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## **Fixing For a Fight: Can Interstate Rivalry Ever be Positive for the State's Populace?**

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# Fixing For a Fight: Can Interstate Rivalry Ever be Positive for the State's Populace?

Ilian Mitev

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This article aims to challenge the myth that interstate rivalry and conflict can only have negative effects for state populace. It observes that interstate rivalry can have positive effects on poverty reduction in developing states. It begins by explaining Tilly's bellicose model of war and state-building, and investigates how it can be adapted to non-OECD (Organisation for Economic Co-operation and Development) states, engaging with current literature in the process. Then it considers some objections to the application of the model to non-OECD states, concluding the literature review by explaining the causal mechanism expected to result in poverty reduction. The article then runs a number of comparative statistical regressions on a pooled cross-sectional time-series dataset, measuring poverty, rivalry and control variables tri-annually from 103 non-OECD states between 1981 and 1999. The results of these tests support the general hypothesis that interstate rivalry reduces poverty. The article then concludes by discussing moral considerations, policy advice and future research directions.

Interstate rivalry is a protracted extreme hostile relationship, involving competition between two or more states over a temporally evolving set of issues. States in such relationships exhibit irrational addictive behaviour towards the use of hostility and military threats against each other.<sup>1</sup> The two widely used measurements of rivalry are strategic and enduring rivalry. The former is measured qualitatively in terms of threat perception and foreign policy response. The latter is measured quantitatively in terms of military interstate conflict over a prolonged time period.<sup>2</sup> 75% of all strategic interstate rivals engage in war<sup>3</sup> and the majority of international military conflicts

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<sup>1</sup> B. Valeriano, *Becoming Rivals: The Process of Interstate Rivalry Development* (New York, 2013), 13-14.

<sup>2</sup> W. R. Thompson, 'Identifying Rivals and Rivalries in World Politics' (2001) 45:4 *International Studies Quarterly* 557-586; J. Klein, G. Goertz & J. Diehl, 'The New Rivalry Dataset: Procedures and Patterns' (2006) 43:4 *Journal of Peace Research* 331-348.

<sup>3</sup> Thompson, *Identifying Rivals*, 557-586.

occur between enduring rivals.<sup>4</sup> Although somewhat positive for the state, there is little evidence to suggest rivalry translates into a positive effect for its population. This article will examine the potential benefits for the populace of rival states. Ultimately, it challenges the notion interstate rivalry can only be studied for the advancement of the state and rivalries can never be beneficial to the populace.

This article focuses on the impact of external rivalry on intrastate poverty reduction. It studies absolute poverty, as defined by personal income of under \$1.25 per day. This should not be mistaken for relative poverty, which is measured in comparison to the mean personal income of a state. Developing states in an interstate rivalry reduce poverty indirectly and directly. Indirectly, rivalry produces economic growth through infrastructural expansion, providing more low-skilled job opportunities. It also reduces poverty directly by changing the class power structures of people in poverty through elevating their collective bargaining. This article argues ruling elites are more likely to make concessions to their populace under the threat of external rivals due to their need to sustain stability and economy growth.

## UNDERSTANDING TILLY'S MODEL

Because of the depth and strength of the theory, this article focuses on Tilly's predatory state-building model.<sup>5</sup> As such, it is the most relevant and debated theory of predatory state-building.<sup>6</sup>

Tilly sees state-building as a result of interstate war, intrastate war, protection and extraction of resources, where protection refers to neutralising the rivals of ones clients/power base.<sup>7</sup> He concludes that ruling elites in Europe engaged in interstate and

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<sup>4</sup> F. Diehl & G. Goetz, *War and Peace in International Rivalry* (Ann Arbor, 2000).

<sup>5</sup> Ibid.; T. Ertman, *Birth of the Leviathan: Building States and Regimes in Medieval and Early Modern Europe* (USA, 1997), 14-15; K. Rasler & W. R. Thompson, 'War Making and State Making: How and Where Does it Fit into a Bigger Picture?' in J. Vasquez (ed.), *What do we Know About War?*, 2<sup>nd</sup> Edition (USA, 2012), 237-239.

<sup>6</sup> Rasler & Thompson, *War Making and State Making*, 241-242.

<sup>7</sup> C. Tilly, 'War Making and State Making as Organized Crime.' in P. Evans, D. Rueschemeyer & T. Skocpol (eds.), *Bringing the State Back in* (Cambridge, 1985), 182; Thies, *A Study of Post-Colonial Developing Country Extractive Efforts*, 54.

intrastate war in order to eliminate any claims to the state's monopoly of violence, legitimacy or control over its territory.<sup>8</sup>

Wars need resources, which is why the state extracts taxes, but these extraction needs constantly rise.<sup>9</sup> To continue extracting at a higher rate than their enemies, states engage in controlling and maximising the means of production. As production needs rose, non-ruling social classes were placed in a position where they could bargain for adjudication. This is because production, and therefore extraction, is dependent on the citizens' cooperation and economic output.

