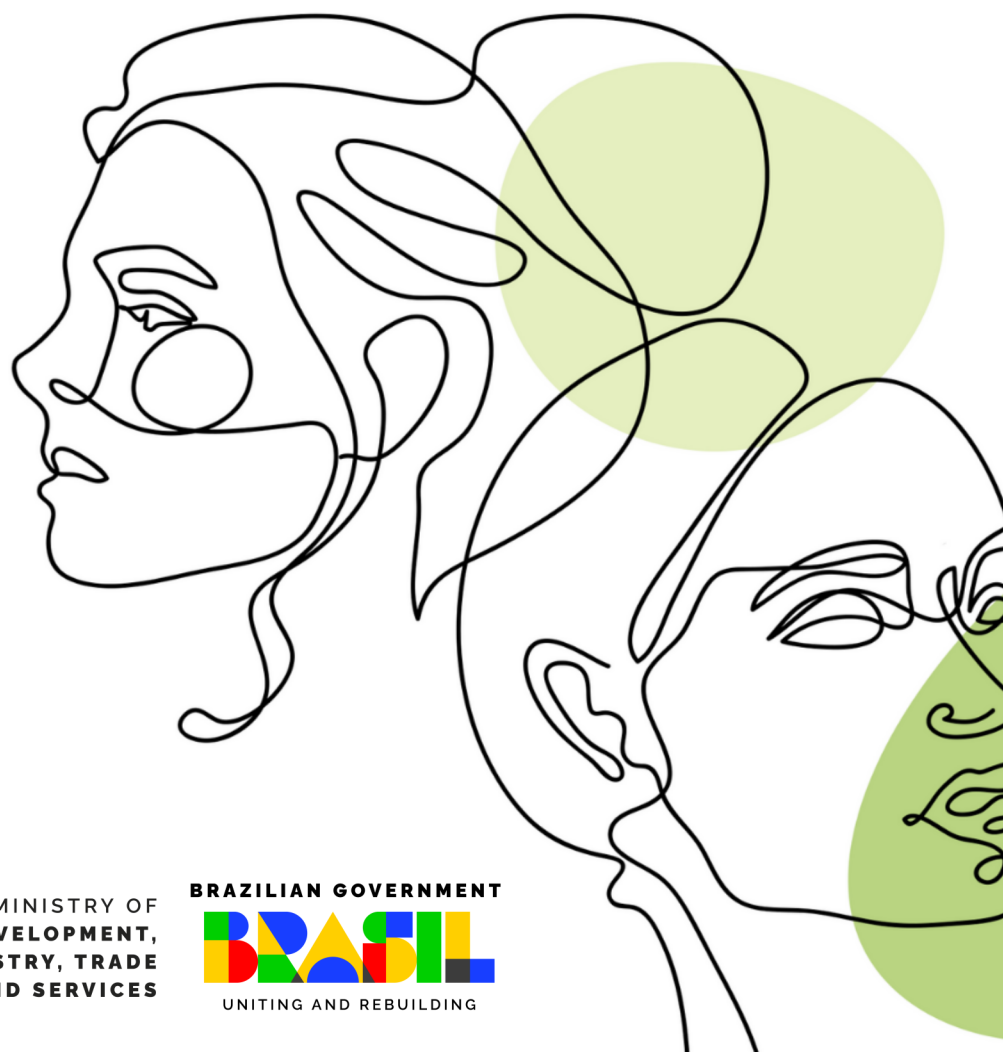


Women in **FOREIGN TRADE**

AN ANALYSIS FOR BRAZIL



MINISTRY OF
DEVELOPMENT,
INDUSTRY, TRADE
AND SERVICES

BRAZILIAN GOVERNMENT



UNITING AND REBUILDING

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Women in Foreign Trade

An Analysis for Brazil

April, 2023



Ministry of Development, Industry, Trade and Services
Secretariat of Foreign Trade

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Executive Summary

International trade is a fundamental driver of economic growth around the world. Countries that are integrated into global trade have greater productivity, innovation, better job opportunities, lower prices and a higher standard of living. Thus, the participation of women in foreign trade can bring significant benefits to the economy, as well as reducing gender inequality. Companies active in foreign trade offer, on average, more stable jobs and higher salaries. Women who undertake and work in export-oriented sectors have the opportunity to expand their business beyond national borders, increasing their customer base and generating more revenue. In addition, foreign trade can offer women access to new markets, technologies and training opportunities.

This report makes use of a dataset that, for the first time, allows researchers and policymakers to view Brazil's labor and corporate data related to international trade by gender. To this end, an exploratory analysis was carried out in which Brazil's export and import data is cross-referenced with information on the labor market and corporate structure of companies in order to incorporate this aspect into the discussion of Brazil's foreign trade policies. This data provides new information on how women are employed, in which industries they work, what their income is, where they work as entrepreneurs and whether or not they are involved in global trade.

The analysis shows that foreign trade is a path to better wages for women workers and business growth for women entrepreneurs. The challenge of increasing women's participation in economic activity, and especially in international trade, remains relevant, since there is a lower proportion of women in both employment and business ownership. Seizing the opportunity to increase female participation in trade will mean expanding the country's workforce, productivity and income.

Key Facts and Results

- Companies active in Brazilian foreign trade present themselves as an opportunity for women to earn better salaries. In all the economic activities analyzed, companies operating in foreign trade pay higher salaries on average compared to companies that do not operate in export and import activities.
- Of the jobs in foreign trade firms, 2.6 million were held by women. This percentage represents 32.5% of all jobs in these companies and grew between 2010 and 2020. However, it is still below the 40% of female participation in companies that are not active in foreign trade, highlighting the opportunity for greater inclusion of women in exports and imports.
- Which products are exported and where they are exported to can influence the increase in the participation of women in the jobs of companies operating in foreign trade. Companies that have fewer commodities on their export list have a higher participation of women in their workforce. In other words, there is a positive relationship between an increase in the degree of differentiation of the products exported and female participation in employment.
- The share of women in total employment tends to be higher in small companies (up to 9 employees), both for exporting and importing firms and for firms not involved in foreign trade.
- The corporate structure of most companies is made up mostly of men. In foreign trade, in particular, there is plenty of room to increase the participation of women: 14% of exporting companies are mostly owned by women.
- Companies whose partners are mostly women export products with international tariffs that are higher, on average, than those observed for companies with a majority male ownership: an average rate of 6.4% for companies owned by women and 5.1% for companies owned by men. The opportunities for gain through international integration are therefore even greater for women.
- The participation of women as partners in companies both active and not active in foreign trade tends to decrease with the size of the company. Therefore, measures to reduce the fixed costs of entering the international market could help increase the participation of exporting companies run by women, since these costs have a greater proportional impact on smaller companies.
- The Southeast and South stand out for their greater female presence in exporting companies, compared to the other Brazilian regions. In the other regions, female participation is more relevant in companies that concentrate their sales only on the domestic market, compared to the South and Southeast.

