Proceedings of the 2nd International Conference on Financial Technology and Business Analysis
DOI: 10.54254/2754-1169/97/20231479

Trade and Inequality-considerations of the Gini Coefficient, Female Employment, Natural Resources, and Economic Growth

Shimeng Zhao[1,a,*]

[1]*School of Economics, Guangzhou City University of Technology, Guangzhou, 510850, China*
a. 2045153729@qq.com
**corresponding author*

Abstract: With the deepening development of globalization and world trade, the gap between human individuals has been paid more and more attention by researchers in the field of economic and social sciences. However, a large body of literature focuses on the inequality caused by trade and globalization, while relatively ignoring other inequality factors, such as women's participation in the work force, especially in developing countries with low international influence. This paper refers to the exports of goods and services (% of GDP), the Gini coefficient, the share of female labor force in the total labor force, natural resource rental income (% of GDP), the natural logarithm of GDP per capita (economic growth) of 20 different developing countries with the highest trade volume in the world. The interrelation of exports of goods and services, as a percent of GDP, to the latter four is analyzed. A multiple regression model was set up. The model results show that a country's export of goods and services is not significantly correlated with the Gini coefficient, indicating that trade does not directly cause the expansion of a country's income gap; As the trade volume is significantly positively correlated with the number of female labor force, it indicates that the expansion of trade makes more women participate in the work force. For some countries, exports of goods and services are significantly and positively related to the country's natural resource rental income, while for some countries they are not. The export of goods and services has a significantly positive correlation effect on a country's economic growth.

Keywords: Exports of goods and services, Gini coefficient, Labor force of female, Total natural resources rents, lngdp

1. Introduction

With the deepening development of economic globalization and trade liberalization, the economic, political and cultural connections of countries in the world are increasingly close. Trade has brought a lot of convenience to mankind, enabling people in a country to enjoy foreign products and services at a lower cost at home, greatly enriching consumers' choice of goods, expanding domestic demand and stimulating consumption. Driving the country's economic growth. Equality for all is the ideal state of society. A large gap between the rich and the poor in a country is easy to cause residents to lose confidence in the government's economic regulation and control, resulting in social and political unrest. However, relevant field studies and different voices of various people have shared the claim that the increase in the volume of international trade has widened inequality, especially the inequality of income distribution, thus leading to a widening gap between the rich and the poor. Since 1992, China's foreign trade has been growing rapidly, and its own taxes and trade barriers have been greatly reduced (Dai Feng Trade Liberalization and Inequality: Based on China's empirical research). The Gini coefficient reflects the degree of income inequality in a region, and China's Gini coefficient has remained above the warning level of 0.4 for all the years in the past decade. As a large and increasingly prominent country in the developing world, China's income inequality represented by the Gini coefficient is also a common problem in many developing countries in the world. Many countries, such as Belize, Brazil, and the Republic of South Africa, have Gini coefficients as high as 0.5 or even close to 0.6 all year round. This shows that the inequality of income distribution objectively exists in developing countries. While globalization provides the exterior job opportunities, the global flow of capital is also creating new careers and problems, including new poverty. In addition to income distribution, inequality in opportunity, such as female labor force as represented by the share of women in the total labor force, is also a factor in inequality. Female labor force as a percentage of the total labor force shows the extent to which women are active in the labor force. Labor force comprises people ages 15 and older who supply labor for the production of goods and services during a specified period. Labor force participation rate, especially female labor force participation rate, reflects the degree to which female workers participate in social life in a country or region, which is closely related to labor supply. When the total population and social resources are given, a higher labor force participation rate can bring about a large amount of labor supply, while a lower labor force participation rate will reduce the labor supply.In a large number of studies on trade and inequality. The inequality of income distribution represented by the Gini coefficient has been paid attention to and discussed by scholars. But few of the economics scholars have been able to ask whether an increase in a country's trade volume leads to an increase in women's participation in the workforce. Are a country's abundant natural resources a blessing or a curse for long-term economic development? At first glance, the answer to this question should seem self-evident. But if we look around at home and abroad today, it is sobering to see that countries that are rich in natural resources do far worse than those that are poor in natural resources. In the case of oil-rich Saudi Arabia, per capita GDP fell by an average of 3 percent a year between 1965 and 1997. Over the same period, output per person fell by 2% a year in Iran, by 1% in Venezuela, and by almost the same amount in Nigeria since independence in 1960.Is there a correlation between an increase in a country's trade volume and its natural resource rental income? While trade integration is always regarded as a principal determinant of economy growth, the data analysis for a casual linkage between trade and economy is ambiguous. Does an increase in a country's trade volume lead to substantial economic growth for that country? This paper will be in the form of data analysis, selects the export of goods and services (% of GDP), Gini coefficient, the proportion of female labor force in the total labor force, natural resource rental income (% of GDP), and the natural logarithm of per capita GDP (economic growth) of 20 different developing countries in the world to discuss the relationship between the export of goods and services and the latter three.