Armies require supplies, so a need for controlling the distribution of goods rose in order to assure the smooth military conduct.<sup>10</sup> Subsequently, empowered citizens can demand existing structures are also used to redistributing goods to address inequalities.<sup>11</sup> As Figure 1 shows, Tilly's model concludes that all state action eventually leads to distribution.<sup>12</sup>

## ADEQUACY OF THE MODEL

Other theorists have recently expanded on Tilly's model and the idea that war is a catalyst for state-building. Stubbs argues war and the threat of war act as catalysts for political, economic and social development of states in Southeast Asia.<sup>13</sup> However, he points out war's effects are not always beneficial. For example, a war fought in a state's territory has destructive ramifications, resulting in non-uniform outcomes for war-induced state-building.<sup>14</sup> Conversely, Stubbs concludes the threat of war consistently has constructive results.<sup>15</sup>

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<sup>8</sup> Tilly, *Coercion, Capital, and European States*, 96-99.

<sup>9</sup> *Ibid.*, 103-107.

<sup>10</sup> *Ibid.*, 96-99/117-120.

<sup>11</sup> *Ibid.*

<sup>12</sup> *Ibid.*, 97.

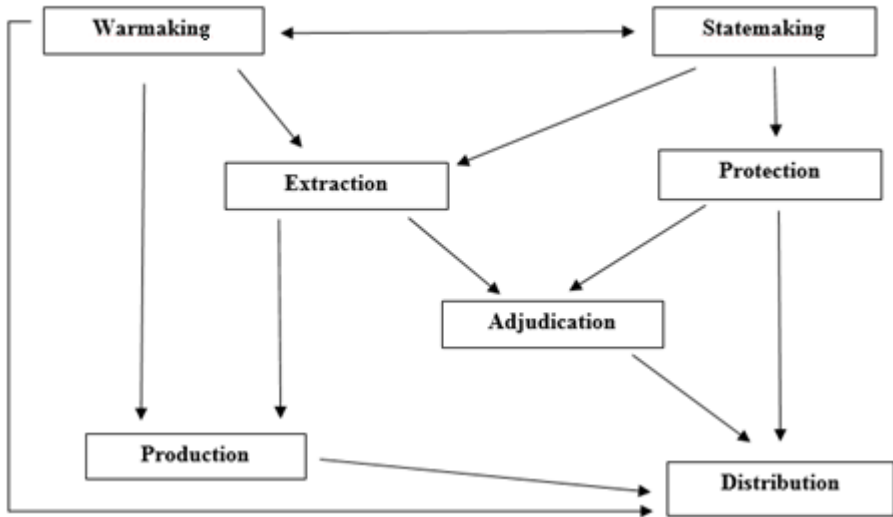
<sup>13</sup> R. Stubbs, *Rethinking Asia's Economic Miracle: The Political Economy of War, Prosperity and Crisis* (China, 2005), 18-20.

<sup>14</sup> *Ibid.*

<sup>15</sup> *Ibid.*

Centeno broadly replicates these findings for Latin America in arguing war that has not acted as a catalyst for economic and political progress.<sup>16</sup> He argues the intensity of war and the duration of war is more important than the presence of war itself, concluding that limited wars create limited states. Additionally, Centeno argues that preparation for war has a positive effect on society.<sup>17</sup>

Figure 1. Relationship among major activities of states



Using these observations, Thies operationally defines the threat of war in terms of interstate rivalry.<sup>18</sup> Due to the longevity of enduring rivalries and the response to threat perception in strategic rivalries, he argues they are of the right intensity and duration to produce the best results.<sup>19</sup> His quantitative analysis concludes rivalry has a positive effect on extractive capability, and by extension state-building, in the post-colonial developing world.<sup>20</sup> Consistent with Centeno and Stubbs, Thies concludes war

<sup>16</sup> M. A. Centeno, *Blood and Debt: War and the Nation-State in Latin America* (USA, 2002), 266-269.

<sup>17</sup> *Ibid.*

<sup>18</sup> Thies, *A Study of Post-Colonial Developing Country Extractive Efforts*, 57-65.

<sup>19</sup> *Ibid.*, 62-63.

<sup>20</sup> C. Thies, 'State Building, Interstate and Intrastate Rivalry: A Study of Post-Colonial Developing Country Extractive Efforts, 1975-2000' (2004) 48:1 *International Studies Quarterly* 53-72; C. Thies,

itself generally has a negative effect on political development and extraction.<sup>21</sup> Considering the above, this article uses interstate rivalry as the independent variable for testing its hypothesis.

