

# The Spectre of Bandung

## China, the Global South, and the End of Colonial Trade Patterns

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## Abstract

This thesis analysed the development of international trade patterns during the period from 1980 to 2013. More specifically, the research focused on the structure of North-South relations during this period and how China has influenced its dynamic. The legacy of colonialism left behind a particular configuration of international trade, which was highly disadvantageous for the countries of the global South. This 'core-periphery trade structure' proved resilient in the decades following decolonisation, reinforcing the South's subordinate position in the world economy. This research used the gravity model of international trade to trace the development of this trade structure over the last three and a half decades. The research found that patterns of international trade continued to reflect the structural legacy of colonialism throughout most of the twentieth century. However, this structure dissolved around the turn of the millennium as South-South trade started to grow and the North lost its centrality. The growing weight of China in the world economy was an important part of this development. However, the growth of South-South trade is not only a reorientation towards China. It also reflects a system-wide transformation towards a more balanced international trade structure.

**Keywords:** International trade, world economy, North-South relations, South-South relations, colonial legacy, China, IPE, International Relations

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# 1. Introduction

One of the central questions in contemporary scholarship in International Relations concerns the ‘rise of China’ to become a major power in the world. There is much disagreement on the nature and extent of China’s rise, as well as on the implications this has for different spheres of world politics and economics. This thesis attempts to contribute to this debate by addressing a particular aspect of China’s growing weight in the world: its impact on patterns of international trade, with particular attention to the structure of North-South relations.

The structure of the world economy that came into existence during colonial times can be described as a core-periphery structure, in which inequalities between North and South were maintained through the use of force. This structure served to further the economic interests of the core at the expense of societies on the periphery. Although the political structures of imperialism were largely dismantled in the decades following the end of World War II, the economic features of the core-periphery structure proved resilient in the years following independence. One of the economic features of this core-periphery structure was that states in the North were at the centre of international trade. Not only did the North account for the bulk of world trade in terms of value, but it also had extensive trade relationships with all parts of the globe. The countries of the South, however, had a much more concentrated portfolio of trade partners, trading almost exclusively with the economies in the North.

This core-periphery trade structure left the states in the South in a vulnerable position against the North. Their different levels of ‘trade concentration’ conferred a strategically stronger position on the states in the North, as they simply had more alternatives in international trade. The states of the South were more ‘dependent’ on the North than the states in the North were on them. This inevitably had negative consequences for the South’s terms of trade – as, indeed, it had during colonial times. The states of the global South were very well aware of their vulnerable position in the international trade structure and tried various strategies to alleviate it. Most importantly, they encouraged the formation of South-South trade linkages, which had been almost completely absent in the traditional core-periphery trade structure. However, the formation of such trade networks would take time, not least because the structure of economies in the South were highly influenced by the legacy of colonialism. They were geared towards producing primary products and raw materials for export to the North, often in competition with one another. Furthermore, their relative poverty

compared to the North, made the prospects of South-South trade less than feasible at the time of independence.

Nevertheless, there are indications that the structure of international trade has started to change in recent years. Countries in the global South account for an ever-greater share of world trade and are increasingly trading directly with each other. The trajectory of China is particularly important in this respect, as its rapid economic growth in recent decades has substantially altered the balance of the world economy. China is today the largest trading nation in world and has extensive trade relations with all parts of the world economy. For example, in 2011 China became the single largest trade partner of the Sub-Saharan Africa. This would have been unthinkable only two decades before when Sub-Saharan Africa conducted the vast majority of its trade with countries in the North.<sup>1</sup>

However, the growing weight of China in the developing world has also raised suspicions. Some scholars argue that China is becoming a new ‘core’ in the global South, assuming many of the same roles previously played by the colonial powers in the North. According to this reading, the current transformation of the global economy is not so much about the empowerment of the global South, as it is about the repositioning of the core towards the East. China, for its part, presents itself as a champion of the global South and claims that its economic rise empowers the developing world more generally. It strongly denies accusations that its engagement in other parts of the global South resembles the colonial practices of earlier times. Instead it emphasises its own identity as a developing country and frames its engagement in the global South as the cooperation between equals.

There are many sides to this issue and many ways to address it. This thesis attempts to contribute to the debate by analysing patterns of international trade in the period from 1980 to 2013. More specifically, the aim is to systematically assess the structure of international trade during this period, using the gravity model of international trade. The advantage of using the gravity model for this purpose is that it moves beyond simple observations of trade values and main trading partners. The gravity model allows for the assessment of international trade patterns *after* taking into account the size of the economies involved and the geographical distance between them. As such it provides a useful baseline against which to compare actual values of international trade. By using this method, it is possible to make more plausible claims about ‘trade structures’ and their development over time.

The research questions that guide the research can be formulated as follows:

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<sup>1</sup> Paolo Drummond and Estelle Xue Liu, “Africa’s Rising Exposure to China: How Large Are Spillovers Through Trade?” Working Paper 13/250 (International Monetary Fund, 2013), p. 7.

- *Was there still a core-periphery structure to international trade in the early part of the research period?*
- *How did the international trade structure develop during the research period?*
- *What role did China play in this development?*

The following chapter introduces the theoretical framework of the research and puts it into context with the relevant literature. It starts by explaining how the world economy took on a core-periphery structure during colonial times and how the economic features of this structure persisted into the contemporary era. Particular attention is paid to patterns of international trade in a core-periphery system, drawing on Johan Galtung's structural theory of imperialism. Next, the chapter turns to theories of International Relations and how they approach the world economy and its division into core and periphery. The theoretical framework of this research is heavily influenced by structuralist strands of International Relations theory, particularly dependency theory and world-systems analysis. These theories see the world economy as a driving force in international relations, and see the North and South as having substantially different interests in this structure. The rapid economic rise of China is analysed in this context, especially its engagement with the global South. Furthermore, the chapter takes the aforementioned research questions and formulates them into three separate hypotheses based on theory and the existing literature. The chapter concludes with a discussion of the ontological and epistemological foundations of the research.