1

Introduction



International trade is a fundamental engine of economic growth around the world. Empirical evidence shows that countries that integrate into the global trade have higher productivity, innovation, better employment opportunities, lower prices, and a higher standard of living. However, these benefits are not distributed evenly across the population. The debate on the labor market impacts of international trade usually differentiates workers by regions, education, or skills. Gender is another dimension in which the impacts of trade integration may differ. Therefore, it is essential to understand how trade policy can contribute to reducing gender inequality in labor market outcomes and well-being.

In recent years, countries have started to adopt trade measures that consider gender issues. According to the World Trade Organization (WTO), there were, in 2022, 311 provisions on gender equality in Regional Trade Agreements. Thus, it is also important for Brazil to be aware of its domestic gender data to actively participate in the global debate on the topic.

Although the country does not impose gender-based tariff and non-tariff measures, there are significant differences in how trade policies affect women and men. Firstly, the benefits of trade can be particularly important for women who start to undertake and work in export-oriented sectors, as exporting companies tend to offer more stable jobs, higher salaries, and better working conditions than the informal domestic sector, where they often find themselves (WTO, 2017).

Consequently, countries more open to trade, as measured by the proportion of trade to gross domestic product, display higher levels gender equality (World Bank and WTO, 2020). However, the impact on women depends on the sector they are employed in and how these are affected by trade. For instance, women occupy a disproportionate number of jobs in the apparel sector, and tariffs on clothing around the world remain high compared to tariffs on

other manufactured products (World Bank and WTO, 2020). This disparity distances female workers from broader and better export opportunities and jobs.

Secondly, the competition from imports and the opportunities for entering export markets have the potential to stimulate companies' investment in new technologies and reduce gender discrimination. The introduction of machinery and computerized technologies in production processes can make women more productive, creating new job opportunities for them. Lastly, integration policies also induce a shift in the sectoral structure of production, which can have positive or negative effects on gender inequality. Women are particularly vulnerable to shocks that directly expose sectors with a high female participation to foreign competition. The available evidence suggests that the actual effects on gender inequality will depend on the intensity of female participation in sectors where a country has a comparative advantage (Pieters, 2018).

It should also be noted that women have a lower participation in global trade as producers and entrepreneurs. The share of exporters and importers predominantly owned by women is much smaller than that of men. Only 14% of exporting companies and 13% of importing companies in Brazil have a female predominance in their corporate boards. This is because, on a global level, women tend to face greater barriers to trade compared to men. One of the reasons is related to the high level of capital and guarantees usually required by trade-related activities. Limited access to financing, particularly short-term credit, is a problem that disproportionately affects women (World Bank and WTO, 2020).

By being more present in society and in the management of small and medium-sized enterprises, women are disproportionately affected by norms and regulations that increase the fixed costs related to trade (ITC, 2015). Furthermore, non-tariff measures

impact compliance costs associated with procedures, regulations, and standards, which can be particularly burdensome for small companies with little trade experience. Access to international markets may also require knowledge of a different language, different regulations, and different market conditions.

Given the complexity of the relationship between trade and gender, disaggregated data are necessary to assess how different policies and barriers specifically affect women and men. A diagnosis with improved data on trade and gender will help policymakers develop and implement targeted policies, from trade agreements to assistance and training programs, and to identify areas where specific measures are needed to expand economic opportunities for women. In this way, it will be possible to prioritize the assessment of the impact of trade integration on women's participation, taking into account sectors potentially in expansion or contraction, and to shape trade adjustment assistance considering such impact.

It is expected that the greater availability of information generated by this study can encourage a more detailed analysis of the lesser female presence in the leadership of international trade, leading to the prioritization of trade facilitation efforts to reduce costs that disproportionately affect businesses with higher female participation. Capitalizing on the opportunity for growth in women's participation in trade will mean an expansion of the workforce, productivity, and the country's income.

Global evidence

From a global perspective on the workforce, international studies on the impact of international trade on gender inequality tend to yield mixed results, reflecting the diversity of local characteristics. That is, the economic and institutional structure of a country can influence the potential

employment benefits for women from trade integration. According to various authors, formal employment and women's wages increase with international trade, especially in cases where the country's comparative advantage lies in sectors intensive in female labor (Aguayo-Tellez et al., 2014; Ederington et al., 2009; De Hoyos et al., 2009). Ozler (2000) documents a positive association between export orientation and female employment at the company level. Greaney and Tanaka (2021) find evidence that exporting companies are associated with a smaller gender wage gap.

Bøler et al. (2018) find that the wage gap increases with the share of exported production, the number of buyer markets, and the number of export varieties. The observed evidence indicated that exporters often require greater flexibility from their employees, such as working at specific times to communicate with partners in different time zones. If women have less flexibility, or are perceived in this way, exporters will show a greater wage differential than non-exporters.

In Brazil, according to Gaddis and Pieters (2017), tariff reductions in the early nineties reduced gender disparities in workforce participation. Regions with productive sectors more exposed to tariff reductions experienced slower growth (or greater decline) in employment, especially in relation to male workers. Similarly, various studies, like Connolly (2022) and Paz and Ssozi (2020), show that the increase in imports and exports from Brazil to China in the 2000s led to reductions in the gender wage and employment gap. Wage increases induced by exports were greater for women than for men in the formal sector. Regions more exposed to imports from China experienced slower wage growth, particularly for men, in sectors with low female participation. In these regions, a significant increase in formal employment was also observed, where gains for women were almost double those for men. The authors hypothesize that trade with China created additional employment

opportunities, leading new workers to enter the labor market but starting with relatively lower salaries. For Benguria and Ederington (2021), reductions in the gender wage gap were due to an increase in women's participation in high-wage occupations. Overall, trade with China had stronger wage impacts on trade-linked workers, and wage effects are typically larger for the gender more represented in each sector.

Another mechanism identified in reducing gender inequality caused by trade integration is the relationship between exports and technological updates. The increase in competition and new export opportunities in Mexican manufacturing after NAFTA came into effect increased relative employment of women and wages in industrial jobs, as technological updating by exporting companies reduced the role of heavy manual labor traditionally done by men (Juhn et al., 2014). Moreover, women have an opportunity to enter higher qualification jobs through foreign trade. Trade integration is linked to greater education accumulation and greater gender equality (Schultz, 2014).

Global data collected by the World Bank and WTO (2020) indicate that international trade has a positive effect on gender equality, helping women enter the formal economy and secure jobs with better benefits. According to the study, when developing countries double their manufactured exports, the participation of women in the total wages in the manufacturing of these countries increases by an average of 5.8 percentage points due to the increase in employment and wages. In developed and emerging economies, for women, the likelihood of being informal goes from 20% in sectors with a low level of export to 13% in sectors with a high level of export, giving them greater opportunities for benefits, training, and job security.