Whilst substituting war with rivalry has become an established method of testing Tilly's model, there are still a number of state-building activities from this model that have not been tested. A new wave of studies has expanded the academic engagement with Tilly's model by examining the effects of interstate rivalry on economic growth, as well as the effects of war on economic growth and extraction.<sup>22</sup>

Here, the presence of interstate rivalry is expected to result in the redistribution of goods, with the goal of tackling inequality. There seems to be no direct way of measuring the redistribution process itself, but there is a direct measurement of inequality, through the widely used Gini index.<sup>23</sup> However, as explained later, there was a lack of data concerning this index. Alternatively, Besley and Burgess found poverty falls by 67% when there is a reduction of one standard deviation in inequality. This is why this article utilises absolute poverty (henceforth poverty) measures as a proxy for inequality.<sup>24</sup> Although far from ideal, poverty can provide an insight into the behaviour of inequality reduction. As poverty has mostly been eradicated in high income Organisation for Economic Co-operation and Development (OECD) countries, this study observes only non-OECD states. As most non-OECD states are outside Europe, the adequacy of globally adapting Tilly's model is discussed in the next subsection.

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'War, Rivalry, and State Building in Latin America' (2005) 49:3 *American Journal of Political Science* 451-465; C. Thies, 'Political Violence and State Building in Central America' (2006) 39:10 *Comparative Political Studies* 1263-1282; C. Thies, 'The Political Economy of State Building in Sub-Saharan Africa' (2007) 69:3 *The Journal of Politics* 716-731; L. Lu & C. Thies, 'War, Rivalry, and State Building in the Middle East' (2013) 66:2 *Political Research Quarterly* 239-253..

<sup>21</sup> Thies, War, Rivalry, and State Building in Latin America; Thies, Political Violence and State Building in Central America; D. Sobek & C. Thies. 'War, Economic Development, and Political Development in the Contemporary International System' (2010) 54:1 *International Studies Quarterly* 267-287; Lu & Thies, War, Rivalry, and State Building in the Middle East;

<sup>22</sup> C-N. Kang & B. Valeriano, 'Can an Interstate Rivalry Be Positive' *International Studies Association Annual Meeting*; Sobek & Thies. War, Economic Development, and Political Development, 270.

<sup>23</sup> T. Besley & R. Burgess 'Halving global poverty' (2003) 17:3 *The Journal of Economic Perspectives* 10-12.

<sup>24</sup> Ibid.

## CAN TILLY BE APPLIED TO THE DEVELOPING WORLD?

Tilly's model is widely accepted, but there are a number of objections to applying the model outside of Europe.<sup>25</sup> As noted, this study has already solved one problem concerning the intensity of war by focusing on the threat of war instead of war itself. However, there are two additional objections to applying Tilly's model to the developing world.

Firstly, it has been argued territorial conquest has ceased to be an institution in world politics.<sup>26</sup> Herbst notes that since decolonisation and the imposition of the state system in Africa, borders have rarely been challenged.<sup>27</sup> He argues African leaders will react differently than expected by Tilly, due to a lack of threat of losing their state. Ayoob disagrees international norms are this deterministic, arguing conquest has not been abolished.<sup>28</sup> He offers the breakdown of the USSR and Yugoslavia as evidence. Additionally, Stubbs theorises external conflict can lead to the breakdown of economic and social life, resulting in internal unrest and *coup d'état*.<sup>29</sup> Therefore, even if there is no conquest, it is unlikely ruling elites lack the stimulus to engage in traditional state-building as a response to external threats.

Secondly, Herbst also posits internal strife is more relevant than external rivalries in the decision making process because of the lack of conquest.<sup>30</sup> As noted, external rivals can lead to civil wars or worse. Additionally, Ayoob observes the majority of external rivals start rivalries to exasperate internal tensions by encouraging secessionism.<sup>31</sup> To prevent secessionism, he concludes that states need to ensure they are stronger than their competing neighbours. This further suggests external rivals pose the same threat to third world countries as they did to European states, even if conquest is absent. Therefore, this article proceeds on the basis there is not sufficient evidence to suggest developing countries experience a different processes from their European peers.

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<sup>25</sup> Rasler & Thompson, *War Making and State Making* 244-246.

<sup>26</sup> *Ibid.*

<sup>27</sup> J. Herbst, *States and Power in Africa: Comparative Lessons in Authority and Control* (USA, 2000), 21-28/221-226.

<sup>28</sup> M. Ayoob, *The Third World Security Predicament: State Making, Regional Conflict, and the International System* (Colorado, 1995), 173-177.

<sup>29</sup> *Ibid.*, 18-20.

<sup>30</sup> Herbst, *States and Power in Africa*, 21-28/221-226.

<sup>31</sup> Ayoob, *The Third World Security Predicament*, 23-28/47-51/53/55-56.

## APPLYING THE THEORY AND DEFINING THE CAUSAL MECHANISMS

The adequacy of the model now established, this article proposes that two causal mechanisms affect poverty reduction in non-OECD states. Figure 1 showed the two ways that the threat of war can act as a catalyst for the redistribution of wealth. The first mechanism is indirectly reducing poverty through economic and infrastructural growth. The second is directly reducing poverty, by elevating the population's bargaining position to redistribution of wealth.

