3.07	16.30	5.28	30.56			8.35	6.47	69.86	8.06	4.90	8.87	129	10	1.05
ECU	Ecuador	6.22	7.34	39.00	5.53	32.00	5.80	37.10	8.22	6.01	78.26	7.38	6.60	9.49	59	10	1.05
NAM	Namibia	7.56	8.15	43.30	6.76	39.13	7.77	48.24	7.35	7.03	59.64	4.09	14.90	8.29	195	10	1.01
PAN	Panama	5.52	4.24	22.50	5.40	31.25	6.94	43.54	8.23	5.90	80.25	7.46	6.40	9.56	52	10	1.05
COL	Colombia	4.90	3.45	18.30	6.36	36.84			8.02	6.77	64.31	6.03	10.00	9.28	83	10	1.05
MEX	Mexico	7.29	9.08	48.20	7.27	42.11	5.52	35.52	8.32	7.09	58.54	6.47	8.90	9.73	33	10	1.05
TJK	Tajikistan	2.75	4.48	23.80	1.02	5.88			8.06	7.12	57.87	5.24	12.00	9.87	17	10	1.07
VNM	Vietnam	2.39	5.03	26.70	0.00	0.00	2.14	16.33	8.51	8.79	27.37	7.10	7.30	9.64	43		
SLV	El Salvador	6.90	6.27	33.30	7.56	43.75	6.86	43.13	8.57	6.58	67.77	8.10	4.80	9.61	46	10	1.05
JAM	Jamaica	4.13	5.39	28.60	2.88	16.67			8.65	7.56	49.88	7.74	5.70	9.31	80	10	1.05
ARG	Argentina	5.32	7.72	41.00	3.14	18.18	5.10	33.14	8.77	6.88	62.35	8.53	3.70	9.67	39	10	1.04
BRA	Brazil	3.54	2.75	14.60	1.82	10.53	6.07	38.61	8.64	7.19	56.66	7.90	5.30	9.49	60	10	1.05
VEN	Venezuela	4.77	4.18	22.20	5.36	31.03			7.22	5.66	84.62	7.10	7.30	8.91	125		
URY	Uruguay	3.97	3.99	21.20	2.47	14.29	5.46	35.18	8.91	7.13	57.75	8.65	3.40	9.87	17	10	1.05
ARM	Armenia	2.21	4.43	23.50	0.00	0.00			6.79	9.18	20.28	8.21	4.50	9.79	26	0	1.11
PHL	Philippines	3.98	5.27	28.00	2.25	13.04	4.43	29.31	8.57	7.26	55.36	8.06	4.90	8.95	121	10	1.06
KEN	Kenya	4.68	4.11	21.80	5.26	30.43			6.20	6.30	73.01	1.51	21.40	6.99	342	10	1.03
MOZ	Mozambique	6.33	7.98	42.40	7.85	45.45	3.16	22.15	5.91	2.42	143.88	3.77	15.70	7.46	289	10	1.02
HND	Honduras	5.48	3.97	21.10	4.84	28.00	7.63	47.47	8.29	6.97	70.78	7.30	6.80	9.44	65	10	1.05
BLZ	Belize	3.45	1.83	9.70	1.92	11.11	6.61	41.71	8.42	6.59	67.61	7.38	6.60	9.70	36	10	1.03
ZMB	Zambia	5.03	3.16	16.80	5.57	32.26	6.36	40.26	5.51	3.92	116.50	0.00	25.20	8.13	213	10	1.03
GHA	Ghana	3.58	2.47	13.10	4.32	25.00	3.94	26.56	7.56	6.74	64.96	6.23	9.50	7.29	308	10	1.05
LKA	Sri Lanka	1.63	1.02	5.40	0.64	3.70	3.23	22.52	9.39	9.17	20.45	8.69	3.30	9.70	36	10	1.04
BHR	Bahrain	1.80	2.82	15.00	0.79	4.65			9.82	9.57	13.11			9.89	14	10	1.04
MAR	Morocco	3.29	3.86	20.50	2.73	15.79			8.66	8.63	30.33	6.63	8.50	9.40	70	10	1.06
ETH	Ethiopia	5.73	7.31	38.80	6.91	40.00	2.97	21.08	6.06	6.82	63.42	0.95	22.80	6.46	401	10	1.04
TUR	Turkey	2.54	3.26	17.30	2.03	11.76	2.34	17.46	8.76	8.94	24.55	6.23	9.50	9.87	17	10	1.05
MYS	Malaysia	2.80	2.81	14.90	2.79	16.13			9.77	9.55	13.52			9.76	29	10	1.06
SUR	Suriname	6.00	5.54	29.40	5.76	33.33	6.69	42.17	5.91	7.03	59.62	7.66	5.90	8.95	120	0	1.07
AGO	Angola	4.54	5.65	30.00	5.50	31.82	2.46	18.19	5.36	2.34	145.39	1.23	22.10	7.88	241	10	1.03
CHN	China	2.62	4.69	24.90	0.56	3.23			6.82	9.87	7.65	7.66	5.90	9.76	29	0	1.12
SAU	Saudi Arabia	1.88	3.77	20.00	0.00	0.00			9.93	9.91	6.87			9.87	17	10	1.03
GAB	Gabon	3.39	2.79	14.80	3.99	23.08			6.20	5.32	90.90	1.71	20.90	7.78	252	10	1.03
TUN	Tunisia	4.13	4.69	24.90	5.04	29.17	2.65	19.26	9.05	9.86	7.86	6.71	8.30	9.64	43	10	1.05
CMR	Cameroon	4.48	6.38	33.90	2.57	14.89			5.64	4.76	101.19	2.46	19.00	5.33	529	10	1.03
NGA	Nigeria	2.50	1.36	7.20	1.79	10.34	4.36	28.91	5.47	4.63	103.56	5.36	11.70	1.89	917	10	1.06
IDN	Indonesia	3.16	3.82	20.30	2.96	17.14	2.68	19.43	8.30	7.75	46.44	7.02	7.50	8.45	177	10	1.05
SEN	Senegal	5.94	8.10	43.00	3.78	21.88			7.37	6.53	68.71	5.71	10.80	7.23	315	10	1.04
GTM	Guatemala	3.77	3.65	19.40	2.30	13.33	5.34	34.50	8.30	6.54	68.58	7.50	6.30	9.18	95	10	1.05
OMN	Oman	1.25	0.43	2.30	2.07	12.00			9.82	9.61	12.34			9.85	19	10	1.05
LBN	Lebanon	3.56	0.89	4.70	5.45	31.58	4.35	28.87	9.76	9.52	13.95			9.76	29	10	1.05
CIV	Ivory Coast	2.51	2.15	11.40	2.21	12.77	3.16	22.16	5.61	4.02	114.69	3.89	15.40	4.55	617	10	1.03
QAT	Qatar	1.56	1.88	10.00	1.23	7.14			9.91	9.78	9.26			9.94	9	10	1.05
EGY	Egypt	3.40	5.16	27.40	4.19	24.24	0.84	9.01	7.46	7.42	52.35	5.28	11.90	9.69	37		
KWT	Kuwait	1.17	1.19	6.30	1.15	6.67			9.93	9.87	7.58			9.91	12	10	1.05
JOR	Jordan	1.89	2.17	11.50	1.62	9.38			8.42	8.88	25.81	5.20	12.10	9.61	46	10	1.05
IND	India	2.05	2.71	14.40	1.57	9.09	1.87	14.83	5.53	9.69	10.96	3.69	15.90	8.73	145	0	1.10
IRQ	Iraq	2.74	4.97	26.40	1.57	9.09	1.66	13.65	8.56	6.36	71.75			9.32	79	10	1.07
PAK	Pakistan	1.88	3.80	20.20	1.85	10.71	0.00	4.22	5.30	8.23	37.62	4.21	14.60	8.78	140	0	1.09