From the perspective of barriers to women's participation in trade as entrepreneurs, international research shows that companies led by women are less likely

to obtain credit and are charged higher interest rates for loans once approved (Muravyev et al., 2009). They are also more likely to need a guarantor, even when all other observable criteria, except sex, are identical (Brock and De Haas, 2019). Additionally, companies led by women generally raise less venture capital than those led by men (World Bank, 2021). Depending on the sectors they operate in, they may also face higher export costs. Manufacturing companies owned by women tend to specialize in sectors relatively more protected from foreign competition. Among predominantly female-owned companies, 55% of manufacturing companies are concentrated in textiles and clothing and food and beverages products. In services, predominantly female companies are concentrated in retail and construction, sectors with higher trade barriers (WTO, 2019).

2

Foreign Trade and Gender in the Labor Market



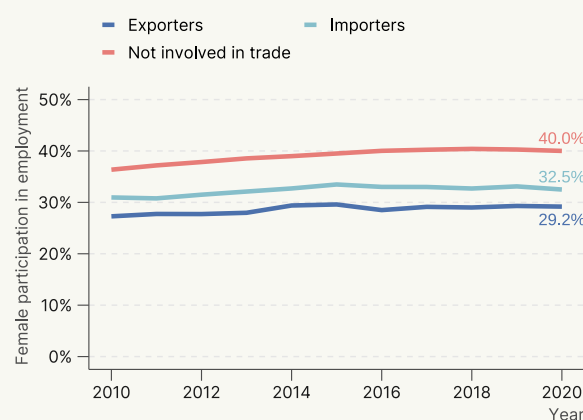
Access to microdata from the Annual Social Information Report (RAIS) allows for a view, by company and by groups of companies, of gender, race, age, and education indicators. By cross-referencing them with SECEX [Secretariat of Foreign Trade] data, we can therefore seek to identify patterns that relate these indicators to foreign trade activities.^{1,2} This section highlights some key points from the intersection between foreign trade and gender in Brazilian companies, paving the way for new questions and paths of analysis.

Women have a low participation in employment in firms active in foreign trade

Initially, Figure 1 shows that, from 2010 to 2020, female participation in employment in companies not involved in Brazilian foreign trade was consistently higher than participation in those that exported and/or imported. For example, in 2020, women's participation in the total employment of companies not involved in foreign trade was 40.0%. In contrast, in that same year, female participation in the total jobs was, respectively, 29.2% and 32.5% for the sets of companies that registered exports and imports. It is highlighted that the pattern observed in Brazil is opposed to the pattern found for the global average in the World Bank and WTO (2020). In this average, a higher participation of women in jobs in firms participating in international trade was evidenced. However, it is worth noting that other countries also presented the pattern indicated for Brazil, such as Chile and Portugal.

Although women's participation in employment has increased during this

Figure 1
Female participation in employment has increased in recent years, but remains lower than that of men



Source: own elaboration based on RAIS/MTE and SECEX data.

Note: the figure shows the percentage of jobs occupied by women by company group in Brazilian foreign trade. For example, in 2020, 32.5% of the jobs reported in the RAIS were occupied by women in relation to the total number of jobs of companies that registered some export operation that year.

period, a lower participation observed in companies linked to foreign trade may indicate additional difficulties imposed on this group due to specificities present in foreign trade activities, such as sectoral composition and greater flexibility in terms of working hours for some professional activities. Figures 2 and 3 show in which activities the jobs of companies operating in Brazilian foreign trade are distributed, including a breakdown by gender.

In Figure 2, it is observed that the manufacturing industry encompasses the largest number of jobs in relation to the set of companies that exported and/or imported in 2019. However, the largest number of women's jobs linked to foreign trade is in the activity that includes civil construction, commerce, and services, referred to as "Others".³ In total, exporting and/or importing companies from all activities reported 7.9 million links in RAIS, with 2.6 million jobs occupied by women (32.5%) and 5.3 million by men (67.5%). The activities with the lowest participation of women, both in absolute number of jobs and in percentage relative to men, are the agricultural and

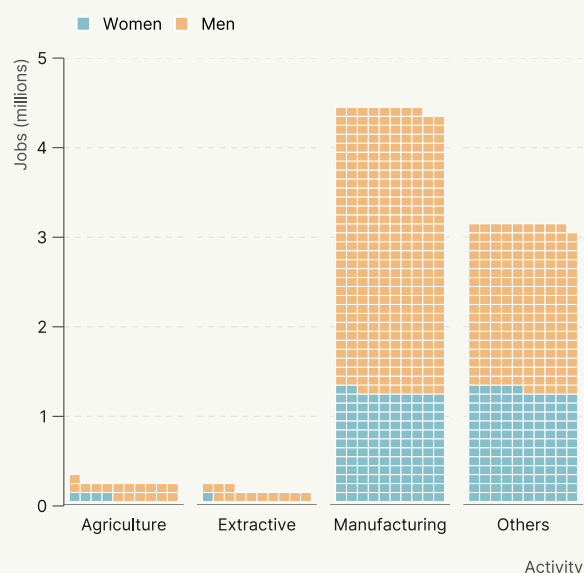
¹Considering that the last year that SECEX has access to identified RAIS data is 2020, it was decided to work with 2019 data in analyses involving only one year. This prevents the analysis from being affected by the effects of COVID-19 on the Brazilian economy in 2020.

²For more details on the data, see Annex A.

³Note that the activity classification is assigned at the firm level. It is therefore possible for a service company to also export and/or import goods.

Figure 2

The majority of jobs in companies operating in Brazilian foreign trade correspond to the manufacturing industry and other activities (construction, trade, and services)



Source: own elaboration based on RAIS/MTE and SECEX data.

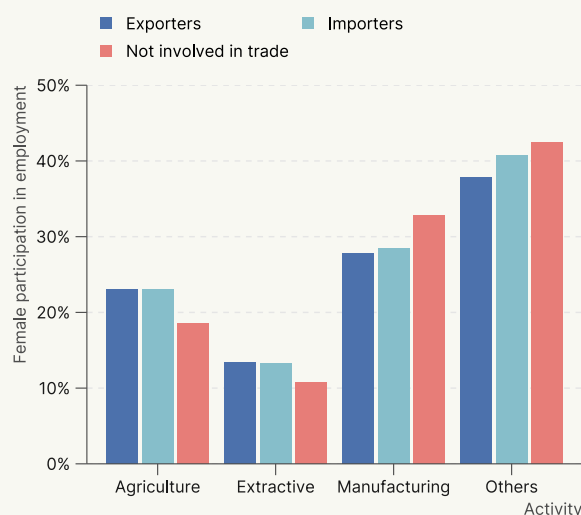
Note: the figure shows the total formal jobs by activity and gender for companies that registered some export or import in 2019. Each rectangle represents 10 thousand jobs.

extractive activities.

Complementarily, Figure 3 presents the participation of women in the total employment of each activity and group of companies (exporters, importers, and non-participants in foreign trade). It is observed that there is no uniform pattern among activities. In agriculture and extractive industry, women have a higher employment participation in the group of companies that export/import compared to the set of companies not involved in foreign trade. However, these activities show relatively low rates of women's participation in the total jobs for all three groups of companies analyzed. In the activities with the largest number of jobs, manufacturing and others, the percentage of women is lower in the total employment of firms active in foreign trade (export/import) compared with firms operating only in the domestic market. But it is worth noting that, even so, the rates of female participation are higher than those observed in agriculture and the extractive

Figure 3

The participation of women in employment is greater in the manufacturing industry and other activities (construction, trade, and services), compared to agricultural and extractive activities



Source: own elaboration based on RAIS/MTE and SECEX data.