Regarding the first mechanism: the threat of war acts as a catalyst for political, economic, and social development of the state.<sup>32</sup> Once in a rivalry, each side enters 'an extreme competition with each other'.<sup>33</sup> This involves doing everything possible to be relatively ahead of the rival.<sup>34</sup> When engaged in rivalry, states tend to find ways to enhance their power through any means possible. They do this usually through military proliferation and alliance seeking.<sup>35</sup> Further, Stubbs also suggests finding patrons that supply aid might accelerate economic and military growth.<sup>36</sup> Rudloff, Scott, and Blew support this and note the USA allocates larger amounts of aid to the neighbours and rivals of their own rivals.<sup>37</sup>

While military spending seems to have an adverse effect on economic income,<sup>38</sup> Kang and Valeriano argue rivalry has a net positive effect on economic growth in developing countries and the international system as a whole.<sup>39</sup> These findings loosely coincide with Stubbs' observation that the Vietnam War had a positive effect on the East Asian states by providing them with an opportunity to develop economies supplying the war effort.<sup>40</sup>

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<sup>32</sup> Stubbs, *Rethinking Asia's Economic Miracle*, 18-19.

<sup>33</sup> J. Vasquez, *The War Puzzle* (Cambridge, 1993), 75-76.

<sup>34</sup> Valeriano, *Becoming Rivals*, 13-14.

<sup>35</sup> Kang & Valeriano, Can an Interstate Rivalry Be Positive; Valeriano, *Becoming Rivals*, 72-90; S. Sample, B. Valeriano & C-N. Kang, 'The Societal Determinants and Impact of Military Spending Patterns' (2013) 43 *Political and Military Sociology – Annual Review* 117-119.

<sup>36</sup> Stubbs, *Rethinking Asia's Economic Miracle*, 148-152.

<sup>37</sup> P. Rudloff, J. M. Scott, & T. Blew, 'Countering adversaries and cultivating friends: Indirect rivalry factors and the allocation of US foreign aid' (2013) 48:3 *Cooperation and Conflict* 417-418.

<sup>38</sup> Sample et al., *The Societal Determinants*, 131-133.

<sup>39</sup> Kang & Valeriano, Can an Interstate Rivalry Be Positive.

<sup>40</sup> Stubbs, *Rethinking Asia's Economic Miracle*, 125-152.



According to Stubbs, the presence of the Vietnam War resulted in a number of favourable factors for economic growth.<sup>41</sup> For example, it helped Thailand build an army and brought the American Army into the region. The armies themselves needed provisions, thus providing a good environment for the aligned states to encourage industries that would supply the armies with what it needed. Specifically, this included infrastructural expansion in order to increase army mobility. The labour market quickly absorbed all possible labour and all states in the region boasted full employment, resulting in a reduction in poverty and a gradual redistribution of wealth in society.<sup>42</sup> These observations are consistent with Goudie and Ladd's as well as Besley and Burgess' findings that economic growth largely reduces poverty.<sup>43</sup>

Obviously, states need money to invest, which is usually provided by taxation of society. As noted, Thies and Lu have found extraction capability increases during a rivalry.<sup>44</sup> As rivalry is a competition, one expects rivalling states would compete in extraction of resources in order to fund larger and more effective armies. This means that they would also have to increase their production means, as observed by Kang and Valeriano.

Goudie and Ladd posit states with high inequality rates are likely to perform poorer than more equal states in terms of economic growth.<sup>45</sup> States should therefore be willing to concede to population demands for wealth distribution if that causes better economic growth and secures improved extraction cooperation. Simultaneously, elites can be expected to avoid internal unrest, which would essentially result in direct poverty reduction.

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<sup>41</sup> Ibid.

<sup>42</sup> Ibid., 148-150.

<sup>43</sup> A. Goudie & P. Ladd, 'Economic growth, poverty and inequality' (1999) 11:2 *Journal of International Development* 192-193; Besley and Burgess, Halving global poverty, 7-9.

<sup>44</sup> Thies, A Study of Post-Colonial Developing Country Extractive Efforts; Thies, War, Rivalry, and State Building in Latin America; Thies, Political Violence and State Building in Central America; Thies, The Political Economy of State Building in Sub-Saharan Africa; Lu & Thies, War, Rivalry, and State Building in the Middle East.

<sup>45</sup> Godie & Ladd, Economic growth, poverty and inequality, 192-193.

Ultimately, since interstate rivalries generate economic growth and willingness for the ruling class to concede to redistribution demands, both being related to poverty reduction, this article hypothesises that:

*Hypothesis 1: Due to the fierce competition between rivals, involvement in interstate rivalries will have a positive effect on absolute poverty reduction through economic growth and wealth redistribution.*

## **METHODOLOGY**

### DESIGN

The study conducted a comparative statistical analysis with a cross-sectional time-series design. The sample group tested included all non-OECD countries available in the World Bank PovCal dataset. The following variables and datasets were used.

