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Slave trade and Human Trafficking

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Abstract

The literature has not sufficiently engaged in the emergence and expansion of the phenomenon of slave trade. This article estimates whether or not slave trade affects human trafficking using an Ordinary Least Squares (OLS) with standard errors that are consistent with heteroscedasticity. The paper also checks for the robustness of the OLS model. The findings of the paper reveal that the effect of slave trade on human trafficking is positive and statistically significant.The more one is exposed to the phenomenon of slave trade, the more human trafficking is important. The paper also deduces that developed countries that experienced slave trade record low level of human trafficking nowadays, while developing countries continue to record high level of human trafficking. Additionally, institutions werefound to be statistically very significant, and essential to be politically and socioeconomically consolidated and promoted, mainly in developing countries in order to alleviate the level of human trafficking.

JEL Classification: I20; I29; N30
Keywords: Human Trafficking; Slavery

1. Introduction

From Nunn's (2008)[2] empirical and significant work, numerous literature on the consequences of slavery have emerged. Bezemer et al. (2014) for instance, assessed the long-run effect of politico-economic development from an African indigenous slavery system. Similarly, Nunn and Wantchekon (2011) found that current disparities in levels of trust with Africa can be traced back to the Indian Ocean and transatlantic slave trade. Whatley and Gillezeau (2010, 2011a) established a positive connection betweenthe restricted geographic scope of the 20th century ethnic groupings and the number of slaves that left the African West coast. Moreover, Whatley and Gillezeau (2011b) looked into the evolutionary processes facilitated by encounters of the indigenous African population with colonial powers. As a result of their investigation, the main effect of slave trade in African economies is perceived as a consistent illustration of the resource curse.

Additionally, Phillippe (2010) discovered that slave tradewas negatively correlatedwith the level of education and the quality of some infrastructure at the beginning of last century in the French western African region. Bertochi and Dimico (2014) linked the USA slavery to the concept of income inequality. This latter study suggested that the slavery experience could explain, for instance, the persistent educational gap observed between black and white Americans (Bertochi and Dimico, 2012). The impacts of slave trade are numerous. In light of this, slave trade hasimpacted on local economic development and institutions.Slave trade has also impacted on demographics, family structure, and gender role (Bertocchi, 2015).

Throughout the present study, the emphasis is placed on the effect of slavetrade on human trafficking. The extent of human trafficking is significant considering that the literature is quiet limited on this subject. Therefore, one can say with Hernandez and Rudolph (2015) that the causes of human trafficking are relatively well-known. Additionally, Hernandez and Rudolph (2015) have succeeded to put in place some empirical evidence on slavery and human trafficking in the European framework. Whereas, Akee et al. (2010a) based their studies precisely on the determinants of trafficking in children and female.Some of their findings revealed that by using cross-national data, the most marginalized people, that is, women or children in a source country of international trafficking and trafficking hubs have high probabilities of working in the agricultural sector. Their results also indicate a higher dependency proportion of children population belonging to the source countries and

[2] For an introduction to Nunn's research work, read Kodila-Tedika (2011)

trafficking hubs in comparison to host countries.Other studies by Rudolph and Schneider (2013) proposed a large measure of human trafficking and determinants in a cross-section.

The current study intends to contribute toward existing literature of slavery and human trafficking andseeks toadd the historical dimension to the determinants of slavery and human trafficking. Reasons behind this hypothesis are twofold: firstly, the relationship between the slavetradeand human trafficking can be an illustration of stable equilibrium. Davis and Weinstein (2002, 2008) supported this argument in observing that Japanese towns of Hiroshima and Nagasaki, which were bombarded during the World War IIreturned to their initial state as before the bombardment (e.g. industrial composite and population-wise). Miguel and Roland (2011) provided similar results with Vietnam. Somehow, there is a state equilibrium to which one country seems to return to. The type of relation we put forth refers to the so-called "path dependence" or a typical case of looking back to the past.

Secondly, the way through which slave trade explains human trafficking, nowadays, could be linked to culture. For instance, a study by Miguel et al (2008) have shown that the most violent football players, in European leagues in general, come from countries with civil war histories. Additionally, Fisman and Miguel (2007) discovered that diplomats from countries experiencing a high level of corruption are those who accumulate unpaid parking tickets in the United Nations parking bay. In considering the control of other probable bias variables, one can concludethat culture plays a major role in daily decision-making. Moreover, it is possible that countries that have experienced a historical phenomenon, such as slave trade, could develop some reasonable understanding regarding practices that explain a high tendency to engage into human trafficking activities today. Tabellini (2010) and Guiso et al. (2013) substantially emphasised on the importance ofhistory in the determination of cultural norms and actual behaviours.