Source: Haver Analytics, UN Sustainable Development Goals, World Bank, Goldman Sachs Global Investment Research

Exhibit 62: DM ranking of variables - Womenomics Index, education, labour and agency (used for benchmarking purposes)

ISO Code	Country	Womenomics Index		Education		Labour					Agency
		Rank	Latest Score	Female upper secondary education (% of female population over the age of 25)		Aggregate Labour	Female to male labour force participation (female to male population ages 15+, %)		Female to male labour force participation controlling for education (working age female to male population with the same level of educational attainment, %)		Aggregate Agency
				Latest Score	Latest Data Point		Latest Score	Latest Score	Latest Data Point	Latest Score	
SWE	Sweden	1	8.89	7.73	77.17	8.77	8.87	90.38	8.67	89.29	10
CAN	Canada	2	8.72	8.53	84.89	8.10	8.49	87.15	7.72	81.66	10
NZL	New Zealand	3	8.72	7.46	74.57	8.63	8.47	86.99	8.79	90.27	10
FIN	Finland	4	8.62	7.87	78.47	8.10	8.64	88.47	7.56	80.37	10
AUT	Austria	5	8.51	7.55	75.39	7.92	7.97	82.76	7.87	82.92	10
BEL	Belgium	6	8.36	7.04	70.56	7.68	7.99	82.90	7.37	78.90	10
FRA	France	7	8.35	6.98	69.98	8.02	8.22	84.87	7.83	82.54	10
NOR	Norway	8	8.35	7.90	78.78	8.68	8.79	89.75	8.58	88.55	9
DEU	Germany	9	8.31	8.04	80.11	7.88	7.99	82.96	7.77	82.08	10
GBR	United Kingdom	10	8.22	8.03	80.07	8.23	8.28	85.38	8.18	85.34	10
AUS	Australia	11	8.18	7.94	79.14	8.06	8.29	85.47	7.82	82.50	10
NLD	Netherlands	12	8.17	6.97	69.80	8.16	8.20	84.76	8.11	84.80	10
USA	United States of America	13	8.10	9.20	91.30	7.38	7.97	82.75	6.79	74.18	8
ESP	Spain	14	8.06	5.26	53.38	7.98	7.89	82.12	8.06	84.42	10
PRT	Portugal	15	7.85	4.33	44.39	8.44	8.22	84.88	8.67	89.31	10
ITA	Italy	16	7.18	5.09	51.77	6.58	6.40	69.40	6.77	74.06	9
SGP	Singapore	17	6.68	7.20	72.07	8.77	7.53	79.06	10.00	102.92	6
JPN	Japan	18	6.48	7.93	79.08	6.97	6.99	74.68	6.92	75.22	6