### DEPENDENT VARIABLES: MEASUREMENTS OF POVERTY

Poverty was operationalised by three different variables — *poverty headcount index*, *poverty gap index* and *squared poverty gap index* — taken from the PovCal Dataset. The *poverty headcount index* represents the proportion of people living in a household with income per person under the poverty line.<sup>46</sup> The *poverty gap index* measures the mean income of all people living under the poverty line. It represents the average income needed to bring a person out of poverty.<sup>47</sup> Lastly, the *squared poverty gap index* measurement gives more weight to the people farthest away from the poverty line, ultimately being more sensitive to changes in the livelihood of the poorest section of the people living under the poverty line.<sup>48</sup> All of the above variables measure absolute poverty. The poverty line for this research was set at \$1.25 per day, per purchasing power of the 2005 US dollar.

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<sup>46</sup> E. Alvi & A. Senbeta, 'Does Foreign Aid Reduce Poverty?' (2012) 24:8 *Journal of International Development* 960.

<sup>47</sup> Ibid.

<sup>48</sup> Ibid.

Whilst these are the best measurements for poverty, Alvi and Senbeta observe that each variable experiences specific contextual limitations in measuring poverty.<sup>49</sup> By using all three measurements, this article mimics their approach observing all possible forms of poverty levels variation.

#### INDEPENDENT VARIABLES: MEASUREMENTS OF RIVALRY

Following the established tradition, two measurements of rivalry were tested.<sup>50</sup> The measurements were enduring rivalry and strategic rivalry. The first measurement was proposed by Diehl and Goertz and updated by Klein, Goertz and Diehl.<sup>51</sup> According to Diehl and Goertz, enduring rivalry is ‘a relationship between two states in which both use, with some regularity, military threats and force as well as one in which both sides formulate foreign policy in military terms’.<sup>52</sup> Klein, Goertz and Diehl operationalise two types of rivalries — enduring and proto — both measured in terms of Military Interstate Disputes (MIDs).<sup>53</sup> Enduring rivalry between a dyad is operationalised when the dyad have experienced six or more MIDs within twenty years.<sup>54</sup>

Proto rivalries are operationalised only after four MIDs or if their disputes do not last twenty years.<sup>55</sup> Consequently, Thies concludes that proto rivalries ‘fail to approach the severity or duration of an enduring rivalry’.<sup>56</sup> Further, he concludes they will not have a strong or significant effect on the state’s extractive capacity. This article expects proto rivalries will lack the intensity to meaningfully reduce poverty.

The second measurement of rivalry was Thompson’s strategic rivalry measurement.<sup>57</sup> According to his conceptualisation, strategic rivals need to see each other ‘as (a) competitors, (b) the source of actual or latent threats that pose some possibility of

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<sup>49</sup> Ibid., 960-961.

<sup>50</sup> Kang & Valeriano, Can an Interstate Rivalry Be Positive; Lu & Thies, War, Rivalry, and State Building in the Middle East, 244-245; Valeriano, *Becoming Rivals*, 93.

<sup>51</sup> Diehl & Goetz, *War and Peace*; J. Klein, G. Goertz & J. Diehl, The New Rivalry Dataset, 331-348.

<sup>52</sup> Diehl & Goetz, *War and Peace*, 4.

<sup>53</sup> Klein, Goertz & Diehl, The New Rivalry Dataset.

<sup>54</sup> Ibid., 335-340; Diehl & Goertz, *War and Peace*, 44-45.

<sup>55</sup> Ibid.

<sup>56</sup> Thies, The Political Economy of State Building in Sub-Saharan Africa, 723.

<sup>57</sup> Thompson, Identifying Rivals.

becoming militarised, and (c) enemies'.<sup>58</sup> Thompson examines the foreign policy histories of states, using the decisions and activities taken by the states to determine the decision makers' perceptions of threat and thus define rivalries.<sup>59</sup> Echoing Thies, this article sees the perception of threat to be enough to stimulate poverty reduction within the state.<sup>60</sup>

Lu and Thies argue the two operational definitions use sufficiently different methodologies for measuring external rivalries.<sup>61</sup> This is observable through the spatial and temporal disparities in their measurements of rival dyads.<sup>62</sup> By testing both, this study aims to confirm the robustness of its results.<sup>63</sup>

Lastly, since the dependent variables are reported tri-annually, this study codes the presence of an enduring, proto, and strategic rivalry as 1 for a given state year: if there was one or more enduring, proto, or strategic rivalries for the majority of the three years prior to and including the measured year. Otherwise, the state year is coded as 0.

#### CONTROL VARIABLES: AID, FINANCE, GDP, AGE DEPENDENCY RATION AND TRADE OPENNESS

Control variables are the standard ones used for testing poverty.<sup>64</sup> Gini measures are excluded from the model, due to lack of data. The Gini index had a non-null value in only 78 out of 660 (11.82%) state years reported by PovCal. The control variables were taken from the World Bank World Development Indicators (WDI) Dataset and included Aid, Finance, GDP, Age Dependent Ratio, Imports and Exports.<sup>65</sup>

A new variable named Trade openness was calculated using the Exports and Imports variables provided by the WDI dataset. Trade openness for a given state year equals

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<sup>58</sup> Ibid., 560.