2. Literature Review

Whether trade causes inequality varies across the literature. The first is the view that trade does cause income inequality. According to China's experience, the level of trade liberalization is indeed associated with the existence of domestic income inequality expressed by the Gini coefficient[1]. The dynamic benefits of trade brought about by free trade, such as economic growth, technological progress and improvement of people's overall living standards, are obvious to all [1]. Labor-intensive enterprises are the main driving force for the increase of export trade value added [2]. In addition to income inequality, inequality of opportunity, including employment, is also an important indicator

DOI: 10.54254/2754-1169/97/20231479

that can be easily measured [3]. Labor employment fundamentally examines women's social status and political rights in a social structure[4]. Female employment is an important way and guarantee for women to obtain and retain property rights, as well as a prerequisite for achieving gender equality and improving women's status. It will also affect social stability and development[5]. Inequality in income and opportunity may lead to social differentiation, exacerbate class conflict, and create a vicious circle of inequality. From the perspective of social equality, the higher the degree of women's work participation is, the more equal the employment opportunities provided by the society will be [3,4].According to the neoclassical growth theory, the channels through which trade openness promotes economic growth mainly come from the economies of scale effect brought by trade , the promotion of capital formation and the improvement of the efficiency rate of capital allocation etc[6]. In terms of global inequality, increased trade can widen or narrow the gap between developing and developed countries, while within countries, increased trade can improve or exacerbate income, wage and regional income inequality [7].In a dynamic panel setting, it is argued that the often used trade-to-GDP or “trade openness” ratio, which is the volume of exports and imports as a share of total GDP does not adequately capture the impact of trade on GDP per capita growth[8].

3. Methodolody

This paper uses multiple regression model to analyze the sample data.

3.1. RESOURCE OF DATA

In this paper, the empirical analysis of data from the world bank official website (https://data.worldbank.org.cn/indicator?tab=all) and Indexmundi released data from 2012 to 2022, They are Luxembourg, Hong Kong SAR, Singapore, Malta, Ireland, Seychelles, Slovak Republic, Belgium, Netherlands, Cyprus, Slovenia, Hungary, Lithuania, Macao SAR, Brunei Darussalam, Estonia, Cambodia, Switzerland, North Macedonia, Czech Republic. The sample covers 20 countries and regions.

3.2. Selection of variables

3.2.1. Explained variable

The explained variables in this paper are Gini coefficient, the proportion of female labor force in the total labor force, natural resource rental income (as a percentage of GDP), and the natural logarithm of per capita GDP (economic growth). Gini coefficient represents a country's income inequality. The higher the Gini coefficient is, the higher the income inequality is. The proportion of the number of female laborers in the total number of laborers represents the degree of opportunity inequality in a country.

3.2.2. Explanatory variables

The value of exports of goods and services (as a percentage of GDP) is the only core explanatory variable in this paper. This paper will explain the above three explained variables. It aims to explain the impact of trade on a country. Since the definition of trade is not the same in the academic circles, this paper uses a country's exports of goods and services (as a percentage of GDP) to represent the country's total international trade.

4. Results And Key Findings

Based on the selected sample data and using the spss data analysis tool, we obtain the following results (Table 1). Among them, (1), (2), (3), (4), (5) and (6) respectively represent six countries: Luxembourg, Hong Kong Special Administrative Region of China, Singapore, Malta, Ireland and Seychelles. (Measurement results are only shown for some countries.)

Table 1: Estimation results of the control variable method.

	(1)	(2)	(3)	(4)	(5)	(6)
	exp_	exp_	exp_	exp_	exp_	exp_
gini	-35.29	-28.99				118.4
	(86.20)	(90.34)				(74.23)
female_				-2.053*		-5.434***
				(0.970)		(0.897)
rent_			-2.123***			3.828
			(0.618)			(6.492)
lngdp					20.22***	31.70***
					(2.543)	(4.206)
_cons	102.5***	* 91.00*	96.23***	* 183.9**	-110.3***	-36.97
	(26.89)	(29.73)	(10.20)	(44.55)	(27.11)	(53.16)
year	No	Yes	Yes	Yes	Yes	Yes
N	129	129	240	247	260	127
R-sq	0.001	0.015	0.054	0.027	0.212	0.467
adj. R-sq	-0.007	-0.068	0.004	-0.027	0.170	0.406

Standard errors in parentheses
="* p<0.05 ** p<0.01 *** p<0.001"

The results show that for countries with non-missing data, the relationship between exports of goods and services (% of GDP) and the Gini coefficient is not significant, with positive and negative correlations varying from country to country. This shows that in Luxembourg, China's Hong Kong Special Administrative Region, and Seychelles, without considering other influencing factors, the value of goods and services exports (% of GDP) is not necessarily related to the Gini coefficient. That is, an increase in a country's trade is not responsible for the greater inequality in the distribution of income within the country.