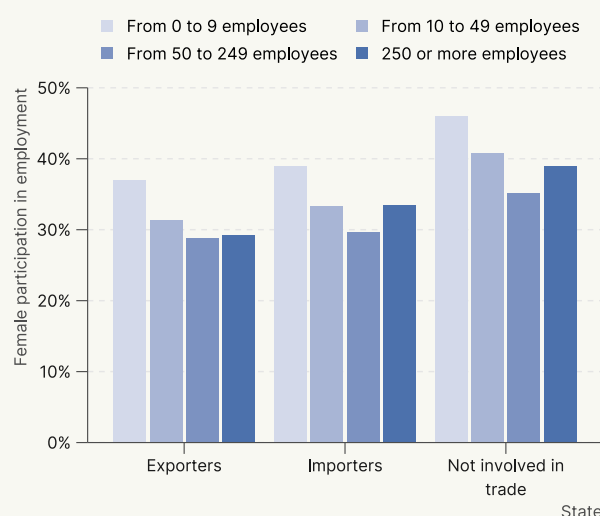
Note: the figure shows the percentage of formal jobs of women in relation to the total for each activity and company group in 2019.

industry.

Complementarily, Figure 3 presents women's participation in the total jobs of each activity and group of companies (exporters, importers, and non-participants in foreign trade). It can be seen that there is no unique pattern among activities. In agriculture and extractive industries, women have a higher employment participation in the group of companies that export/import compared to the set of companies that do not participate in foreign trade. However, these activities have relatively low rates of women's participation in total employment for all three groups of analyzed companies. In activities with the highest number of jobs (manufacturing and others), the percentage of women is lower in the total employment of firms engaged in foreign trade compared to firms that operate solely in the domestic market. Nevertheless, the rates of female participation are higher than those observed in agriculture and extractive industry.

It is important to highlight that, from a

Figure 4
The participation of women in employment is greater in smaller companies



Source: own elaboration based on RAIS/MTE and SECEX data.

Note: the figure shows the percentage of formal jobs of women in relation to the total by size (number of employees grouping) and company group in 2019.

global perspective, the World Bank and WTO (2020) present a pattern in which female participation increases according to the country's specialization in the trade of more sophisticated products. That is, regions more specialized in the trade of commodities show, on average, a lower participation of women in the workforce. In this sense, the evidence found for Brazil also indicates that activities that have greater differentiation in their products have a higher female participation in the workforce.

When analyzing the size of companies by the number of employees, it is found that women's participation in total employment is higher in firms that have from 0 to 9 employees. This pattern is observed regardless of whether the company participates in foreign trade activities or not. However, following the pattern observed earlier and controlling for the number of employees, it is found that exporting and/or importing companies tend to have a lower female participation compared to companies not engaged in foreign trade.

The product portfolio and trade partners can influence female

participation in employment

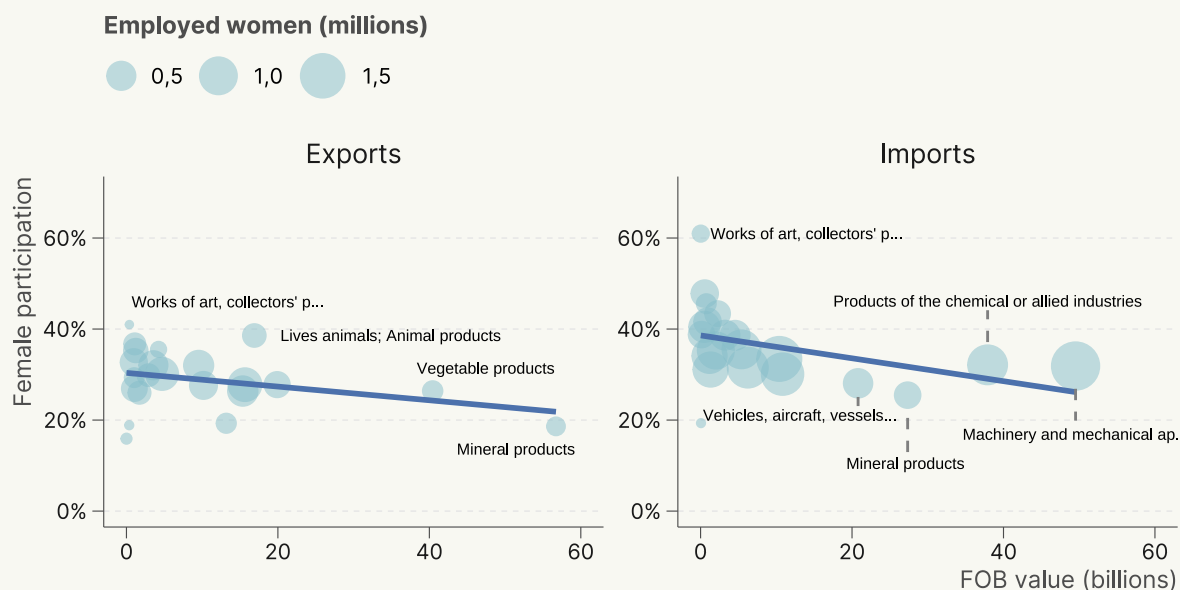
A relevant dimension for identifying differences in women's participation in employment is the sectoral dimension. Considering that some sectors are exposed to greater female participation in the workforce, it is possible that trade policies may have distinct effects for men and women, as already highlighted in Gaddis and Pieters (2017) and Connolly (2022).

Figure 5 shows the correlation between the trade value by section of the Harmonized System and the participation of women in the total employment of companies exporting and importing these products. A negative association is observed between the exported and imported value by the Harmonized System section and the proportion of women in the total employment of companies that trade the products of these sections. In other words, sectors with lower female participation have, on average, greater activity in foreign trade, which explains part of the result of Figure 1. For example, exports of products classified in the chapters of the "Mineral Products" section totaled \$56.7 billion in 2019, and only 18.6% of the links declared by exporting companies of these products were occupied by women.

From the perspective of imports, the sections with the highest import values are "Machinery and electrical equipment and parts; Sound recording or reproducing apparatus, television image and sound recording or reproducing apparatus, and their parts and accessories" and "Products of the chemical industries or related industries." In 2019, imports from these sections totaled, respectively, \$49.5 billion and \$37.9 billion. The participation of women in the total links of importing companies of products from these sections was, respectively, 31.9% and 32.1% in 2019. Corroborating what had already been presented in Figure 1, the presence of women in employment is relatively higher in imports.