<sup>59</sup> Ibid., 567.

<sup>60</sup> Thies, A Study of Post-Colonial Developing Country Extractive Efforts, 63.

<sup>61</sup> Lu & Thies, War, Rivalry, and State Building in the Middle East, 244.

<sup>62</sup> Thompson, Identifying Rivals, 570-573; Thies, The Political Economy of State Building in Sub-Saharan Africa, 722.

<sup>63</sup> Valeriano, *Becoming Rivals*, 93;

<sup>64</sup> Alvi & Senbeta, Does Foreign Aid Reduce Poverty, 962.

<sup>65</sup> Appendix A.

the sum of imports and exports of the country for that year. All control variables, including trade openness, are reported as averages of the tri-annual period.

## DATA AND SAMPLE GROUP

The sample data was an unbalanced cross sectional time-series dataset, compiled from the WDI, PovCal, and the two rivalry datasets. The state-year data was defined by the availability of information in PovCal. The dataset had 132 states observed between 1981 and 1999, of which, 30 were removed. Seven were excluded due to being OECD.<sup>66</sup> The West Bank and Gaza and Montenegro were excluded due lack of state system membership in the Klein and colleagues database.<sup>67</sup> Another 10 were omitted due to lack of information on the dependent variables. The resulting dataset included 102 non-OECD state panels. Each state was observed tri-annually, resulting in a maximum of 7 observations per panel. Due to lack of state-system membership throughout the whole duration of the period, some states had fewer observations per panel. The dataset included 660 state-year entries, of which only 525 were tested due to missing values.

OECD states were excluded in order to avoid developed high income states from the sample group. The income group of the rest of the states was calculated according to the World Bank income group classification.<sup>68</sup> As shown in Table 1, 51.52% of the sample group state-years fall within the low income group, 34.70% fall within the lower-middle income group and only 5.45% fall within the upper-middle income group. As expected, there were no high income state years tested.

## STATISTICAL ANALYSIS

As recommended by Beck & Katz, a Prais-Winsten Regression with Panel-Corrected Standardised Errors (PCSE) and AR(1)-type autocorrelation test with a common

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<sup>66</sup> 'High-income OECD', *World Bank*. Available: <<http://data.worldbank.org/income-level/OECD>> [Accessed 20.01.2015].

<sup>67</sup> Klein, Goertz & Diehl, *The New Rivalry Dataset*.

<sup>68</sup> 'Country and Lending Groups', *World Bank*. Available: <<http://data.worldbank.org/about/country-and-lending-groups>> [Accessed 16.01.2015].

correlation coefficient across all panels was conducted.<sup>69</sup> This approach avoids autocorrelation and heteroscedastic errors when testing time-series panel data. The test was run using the panelAR version 0.1 package in R, version x64 3.1.1.<sup>70</sup> Below is the model ran in testing the hypothesis:

$$\text{Hypothesis 1: } \log(\text{Poverty}) \sim \text{Rivalry} + \text{Foreign Aid} + \log(\text{GDP Average}) + \text{Finance} + \text{Age Dependency} + \text{Trade Openness}$$

The model was run six times in order to calculate all possible unique combinations between the two sets of independent variables (represented as Rivalry) and the three dependent variables (represented as Poverty).

**Table 1: Distribution of sample states between income groups.**

<b>Income Group:</b>	<b>Count (% of Total):</b>
Low income	340 (51.52%)
Lower-middle income	228 (34.70%)
Upper-middle income	36 (5.45%)
Higher income	0 (0.00%)
Not available	55 (8.33%)
<b>Total</b>	<b>660 (100%)</b>