Source: Haver Analytics, UN Sustainable Development Goals, World Bank, Goldman Sachs Global Investment Research

Exhibit 63: DM ranking of variables - Women in power and health (used for benchmarking purposes)

ISO Code	Country	Women in power						Health									
		Aggregate Power	Women in parliament (% of number of seats in parliament)		Women in ministerial positions (% of number of ministerial positions)		Women in management (% of total management)		Aggregate Health	Adolescent Fertility (births per 1,000 women ages 15-49)		Intimate Partner Violence (% of females aged 15+)		Maternal Mortality (per 100,000 live births)		Sex at birth ratio (male to female)	
			Latest Score	Latest Score	Latest Data Point	Latest Score	Latest Data Point	Latest Score		Latest Data Point	Latest Score	Latest Score	Latest Data Point	Latest Score	Latest Data Point	Latest Score	Latest Data Point
SWE	Sweden	8.45	8.85	47.00	9.87	57.14	6.64	41.85	9.52	10.00	5.17	8.10	4.80	9.98	4	10	1.06
CAN	Canada	7.17	5.46	29.00	8.88	51.43			9.78	9.87	7.68	9.33	1.70	9.93	10	10	1.05
NZL	New Zealand	8.00	9.10	48.30	6.91	40.00			9.49	9.31	17.94	8.73	3.20	9.94	9	10	1.06
FIN	Finland	7.68	8.66	46.00	8.64	50.00	5.74	36.76	9.44	9.99	5.50	7.78	5.60	9.99	3	10	1.05
AUT	Austria	7.39	7.40	39.30	9.87	57.14	4.90	32.01	9.69	9.92	6.75	8.89	2.80	9.97	5	10	1.06
BEL	Belgium	7.51	7.78	41.30	9.87	57.14	4.88	31.88	9.55	10.00	4.49	8.69	3.30	9.97	5		
FRA	France	7.12	7.44	39.50	8.64	50.00	5.30	34.24	9.64	10.00	4.75	8.61	3.50	9.95	8	10	1.05
NOR	Norway	6.52	7.80	41.40	6.72	38.89	5.03	32.75	9.66	10.00	5.07	8.65	3.40	10.00	2	10	1.06
DEU	Germany	5.69	5.88	31.20	6.91	40.00	4.30	28.59	9.94	9.87	7.62			9.96	7	10	1.05
GBR	United Kingdom	5.30	6.37	33.80	4.11	23.81	5.41	34.91	9.54	9.63	11.91	8.57	3.60	9.96	7	10	1.05
AUS	Australia	5.17	5.74	30.50	4.61	26.67			9.71	9.69	10.94	9.21	2.00	9.96	6	10	1.06
NLD	Netherlands	6.08	6.27	33.30	8.13	47.06	3.84	26.01	9.65	10.00	3.62	8.61	3.50	9.97	5	10	1.05
USA	United States of America	6.54	5.18	27.50	7.97	46.15	6.46	40.85	9.38	9.34	17.25	8.33	4.20	9.85	19	10	1.05
ESP	Spain	7.38	8.29	44.00	8.64	50.00	5.20	33.72	9.71	9.89	7.26	8.97	2.60	9.98	4	10	1.06
PRT	Portugal	6.86	7.53	40.00	7.27	42.11	5.78	36.97	9.60	9.87	7.62	8.57	3.60	9.95	8	10	1.06
ITA	Italy	5.45	6.72	35.70	6.28	36.36	3.36	23.27	9.78	10.00	4.98	9.13	2.20	10.00	2	10	1.06
SGP	Singapore	4.14	5.96	29.50	2.73	15.79			7.29	10.00	3.50	9.21	2.00	9.95	8	0	1.07
JPN	Japan	1.80	1.86	9.90	1.73	10.00			9.70	10.00	3.55	8.81	3.00	9.97	5	10	1.06

Source: Haver Analytics, UN Sustainable Development Goals, World Bank, Goldman Sachs Global Investment Research

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