Figure 5

There is a negative correlation between the exported and imported value and the proportion of women in total employment

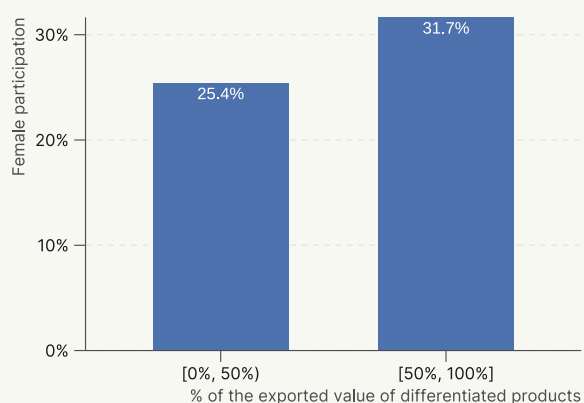


Source: own elaboration based on RAIS/MTE and SECEX data.

Note: the figure shows the relationship between the exported and imported value by section of the Harmonized System and the proportion of women in the total employment of companies that export and/or import products classified in those sections in 2019. Each point represents a section.

Figure 6

The participation of women in employment tends to grow with the differentiation of exported products



Source: own elaboration based on RAIS/MTE and SECEX data.

Note: each exporting company was assigned to one of the groups, according to the percentage of its exports of products classified as differentiated according to the Rauch classification (1999). The figure shows the percentage of women's jobs in the total jobs of companies in each group in 2019.

In line with the global evidence presented by the World Bank and WTO (2020), Figure 6 shows that women's participation in employment is higher in companies that have a higher percentage of products classified as differentiated in their export agenda, in terms of value.⁴ It is observed that female participation in total employment rises by 6 percentage points in the comparison between the set of companies that have the majority of their exports of products that are not considered differentiated and the set of companies that mainly export products classified as differentiated. The World Bank and WTO (2020) find that, for a set of countries, female participation grows according to specialization in more sophisticated products. The average female participation in the total workforce for

⁴The products were classified as differentiated based on Rauch (1999). In this classification, differentiated products are those that are not traded on commodity exchanges or do not have a reference price. For example, soybeans are traded on a commodity exchange and various chemical products have a reference price. Following this classification, clothing and footwear are examples of products treated as differentiated.

countries specialized in commodities is 39%, while this average rises to 46% in countries specialized in innovative activities. In the Brazilian case, for example, there is a female participation of 18.6% in the total employment of companies exporting mineral products, which are commodities. On the other hand, it is observed that in companies exporting textiles and clothing, products considered differentiated, this participation is 32.0%.

Another relevant aspect is the influence of the export destination. The income level at the export destination also shows a positive association with female participation in the employment of exporting firms. Figure 7 presents, based on a bin scatter plot, the relationship between the participation of women in the employment of exporting firms and the average income of the export destinations of these companies.⁵

As a general rule, it is observed that companies with the majority of their exports destined for higher-income countries have a greater participation of women in the total declared links. This fact indicates that increasing exports to higher-income countries can contribute to increasing the participation of women in the total employment of Brazilian exporting companies.

International trade has an influence not only on employment, but also on wages

Beyond female participation in employment, it is important to investigate gender pay differentials and how this differential is present in firms engaged in foreign trade. Initially, it must be highlighted that companies engaged in international trade pay higher salaries, for both men and women (Figure 8). The wage premium is verified across all activities, with emphasis

Figure 7

There is a positive relationship between the average per capita income of the destination and the female participation in exporting companies



Source: own elaboration based on RAIS/MTE and SECEX data.

Note: the figure shows the relationship between the female participation in the total jobs of each company and the logarithm of the weighted average value by the exported value of the per capita income of the destinations of those companies' exports, controlled by the sector (CNAE Division), in 2019.

on the extractive industry. On the other hand, agriculture shows the smallest difference in average remuneration between workers in companies that participate or do not participate in Brazilian foreign trade.

Although companies active in foreign trade pay higher wages, it is interesting to examine what happens with the wage differential between men and women when the comparison is made within each group (participants or not in foreign trade). According to Figure 9, the difference in average remuneration between men and women tends to be greater in companies participating in foreign trade. This evidence aligns with the findings of Bøler et al. (2018) for Norway. A possible explanation raised by the said study is the fact that foreign trade activities require greater flexibility of schedules, which could put women at a disadvantage if they have less flexibility or are perceived in this way. It is worth mentioning that the analysis presented in Figure 9 does not control for educational levels, for example. Thus, what is presented is a differential not conditioned to the characteristics of the workers. This might explain the presence of the negative differential for the extractive industry. It is possible that women are proportionally more present in roles associated with higher

⁵The relationship shown in the graph is controlled by differential for the extractive industry. It is sector fixed effects (CNAE division).

Figure 8
Foreign trade companies pay higher salaries

educational levels in this activity.



Source: own elaboration based on RAIS/MTE and SECEX data.

Note: the figure shows the average salary of workers for each group formed by a combination of gender, activity, and whether the company is involved in foreign trade or not, in 2019.

Figure 9
The salary gap between men and women is greater in companies that participate in trade



Fonte: own elaboration based on RAIS/MTE and SECEX data.

Nota: the figure shows the percentage difference between the average salaries of men and women for each group formed by a combination of activity and whether the company is involved in foreign trade or not, in 2019.

3

Women entrepreneurs and foreign trade



Gender differences in the corporate composition of companies are even more pronounced than those observed in paid employment, especially regarding participation in global trade. Companies owned by women are less likely to export and import than companies with predominantly male partners.

To encourage greater female leadership in global markets, it is necessary to understand the reasons behind such disparity. In pursuit of elucidating these issues, gender data in corporate ownership of companies, both participants and non-participants in trade, are explored.

Like female workers, female producers and entrepreneurs are affected by trade through sectoral reallocation and technological change. Therefore, the sectoral detail of the company partners' data presented in this section is an important tool in analyzing the effects of international trade disaggregated by gender.

The first set of data used in the analysis of the gender structure of corporate ownership is formed by data from the Brazilian Federal Revenue of the names of the partners, by establishment. The names of the individual partners were correlated with data from the gender classification of Brazilian names, organized and made available by Brasil.io,⁶ based on the data from the 2010 Census of the Brazilian Institute of Geography and Statistics (IBGE). This classification indicates the gender probability for each name, according to the frequency observed in the Census. The names from the partner base were associated with the gender of higher probability. For the definition of the majority gender in the company's ownership, the proportion of men and women in the total of individual partners was made.⁷ Companies with more than 50% women in the corporate body

were called "companies with predominantly female partners." These data were then correlated with the international trade data from SECEX. The details of the data used are described in the Annex.