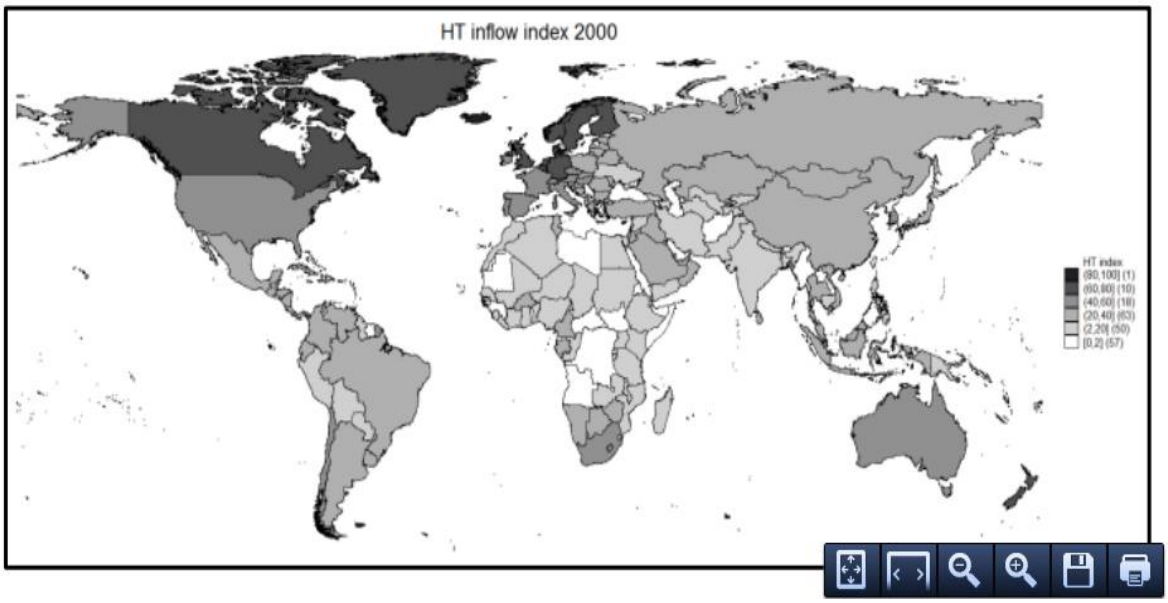
The rest of the research paper is structured as follows. Section 2 discusses the data and methodology used whileSection 3 presents the empirical analysis and check for the robustness of the results. Section 4 discussest the results obtained, while theconclusion section is provided in section 5.

2. Empirical strategy and data

2.1 Data

Data on human trafficking are extracted from the Rudolph and Schneider (2013) study which suggested a new database. This database were also in various studies, such as Avdan(2012); Njoh and Ayuk-Etang (2012) as well as Potrafke (2013). The measurement of human trafficking uses an index which ranges between 0 and 100. This measurement means that the more a country's score is near 100, the lower it experienced human trafficking. Similarly, high levels of human trafficking arerecorded in countries where the human trafficking index is near 0. Figure 1, represents an illustration of the intensity of human trafficking all over the world.

Figure 1. Development of Human Trafficking intensity in destination countries



Source: Rudolph and Schneider (2013)

Figure 1 clearly indicates that human trafficking is quiet high in sub-Sahara Africa and in the northern part of Africa. This could be justified by the fact that most countries in these regions have experienced, in the past or continue to experience today,severe periods of civil wars. A clear example of these countries include: Angola, Central African Republic, Democratic Republic of Congo (DRC), Libya and South Sudan, as shown in Fig1.

For several years in the past, slaves were essentially regarded as "free labour" used by European colonies and the colonial USA to keep the colonial economy moving forward.As such, slave trade isestimated asthe number of people sold to another colonial territory between 1400 and 1900. The estimate of the number of slaves is is obtained from Nunn and

Puga (2012)'s study. Moreover, the study also made use of the "mean ruggedness" which is the mean value of an index on landscape ruggedness (relative to hundreds of meters above the sea level) for a nation. The mean ruggedness is calculated using geospatial surface undulation indicators based on a one degree resolution form the Geographically based Economic data (G-Econ) project (Nordhaus, 2006). Thisvariable depends on a more spatially disaggregated elevation at a ten-minute resolution (New et al., 2002). The grid-cell-level appreciation of ruggedness is consolidated up to national level by averaging across the grid cells which are located within the borders of a country. We invite the interested reader to gain more insights into the computation on the website of the G-Econ project. This variable has been employed in Nunn and Puga (2012) in the stream of literature on slave trade. Data on agricultural transition are extracted from Putterman (2008)'s study. Data on institutions are obtained from Kaufmann, Kraay & Mastruzzi (2010) data base and the log of GDP per capital for the year 2010 is extracted from Penn World, Table 8.1.