For Malta and Seychelles, exports of goods and services (% of GDP) are negatively and significantly related to the share of women in the labor force at the 10 percent and 1 percent levels, respectively. This illustrates that, irrespective of other factors, the increase in trade in Malta and Seychelles has led to a decline in the share of female Labour in the total population of the Labour force. It is possible that increased trade has created more jobs suitable for men in both countries.

Exports of goods and services (% of GDP) natural resource rental revenues (% of GDP) are negatively and significantly correlated at the 1% level for Singapore, while exports of goods and services (% of GDP) natural resource rental revenues are insignificant for Seychelles. This shows that, without considering other factors, the increase in Singapore's trade induces a decrease in the income of Singapore's natural resource rents. In other words, the development of international trade has increased Singapore's income to a certain extent, making Singapore less dependent on rental income from natural resources.

For Ireland, Seychelles, the value of exports of goods and services (% of GDP) with respect to the natural log of GDP per capita (economic growth) has a positive relationship at the 1% level. This suggests that, independent of other factors, the increase in foreign trade in Ireland and Seychelles caused local economic growth expressed as the natural logarithm of GDP per capita. This indicates that the increase in international trade promotes the economic growth of both countries.

5. Conclusion

The topic of trade and inequality has been much debated internationally. For different countries, due to different national conditions and different supply and demand conditions in the domestic market, the income inequality effect brought by trade is not the same. When a country supports trade, foreign goods, services, technologies and labor can flow into the country at a lower tax cost, causing certain changes in the industry and market. When a large amount of literature in academia studies the issue of trade and inequality, most of them study the income inequality of different levels of workers in China, such as skilled workers and unskilled workers, which represents the degree of trade openness of a country. Little literature has focused on inequality of opportunity in a country's labor market and the degree of economic growth, natural resource dependence. This is precisely the point on which this literature is concerned. The table of measurement results shows that a country's trade openness, as measured by exports of goods and services (% of GDP), does not directly correlate with domestic income inequality, as measured by the Gini coefficient, suggesting that trade is not a prerequisite for inequality in the 20 countries surveyed. However, the openness of trade does have a significantly negative correlation with women's participation in work. For Singapore, the degree of trade openness is significantly negatively correlated with its income from natural resource rent, which may be because the openness of trade brings additional income to Singapore and reduces its dependence on the income from natural resource rent. As for whether trade openness promotes a country's economic growth, the answer is yes, and the increase of trade is significantly positively correlated with the growth of lngdp, indicating that trade openness drives the economic growth of the observed countries.

It can be seen that the impact of trade is multiple. The causes of inequality are also multiple. For some countries, trade has not been a driver of income inequality. For some countries, however, the inherent nature of trade has indeed led to a widening of the income gap between different workers within countries. Openness to trade reduces the share of women in the labor force to some extent, but it also increases a country's economic growth and enables it to reduce its dependence on natural resources. The convenience, choice and advanced technology and services that trade brings to the residents of a country are obvious to all in the world. In terms of improving people's livelihood, international trade has played an important role. It is not for a country to oppose trade and derailment with world trade because of its possible negative effects. This paper aims to call on all people of all groups to pay attention to the multiplicity of trade, including opportunity inequality and economic growth, rather than focusing solely on the income inequality of domestic workers represented by the Gini coefficient. Policy makers should also pay attention to the problem of unequal opportunities for different classes of people.

References

[1] Trade liberalization and income inequality: an empirical study based on China [J]. World Economy Studies,2005(10):39-46.

[2] *Zheng, D. & Yu, J. The added value of China's export trade and influencing factors of the microscopic accounting research [J]. Journal of international trade issues, 2014 (8) : 3-13. DOI: 10.13510 / j.carol carroll nki. Jit. 2014.08.001.*
[3] *Xu L Q. The Industry of Female employment - wage tendency and gender discrimination [J]. Journal of Women's Studies,2004(02):34-38. (in Chinese with English abstract)*
[4] *Zhang D D. Marketization and gender wage difference [J]. Chinese Journal of Population Science,2004,(01):34-43+81.*
[5] *Jin, F. Research on China's Contemporary Female Employment Issues (China Contemporary Female Employment Issues), Northeast Normal University, (2012).*
[6] *Bao, Q., Xu, H. & Lai, M. Yong. Trade openness and economic growth: theory and experience of China [J]. Journal of World Economy,2003(02):10-18.*
[7] *Busse M, Königer J. Trade and economic growth: A re-examination of the empirical evidence[J]. Available at SSRN 2009939, 2012.*
[8] *Yang, D. & Zhang, Y. Trade openness, urban concentration and regional inequality in developing countries: evidence from cross-country panel data [J]. Economic Trends,2016(01):63-75.*