Companies mostly run by women are also under-represented in foreign trade

Figure 10 shows that women are under-represented in the corporate bodies of Brazilian companies. This fact is even more present in firms operating in Brazilian foreign trade. While companies that do not participate in export and import activities have a proportion of 23% of firms with predominantly female partners, this number significantly reduces for companies active in international trade. Only 14% of exporting companies and 13% of importing companies have a female predominance in their corporate bodies. This result observed for Brazil is quite close to the average of 76 developing and emerging countries analyzed by the World Bank Enterprise Survey, which shows that among exporting companies, women own 10% of manufacturing companies and 12% of service companies (World Bank and WTO, 2020).⁸

Complementarily, Figure 11 details the previous result by economic activity (CNAE division). Firstly, there is a low presence of companies predominantly owned by women for agricultural and extractive activities. For example, for these activities, exporting companies present a proportion of only, respectively, 9.87% and 8.08% of companies with predominantly female partners. This participation in exporting firms rises to 12.27% in the transformation activity and to 16.58% in other activities. This evidence aligns with the results found in the (World Bank and WTO, 2020), showing that the level of participation of companies owned by women increases in regions with

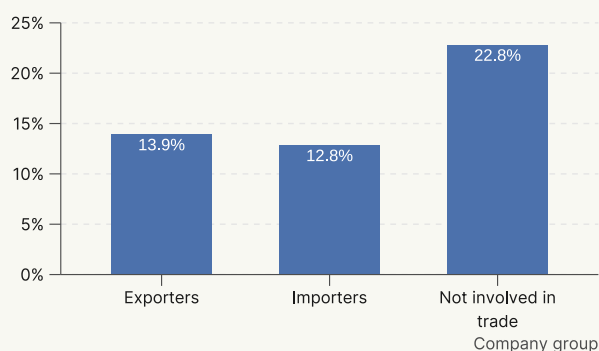
⁶Available at: <https://brasil.io/dataset/genero-nomes/nomes/>

⁷Some companies also have legal partners. These partners are disregarded in the analysis.

⁸Available at: <https://www.enterprisesurveys.org/en/data>

Figure 10

Few companies, including exporters, have a majority of women shareholders



Source: own elaboration based on the Internal Revenue Service of Brazil and SECEX data.

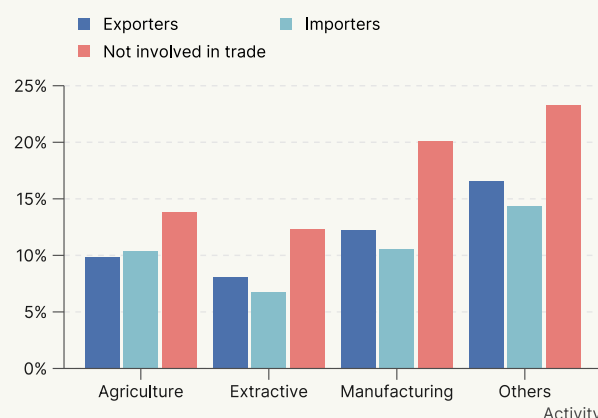
Note: the chart shows the percentage of companies in each group that have more than 50% of women as partners, in 2022.

specialization in advanced manufacturing and services, when compared with regions specialized in commodities. Secondly, the difference in the female proportion between companies participating and not participating in international trade is greater in the transformation activity. That is, companies owned by women are less likely to export in all the activities analyzed, and with an even more significant disparity in manufacturing.

The differences in women's participation in the corporate bodies of companies, observed among economic activities, in turn, reflect regional differences. This is because Brazilian states have different levels of specialization in each activity. Figure 12 presents the proportion of companies with predominantly female partners by state, comparing non-participating companies in international trade with exporting companies. The Southeast and South stand out for the greater female presence in the partnership of exporting firms, compared to other Brazilian regions. In other regions, female participation is more relevant in companies that concentrate sales only in the domestic market, compared to the South and Southeast. This regional difference between exporting and non-participating firms results from the greater specialization in the transformation industry of the South and Southeast, comparatively to the rest of the country.

Figure 11

The participation of women in the corporate structure varies by activity



Source: own elaboration based on the Internal Revenue Service of Brazil and SECEX data.

Note: each company was considered as belonging to one of the four activity groups related to foreign trade. The chart presents the percentage of companies in each group and CNAE division that have more than 50% of women as partners, in 2022.

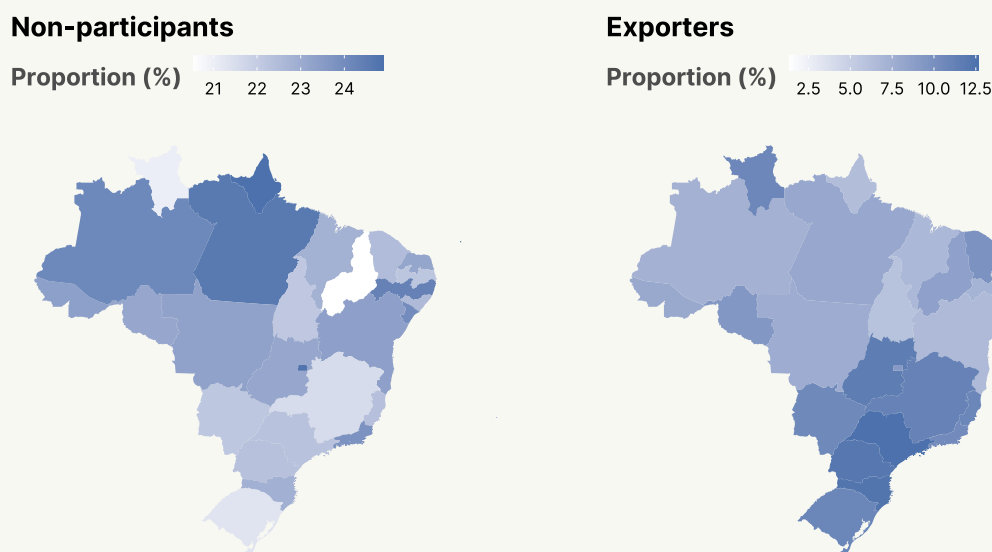
Additional costs faced by women can affect the participation of female companies in foreign trade

The small corporate participation of women, especially in international trade, is due to various reasons. A first explanation is related to the size of companies composed of men and women, as costs and trade barriers disproportionately affect smaller companies, discouraging them from seeking global markets. Therefore, it is important to assess how the proportion of women is distributed among Brazilian companies, by size. Using the classification of size from the Brazilian Federal Revenue, it is possible to verify, in Figure 13, that the participation of companies predominantly owned by women is relatively low in all sizes. Moreover, it is observed that this participation tends to decrease with the size of the company. For example, 24% of micro-exporting companies have women as the majority of partners.

However, companies with a female majority in the corporate body represent only 9% of the total medium and large companies that export. The same is true for non-participating companies.

Figure 12

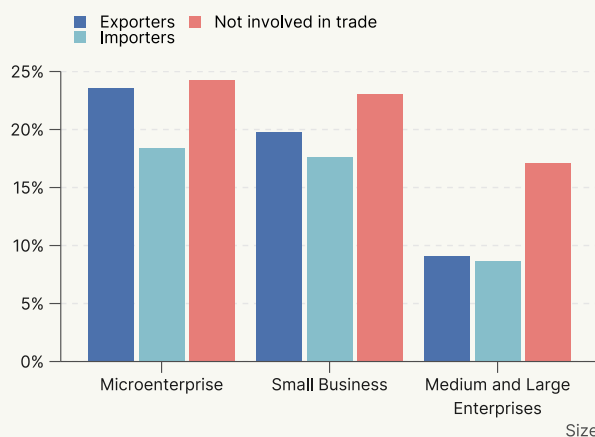
Few companies, including exporters, have a majority of women shareholders in all states



Source: own elaboration based on the Internal Revenue Service of Brazil and SECEX data.
Note: the chart shows the percentage of companies in each group that have more than 50% of women as partners, in 2022.