## RESULTS AND ANALYSIS

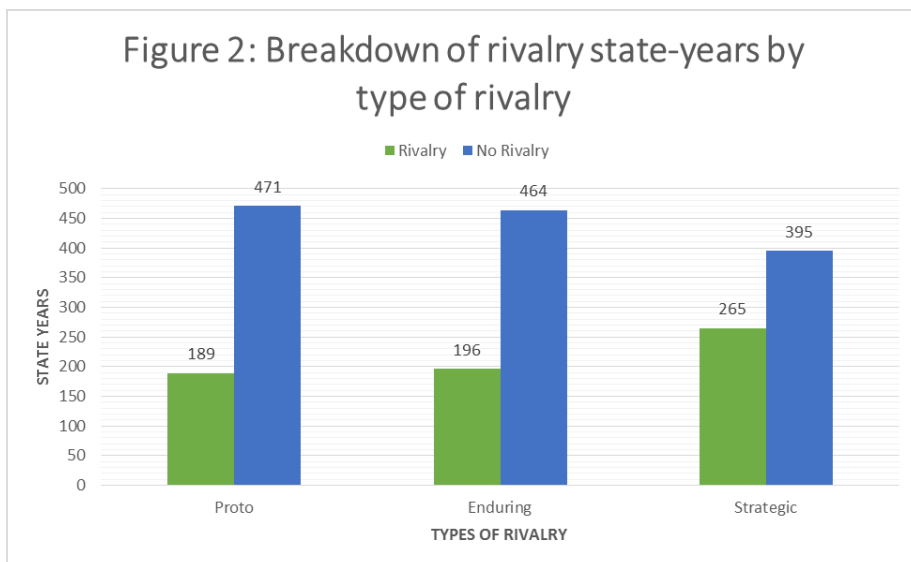
This research aims to investigate whether there is a positive relationship between interstate rivalry and poverty reduction. In Table 2 and Figure 2 the distribution of rivalry and non-rivalry state years in the sample group by type of rivalry is observable.

<sup>69</sup>N. Beck and J. N. Katz, 'What to Do (And Not to Do) With Time-Series Cross-Section Data' (1995) 89:3 *American Political Science Review* 644-645; Kang & Valeriano, Can an Interstate Rivalry Be Positive.

<sup>70</sup> 'panelAR: Estimation of Linear AR(1) Panel Data Models with Cross-Sectional Heteroskedasticity and/or Correlation', K. Kashin. Available: <<http://cran.r-project.org/web/packages/panelAR/index.html>> [Accessed 12.01.2015].

**Table 2: Breakdown of rivalry and non-rivalry state years by type of rivalry**

State years		Types of Rivalry		
		Proto	Enduring	Strategic
Rivalry	Count:	189	196	265
	% of Total:	28.64%	29.70%	40.15%
No Rivalry	Count:	471	464	395
	% of Total:	71.36%	70.30%	59.85%
Total	Count:	660	660	660
	% of Total:	100%	100%	100%



### THE RIVALRY-POVERTY MODEL

Table 3 presents the results for the model testing the relationships between rivalry and poverty. The relationships were tested by running a Prais-Winsten Regression with Panel-Corrected Standard Errors and an AR(1) autocorrelation with a common correlation coefficient across all panels. Columns (1), (3) and (5) report the results of testing proto and enduring rivalries against the three dependent variables – *poverty headcount index*, *poverty gap index* and the *squared poverty gap index* respectively. Columns (2), (4) and (6) report the results of testing strategic rivalries against the dependent variables in the same order as (1), (3) and (5) (Table 3).

**Table 3: Effects of Rivalry on Poverty 1981-1999**  
**Prais-Winsten Regression with AR(1) Correction and Panel-Corrected Standard Errors**

	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Variables	Poverty headcount		Poverty Gap		Squared Poverty Gap	
Proto rivalry	-0.1144 (0.0803)		-0.1103 (0.0915)		-0.1002 (0.1025)	
Enduring rivalry	-0.0457*** (0.0093)		-0.1585** (0.0607)		-0.2841* (0.1161)	
Strategic rivalry		-0.1769. (0.0923)		-0.2066. (0.1107)		-0.2583. (0.1385)
Aid	-0.0042 (0.0041)	-0.0045 (0.0041)	-0.0024 (0.0043)	-0.0027 (0.0040)	-0.0006 (0.0036)	-0.0013 (0.0042)
Log GDP per capita	-0.8192*** (0.0041)	-0.8203*** (0.0961)	-0.9055*** (0.1069)	-0.9102*** (0.1121)	-0.9796*** (0.1091)	-0.9363*** (0.1230)
Finance	0.0698* (0.0041)	0.0862. (0.0442)	0.0609 (0.0520)	0.0793 (0.0618)	0.0170 (0.0839)	0.0510 (0.0794)
Age dependency ratio	0.0220** (0.0041)	0.0221** (0.0071)	0.0251** (0.0078)	0.0248** (0.0078)	0.0272** (0.0084)	0.0265** (0.0088)
Trade openness	0.0005 (0.0005)	0.0004 (0.0004)	0.0004 (0.0005)	0.0003 (0.0004)	0.0003 (0.0006)	0.0002 (0.0005)
Constant	6.6280*** (0.4722)	6.6441*** (0.5175)	5.9530*** (0.6533)	5.9924*** (0.7411)	5.5714*** (0.8428)	5.3707*** (0.9421)
N of observations	525	525	525	525	525	525
N of panels	91	91	91	91	91	91
R-Squared	0.6849	0.6999	0.4809	0.4795	0.3535	0.3265
Wald X <sup>2</sup> (d.f.)	259.0509 (7)	143.373 (6)	206.2395 (7)	717.8889 (6)	139.8357 (7)	135.2609 (6)
Prob > X <sup>2</sup>	0.000	0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses.