2.2. Empirical specification

The specification of the regression model in Eq. (1) examines the effect of slave trade on human trafficking across 140 countries.

$$HT_i = \propto_1 + \propto_2 ST_i + \propto_3 \aleph_i + \varepsilon_i \qquad (1)$$

Where:$HT_i(ST_i)$represents a human trafficking (slave trade) indicator for country$i$,$\alpha_1$is the intercept coefficient t,$\aleph$ is the vector of control variables, and ε_i the error term. HT represents human trafficking, the dependent variable, ST represents the slave trade, and$\aleph$ comprises: Mean index of ruggedness, Agricultural transition, Institution, GDP per capita and a dummy variable for continents which one assigned a value of 1 if the base or reference category (continent) is Europe, and 0 otherwise . In line with the underlying literature, the interest of Eq. (1) is to estimate whether or not slave trade affects human trafficking using an Ordinary Least Squares (OLS) with standard errors that are consistent with heteroscedasticity.

The multiple regression (OLS) used, is subdivided into three models for comparison purpose. We firstly present the OLS results in Table 1, than check for the robustness of the resultsin Table 2.

3. Empirical Results

The OLS regression in Table 1 estimates three models (Model 1, Model 3 and Model 3). The variable 'slave trade' was found to very significant in all three models. This indicates that after running a simple multiple regression, one found out that there is a strong relationship between slave export and human trafficking. Table 1, also indicates that the estimated coefficients for institution in Model 2 (0.319) and Model 3 (0.331) are both statistically significant (p-value = 0.01).

Table 1: OLS results

	eq1	**eq2**	**eq3**
Slave trade	-0,000***	-9.02e-06***	-7.75e-06***
	(3.42e-06)	(1.70e-06)	(2.10e-06)
Mean index of ruggedness (in 100m above)"		0,214	-0,513
		(0,828)	(0,697)
Agricultural transition		-0,000	7.08e-06
		(0,000)	(0,001)
Institution		0,319***	0,331***
		(0,072)	(0,079)
GDP per capita		-0,033	-0,025
		(0,022)	(0,022)
Africa			-15,635***
			(3,348)
Americas			-11,625***
			(3,537)
Asia			-14,924***
			(2,383)
Europa			(dropped)
Oceania			-14,305***
			(3,236)
_cons	30,612***	11,392***	25,385***
	(1,435)	(3,479)	(6,129)
Number of observations	140	61	61
R2	0,047	0,519	0,577

note: .01 - ***; .05 - **; .1 - *;

Moreover, in considering 'continent' as a dummy variable, Model 3 shows that the slave trade difference between Africa and the reference category Europe has an estimated coefficient of -15.635 and p-value = 0.01, *ceteris paribus.* Similarly, the slave trade difference between America and Europe indicates a coefficient of -11.625; p-value = 0.01. The slave trade difference between Asia and Europe shows a coefficient of -14.924; p-value

= 0.05, while the one between Oceania and Europe shows a coefficient of -14.305; p-value =0.01, *ceteris paribus*. A robust test was conducted and the results are presented as follows:

Check for Robustness

Table 2 also compares three models (Model 4, Model 5, and Model 6) after checking for the robustness of the results. The results indicate more variability in Model 6 than in the two others. Slave trade was found to be statistically significant in all three equations (p-value = 0.01 and 0.05). Moreover, the estimated coefficients in all three equations where found to be very small and negatively associated with human trafficking. The results also show that the variable institution is statistically very significant (p-value = 0.01), with an estimated coefficient of 0.219 and 0.188 in model 4 and model 5 respectively. Thus, one can reject the null hypothesis that institutions have no effect on slave trade.

Similar to the result obtained in Table 1, the dummy variable'continent' inModel 5 shows that the slave trade difference between Africa and Europe has a coefficient of -17.813 and p-value = 0.01, *ceteris paribus.* Similarly, the slave trade difference between America and Europe indicates a coefficient of -11.932; p-value = 0.01. Slave trade difference between Asia and Europe shows a coefficient of -13.358; p-value = 0.05, while the one between Oceania and Europe shows a coefficient of -14.868; p-value =0.01, *ceteris paribus*.