Figure 13

Women are more present in the corporate structure of micro and small enterprises



Source: own elaboration based on the Internal Revenue Service of Brazil and SECEX data.

Note: the chart shows the percentage of companies in each group that have more than 50% of women as partners, by trade group and size classification of the Federal Revenue, in 2022.

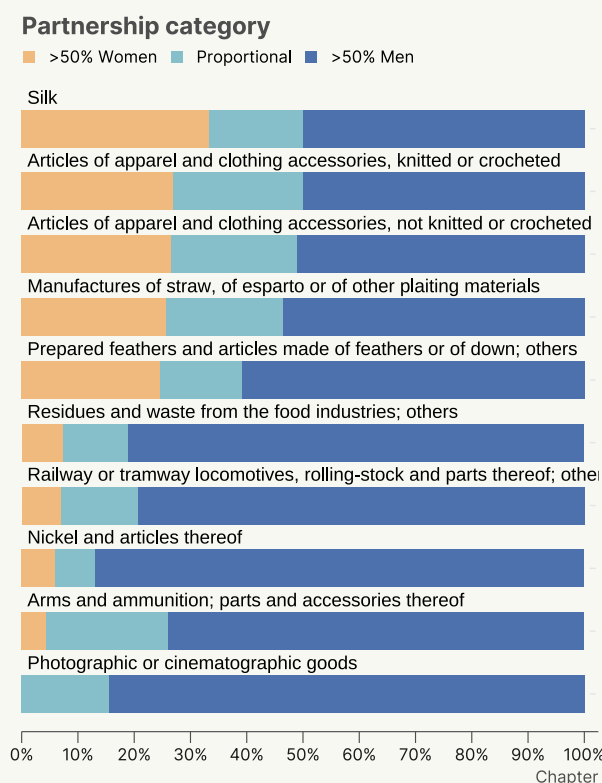
With a greater insertion of firms predominantly owned by women in the group of micro and small companies, compared to the observed proportion of medium and large firms, measures that reduce the costs of entering the international market can help increase the insertion of exporting companies led by women, since

the fixed costs associated with access to different markets can penalize smaller firms more strongly.

It is also noted that the disparity in female participation between exporting companies and non-participants in trade is more pronounced in medium and large companies. Therefore, size does not explain all the observed gender differences in trade alone. Next, the role of specialization in sectors with higher or lower trade protection is investigated.

As trade policy often presents heterogeneity in sectoral terms, women may be disproportionately affected depending on their presence in different sectors of the economy. For example, there are considerable differences between tariffs by sector. Based on data from the World Integrated Trade Solution (WITS) of the World Bank, the average global tariff for the textile and apparel sector was 10.7% in 2020. On the other hand, the average tariff applied to chemical products, for example,

Figure 14
Products with the highest and lowest percentage of predominantly female exporting companies



Source: own elaboration based on the Internal Revenue Service of Brazil and SECEX data.

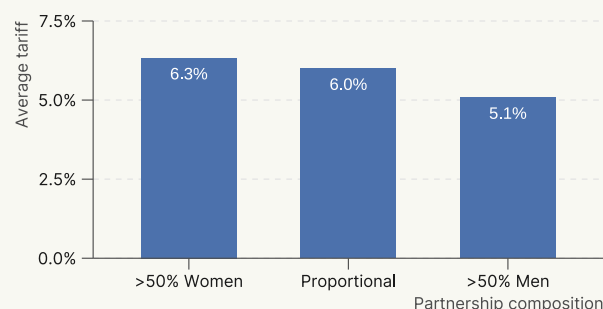
Note: the figure shows the percentage of companies in each category of partners (predominantly women, proportional between men and women, predominantly men), by chapter of imported products. The 5 chapters with the highest and the 5 chapters with the lowest proportions of companies composed predominantly by female partners are presented, in 2022.

was 5.5%.⁹ Therefore, it is important to visualize the sectoral distribution difference of companies predominantly composed of female partners.

Figure 14 presents the products, grouped into chapters of the Harmonized System, that have the five highest and five lowest proportions of exporting companies with boards predominantly composed of women. First, it is worth noting that the chapter with the highest participation of companies with predominantly female partners is that of silk products. Another relevant sector for female participation is apparel. However, it is worth noting that, maintaining the observed pattern in aggregate data, these percentages do not exceed 35%. For sectors with lower

⁹Simple averages of most-favored-nation (MFN) tariffs were taken into account.

Figure 15
The products habitually exported by predominantly female companies are subject to higher tariffs



Source: own elaboration based on data from the Federal Revenue of Brazil and SECEX from 2022 and the last available year for each country from the Macmap database, varying from 2018 to 2020.

Note: the figure shows the average tariff of the products exported by the companies in each category of partners (predominantly women, proportional between men and women, and predominantly men).

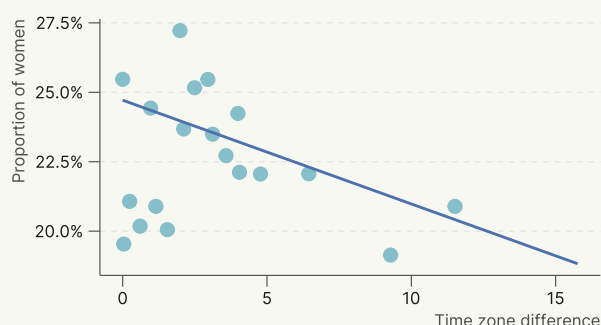
participation, a level below 10% is observed.

This sectoral concentration has an impact on the level of tariff protection potentially faced by these companies. By observing the most exported products by group of companies and the average tariffs applied to Brazilian exports of these products around the world, it is possible to verify that companies with mostly female partners export products that, on average, have higher tariffs than those observed considering the group of companies with mostly male partners. The difference is 1.2 percentage points in the averages. The (World Bank and WTO, 2020) present similar evidence found by (Mendoza et al., 2018) for India, but focusing on the distribution of jobs in different sectors, not on the corporate structure. The authors found an average difference of 1 percentage point.

Another important characteristic of international trade that can disproportionately affect women is the difference in time zones between different partners. As mentioned earlier, (Bøler et al., 2018) present evidence for Norway that the gender wage gap may be associated with a lower time zone overlap between the Norwegian exporter and its trading partners. In this sense, we seek to evaluate if the same can be observed in Brazilian data regarding the gender difference in corporate ownership.

Figure 16

There is a negative relationship between time zones and the ownership of shares by women



Source: own elaboration based on the Internal Revenue Service of Brazil and SECEX data.