Significance codes: \*\*\*\*p<0.001; \*\*\*p<0.01 \*\*p<0.05; \*p<0.1

As expected, enduring rivalry has a negative statistically significant effect on all three dependent variables, indicating that it reduces poverty. Column (1) shows enduring rivalries have the weakest negative correlation with *poverty headcount index* (-0.0457) and column (5) that the strongest negative relationship is between enduring rivalries and the *squared poverty gap index* (-0.2841). This suggests enduring rivalries are more effective at reducing poverty for the people living under the most severe poverty circumstances and are less effective at reducing poverty for the people living closer to the poverty line.



Additionally, proto rivalries have negative but non-significant effect on all three dependent variables. Since no significant relationship was found, Thies' argument — that proto rivalries lack the severity and duration of threat needed to elicit the same type of state-building response as enduring rivalries — is supported<sup>71</sup>.

Unlike Alvi and Senbeta's findings, the negative effect of aid on poverty in Table 3 is not significant. Furthermore, Finance has a significant effect only in (1), when controlling for the effects of proto and enduring rivalry on the *poverty headcount index*, as opposed to having a significant effect on all three dependent variables. They observe no significant effect of Age dependency ratio in their study, but this article deviates by observing a significant positive effect of the variable on poverty in all six tests<sup>72</sup>.

Lastly, GDP per capita has a negative significant effect regardless of independent variable. This strongly supports the author's causal mechanism that rivalry indirectly reduces poverty through eliciting economic growth. Furthermore, these findings are consistent with the wider literature both on poverty and state-building.<sup>73</sup>

In conclusion, apart from Finance and Aid, most factors acted as expected. Enduring rivalries and GDP per capita have a negative significant effect on poverty. Strategic rivalries also have a negative relationship, but are not significant in the conventional sense. These results are not sufficient to falsify Hypothesis 1. Therefore, the author has confidence that interstate military rivalry helps with the reduction of poverty in non-OECD states by promoting economic growth.

## CONCLUSION

Enduring interstate rivals have been shown to directly and indirectly reduce both the depth and breadth of poverty in non-OECD states. However, strategic rivalries fall short of having a significant positive effect on poverty reduction. One reason could be that strategic rivalries are not measured in military terms. Due to the lack of military engagement, states might not expand their infrastructure to support military mobility,

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<sup>71</sup> Thies, Post-Colonial Developing Country Extractive Efforts, 63.

<sup>72</sup> Alvi & Senbeta, Does Foreign Aid Reduce Poverty, 965.

<sup>73</sup> Ibid., 965-969; Kang & Valeriano, Can an Interstate Rivalry Be Positive; Sobek & Thies, War, Economic Development, and Political Development, 280-285.

thus reducing the positive effect on people in poverty. Further research is needed to support this claim. Regardless of these divergent results between the independent variables, the results are decisive and fail to falsify the hypothesis.

While the conclusion of this article does challenge the myth that interstate rivalry is never beneficial for a state's populace, more research is needed before interstate rivalry can be shown as positive for the state's populace. Nonetheless, this article opens new pathways in researching this by conducting an original test exploring a previously unexplored relationship. There are two ways in which the academic society can build upon this work. Firstly, further definition and case studies, expanding the model to its logical extreme can be tested, thus further supporting or falsifying the results of this article. Secondly, by challenging the paradigm, this article allows for follow-up studies examining the role of interstate rivalry on democratisation and other benefits, which can challenge the myth in different ways.<sup>74</sup>

Lastly, although this article finds a positive relationship between rivalry and poverty reduction, ethical considerations must be made before advising policy. Rivalry is a dangerous process, which results in state failure and death.<sup>75</sup> This should never be forgotten and these risks should always be taken into consideration before informing policy. The author would like to conclude by advising against starting rivalries for poverty reduction purposes in developing states. While the information of such beneficial results can be helpful in motivating aid flows, there are other methods of reducing poverty suggested by Alvi and Senbeta, Besley and Burgess, and Goudie and Ladd, which have less salient risks to human security and therefore should always be considered first.

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<sup>74</sup> Rasler & Thompson, *War Making and State Making*, 248-254.

<sup>75</sup> Thies, *Post-Colonial Developing Country Extractive Efforts*, 68-69; Kang & Valeriano, *Can an Interstate Rivalry Be Positive*; Thompson, *Identifying Rivals*; Diehl & Goertz, *War and Peace*;

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## APPENDIX A

Variable short name	Variable definition	Source
Aid	Net official development assistance and official aid received (constant 2011 US\$)	World Development Indicators, World Bank
Finance	Domestic credit to private sector (% of GDP)	World Development Indicators, World Bank
GDP	GDP per capita (constant 2005 US\$)	World Development Indicators, World Bank
Age Dependent Ratio	Age dependency ratio (% of working-age population)	World Development Indicators, World Bank
Imports	Imports of goods and services (% of GDP)	World Development Indicators, World Bank
Exports	Exports of goods and services (% of GDP)	World Development Indicators, World Bank