Table 2: Check for Robustness of Results

	eq4	**eq5**	**eq6**
Slave trade	-0,000**	-8.21e-06***	-5.98e-06**
	4.29e-06	2.47e-06	2.30e-06
Mean index of ruggedness (in 100m above)"		-0,085	-1,118
		(0,698)	(0,698)
Agricultural transition		-0,000	-0,001
		(0,000)	(0,000)
Institutions		0,219***	0,188***
		(0,041)	(0,039)
GDP per capita		-0,036*	-0,029
		(0,020)	(0,018)
Africa			-17,813***
			(5,910)
Americas			-11,932**
			(5,747)
Asia			-13,358**

			(5,424)
Europa			(dropped)
Oceania			-14,868**
			(7,388)
_cons	26,960***	14,783***	33,185***
	(1,246)	(2,586)	(6,591)
Number of observations	140	61	61
R2	0,039	0,469	0,580

note: .01 - ***; .05 - **; .1 - *;

4. Discussion of Results

As portrayed in the results section (Table 1 and Table 2), slave trade is a significant variable, very low in magnitude, and found to have a strong relationshipwith human trafficking. For instance, in Table 2, this indicates that the increase number of slave tradehasslightly augmentedhuman trafficking by 8.21e-06 and 5.98e-06 in models 5 and 6 respectively. The magnitude of these coefficients are considerably very small which can imply that theimpact of slave trade on human trafficking is of concern. The inverse relationship observed between human trafficking and slave trade refers to the idea that although continents such as America, Asia, Oceania and Europe experienced slave trade, the level human trafficking in these continents is relatively low.

However, this is not the case for the African continent where a considerable number of people were sold to colonial territory as ‘free labour”, yet high levels of human trafficking continue to apparent especially in the sub-Saharan Africa region and in the northern part of Africa. One could justify this high ratio of human trafficking happening as a result of problems such as poverty (Asongu & Nwachukwu, 2016a), severe violence (Asongu & Nwachukwu, 2015; Asongu, 2015; Asongu & Kodila-Tedika, 2016), most developing countries in these regions have experienced in the past or continue to experience today.

Moreover, institutions over the years have played a significant role in reducing the effect of slave trade on human trafficking from one continent to another. Thus, countries with strong political and socioeconomic institutions in continents such as America, and Europe, have succeeded to maintain an index of human trafficking close to 100, which correspond to a lower level of human trafficking. Whereas, developing countries which are well-known for their poor political and socioeconomic institutions continue to experience high levels of

human trafficking. The impact of institutions on human trafficking is considerable and cannot be neglected. Thus, promoting countries' political and socioeconomic institutions can be regarded as a major determinanttoalleviating human trafficking which has a significant relationship with slave trade.

5. Conclusion

Slave trade has evolved quiet significantly from one continent to another over the past centuries. Its main effect on human trafficking is regarded as an illustration of resource curse in the African economies. In the USA framework, slave trade is linked to the concept of income inequality between black and white. The findings of the paper reveals that the effect of slave trade on human trafficking is statistically significant. Moreover, the estimated coefficients of slave trade werefound to be very small and negatively associated with human trafficking.

From the results of the paper, one can deduce that developed countries which experienced slave trade have a low level of human trafficking, while developing countries (including most Africancountries that experienced slave trade) continue to record a high level of human trafficking. Additionally, the institutional variable was found to bevery statistically significant, and essential to be politically and socioeconomically consolidated and encouragedin all continentsin order to alleviatethe level of human trafficking in various countries around the world. An important contribution of this paper is to establish a systematic approach of combatting human trafficking. This systematic approach not only strengthens legal texts in countries by implementing a stricter enforcement of trafficking laws and heavier punishment for individuals involved in trafficking, but more importantly this systematic approach provides people with results that positively impact on their political, socioeconomic and informal institutions.

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List of Countries

Albania ; Argentina ; Burundi ; Benin ; Burkina Faso ; Bangladesh ; Bolivia ; Brazil ; Botswana ; Central African Republic ; Chile ; China ; Cote d'Ivoire ; Cameroon ; Congo ; Colombia ; Costa Rica ; Dominican Republic ; Ecuador ; Egypt ; Ethiopia ; Georgia ; Ghana ; Guinea-Bissau ; Honduras ; Haiti ; Indonesia ; India ; Israel ; Jordan ; Japan ; Kenya ; Republic of Korea ; Sri Lanka ; Lesotho; Morocco ; Madagascar ; Mexico ; Mali ; Mozambique ; Mauritania ; Malaysia ; Namibia ; Niger ; Nepal ; Pakistan ; Panama ; Peru ; Philippines ; Papua New Guinea ; Paraguay ; Rwanda ; Senegal ; Sierra Leone ; El Salvador ; Syria ; Chad ; Togo ; Thailand ; Tunisia ; Turkey ; United Republic of Tanzania ; Uganda ; Uruguay ; South Africa ; Zambia ; Zimbabwe