Note: the figure shows the relationship between the percentage of women partners in companies and the time zone difference between the company's export destinations and Brazil, in 2022.

An initial analysis, illustrated by Figure 16, was conducted using a box scatter plot. The plot allows visualization of the relationship between the proportion of female partners in the company and the time zone difference between the company's export destinations and Brazil, controlling for the company's economic activity. In other words, it allows comparison between companies in the same sector. This first analysis shows a negative relationship between the variables. This is supported by more robust evidence found by estimating the regression of the proportion of female partners on the time zone difference between Brazil and the trading partners of each exporting company.¹⁰ The results reveal that a greater time zone difference is indeed correlated with a lower presence of female partners in exporting companies. An increase of one hour in the time zone difference is associated with a reduction in the proportion of women by 0.37 percentage points.

¹⁰The time zone difference was calculated as the weighted average by export value. Economic activity CNAE fixed effects were also considered.

4

Final considerations



Despite the many advances in women's participation in employment, entrepreneurship, and international trade experienced in recent decades, gender disparity is still evident. However, the lack of gender-disaggregated data made it difficult to formulate trade policies focused on women. Disaggregated data are necessary to assess how different policies and barriers affect women and men differently.

This report utilizes a dataset that, for the first time, allows researchers and policymakers to see labor and societal data from Brazil, related to international trade, by gender. These data provide new insights into how women are employed, in which industries they work, what their income is, where they operate as entrepreneurs, and whether they are involved in global trade.

It was observed that, unlike the global average, in Brazil, female participation in employment in companies not engaged in foreign trade is higher than in those that export and/or import. The largest number of female jobs related to trade is in activities that include construction, commerce, and services. On the other hand, activities with lower female participation, both in absolute number of jobs and as a percentage relative to men, are agricultural and extractive activities.

Furthermore, women's participation in employment is higher in smaller firms, both for companies engaged and not engaged in foreign trade. It is also higher in companies that have a higher share of differentiated products in their export baskets. Regarding income, companies engaged in international trade pay higher salaries in all activities. However, the difference in average remuneration between men and women tends to be greater in companies involved in foreign trade.

From a societal perspective, women are underrepresented in Brazilian companies. This fact is even more pronounced in firms

engaged in foreign trade. The participation of companies owned by women increases in manufacturing and services activities. However, women are less likely to export in manufacturing. The participation of companies predominantly owned by women is relatively low in all sizes, and this participation tends to decrease with the size of the company. Measures that reduce entry costs into the international market, such as simplifying technical and legal procedures, harmonizing commercial documents, and providing technical training, can therefore help increase the participation of women-led exporting companies. Finally, companies with predominantly female owners export products that, on average, face higher tariffs than those observed for companies with predominantly male owners.

As a next step, SECEX will continue its efforts to analyze gender data for a better understanding of women's participation in international trade and to shape interventions to support women. Moreover, it is important to conduct impact assessments of international integration and technical assistance policies, considering the effect of trade on gender equality. The results of this work can also guide negotiations and initiatives related to market access, especially for micro and small enterprises, and new growth opportunities, such as digital technologies, trade in services, and online platforms. Finally, gender-disaggregated data will help identify priority sectors and markets where women have a comparative advantage. Targeted policies can thus help women maximize the benefits of trade.

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A

Annex - Data

This work uses various data sources, such as foreign trade data from the Secretariat of Foreign Trade, formal employment data from the Annual Social Information Report (RAIS) and registration data and corporate charts from the Brazilian Federal Revenue Service (RFB). These databases are described below.

Foreign trade data

The foreign trade data used in this work is provided by the Foreign Trade Secretariat (SECEX) of the Ministry of Development, Industry, Trade and Services. SECEX is responsible for processing, analyzing and disseminating information on Brazilian foreign trade. This data is collected through import and export declarations, which are mandatory for all companies that carry out foreign trade operations. Using this data, it was possible to identify the companies operating in Brazilian foreign trade. Any company that registered an import or export operation in the period under analysis (2010-2022) was considered to be a foreign trade participant in each year. Companies were considered to be all firms with the same 8-digit CNPJ code. This approach follows the counting standards established by the United Nations Statistics Division (UNSD), for which head offices and subsidiaries constitute a single company.

Public administration companies, non-profit companies and international organizations were excluded from the sample because they have different operating criteria from other companies.

Foreign trade data follows the Mercosur Common Nomenclature (NCM), which is a product classification system adopted by the countries of the bloc, being a classification derived from the Harmonized System (HS) for classifying goods used in international trade. The NCM is made up of eight digits, the first six of which follow the HS. This classification has a hierarchy in which the first two digits indicate the product chapter, the first four digits indicate the product heading, the first six digits indicate the subheading and, finally, the subitem is identified by the 8 digits. In addition, the chapters are separated into different HS sections.

Employee data

The data used to analyze the labor market is from the Annual Social Information Report (RAIS) for the years 2010 to 2020 (the last year of data available to SECEX). RAIS makes it possible to identify the number of formal jobs reported by the reporting companies and, additionally, enables analysis based on the characteristics of the employees (gender, age,

educational level, remuneration, etc.) of these companies.¹¹ Similarly to the foreign trade data, a company was considered to be a group of firms belonging to the same 8-digit CNPJ. Again, public administration companies, non-profit companies and international organizations were disregarded.

In the analysis of RAIS data involving the company's activity classification, the decision was made to initially consider the division (two digits) of the National Classification of Economic Activities (CNAE) with the largest number of employees declared. Next, the divisions were classified into major activities as follows: the activities were aggregated into "farming" (01 to 03), "extractive" (05 to 09), "transformation" (10 to 33) and "other" (other codes). Note that the "other" aggregation corresponds to companies whose core business is related to services, commerce and construction.

Membership data

In order to identify the corporate structure of Brazilian companies, the Brazilian Federal Revenue Service's 2022 database was used.¹² In addition to the corporate structure, the data also allows for the identification of the company's size and activity according to the National Classification of Economic Activities (CNAE). The registration data published by the RFB does not characterize "Medium or Large Companies", nor is there any current legislation defining these concepts for CNPJ registration. The use of this category is restricted to this report and is a conceptual extrapolation that generically considers as "Medium or Large" commercial companies that are not Individual Microentrepreneurs (MEI), Microenterprises or Small Businesses. Finally, companies with "active" registration status in 2022 and with the legal nature of business entities and individuals (codes starting with 2 or 4) were considered.

Tariff data

The analyses involving tariffs were developed using data from the Market Access Map (Macmap). In order to obtain the largest number of informing countries, the data for 2019 was mainly considered. In the absence of information for that year, data for 2020 or 2018 were considered, in that order.

¹¹ Each employment relationship was considered in proportion to the number of months worked in the year. In other words, workers with employment contracts in force for the entire year were given a weight equal to 1. For non-full-time jobs, we opted to calculate the proportion of months worked in the year. Thus, a worker with 6 months of employment was given a weight of 0.5.

¹² The data is available at: <https://dados.gov.br/dados/conjuntos-dados/cadastro-nacional-da-pessoa-juridica---cnpj>

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