Chapter three introduces the gravity model of international trade and explains how it was used to assess patterns of international trade over time. The chapter also explains the empirical work behind the thesis: the collection of data and its compilation into a gravity model database. Finally, the chapter explains how the models were estimated and how relevant indicators were obtained in order to answer the research questions. Chapter four introduces the empirical results of the thesis. It is divided into three parts, each of which attempts to assess one of three hypothesis. Chapter five discusses the theoretical implications of the results and how they contribute to the literature on China's rise and its influence on the structure North-South relations. Finally, chapter six draws together the conclusions.

## 2. Literature Review and Theoretical Framework

This research draws on two separate but interrelated literatures in International Relations. Firstly, the thesis draws on the literature on North-South relations, especially the economic aspect of that relationship. Secondly, it draws on the more focused literature on China's engagement with the rest of the global South. However, as is argued in this thesis, these two issues are closely intertwined and cannot be properly understood in isolation from each other. China's economy has grown immensely in recent decades and is today the largest in the world in terms of purchasing power parity.<sup>2</sup> Furthermore, China has become the largest trading nation on earth and has a rapidly expanding presence in the economies of the global South.<sup>3</sup> Any analysis of the transformation of North-South relations must therefore pay close attention to the trajectory of China in recent decades. Conversely, it is impossible to understand China's influence in the global South without placing it in the historical context of North-South relations. The contemporary international system is still heavily influenced by the structural legacy of colonialism and China's economic presence in the global South must be analysed in that context.

### 2.1. *The Emergence and Persistence of a Core-Periphery World Order*

Core and periphery are a relational pair of concepts, which denote an unequal relationship with the former taking precedence over the latter.<sup>4</sup> The concepts have geographical connotations and can be used to analyse a wide variety of relationships at both the global and national levels. For the purposes of this thesis, the concepts will be used in their more widespread application: as a way of describing the division of the world into dominant and subordinated regions within a single structure of interaction.<sup>5</sup>

The concepts of core and periphery were first popularised as a way of describing the structure of the world economy by the Argentinian economist Raúl Prebisch, in his analysis of

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<sup>2</sup> International Monetary Fund, *World Economic Outlook Database*, (April 2015 edition), Available at: [<https://www.imf.org/external/pubs/ft/weo/2015/01/weodata/index.aspx>], (accessed May 15, 2015).

<sup>3</sup> World Trade Organization, *WTO Statistics Database*, (2015) Available at [<http://stat.wto.org>], (accessed May 15, 2015).

<sup>4</sup> Immanuel Wallerstein, *World-Systems Analysis: An Introduction*, (Durham 2004) p. 93.

<sup>5</sup> Barry Buzan and George Lawson, *The Global Transformation: History, Modernity and the Making of International Relations*, (Cambridge 2015), p. 172.

the economic development of Latin America.<sup>6</sup> Prebisch argued that the division of labour in the world economy put the countries in the South (the periphery) at a structural disadvantage to countries in the North (the core). For Prebisch and other dependency theorists, the concepts of core and periphery are understood first and foremost in economic terms. However, in principle, they can be extended to other most spheres of social interaction. Indeed, the economic inequality of core-periphery relationships usually originates in – and is maintained by – other forms of subordination, such as political, military and ideational.<sup>7</sup>

Looking at the world at the beginning of the 20<sup>th</sup> century, it is not difficult to identify a core-periphery structure. A handful of European empires and their offshoots controlled 84% of the Earth's territory and the majority of its peoples, through colonialism and other imperial practices.<sup>8</sup> This core-periphery structure transcended political, military, economic and ideational spheres. European states claimed sovereignty over large parts of the world as part of their empires; they occupied the commanding heights of an increasingly integrated world economy, extracting surplus value and raw materials from all over the globe; and they rationalised and legitimised their dominance through a collection of racist and Eurocentric ideologies of supposedly 'universal' nature. Finally, their superiority in military technologies and other coercive capabilities made them virtually unchallengeable and, thus, able to crush resistance and maintain the functioning of the world order to their own advantage.<sup>9</sup>

Buzan and Lawson argue that this core-periphery structure fully took form in the 19<sup>th</sup> century as European powers managed to project their power for the first time on a truly global scale. During what they term the 'global transformation', the core states "created an international 'society of empires' that subordinated indigenous people, sanctioning their dispossession and, on occasion, their genocide . . . The power inequality at the heart of this emergent core-periphery relationship was unprecedented in world history."<sup>10</sup> During the height of imperialism in the 19<sup>th</sup> century,

[t]he core comprised most European states and their now independent settler colonies in the Americas. Its periphery was a mixture of colonies, largely absorbed into the sovereignty of their metropolises (most of Africa, South Asia and South-East Asia), and a handful of classical

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<sup>6</sup> See e.g. Raúl Prebisch, *The Economic Development of Latin America and Its Principal Problems*, (New York 1950).

<sup>7</sup> Buzan and Lawson, *The Global Transformation*, pp. 171-196.

<sup>8</sup> Geoffrey Parker, *The Military Revolution: Military innovation and the rise of the West 1500-1800*, 2<sup>nd</sup> edition, (Cambridge 1996), p. 5.

<sup>9</sup> Buzan and Lawson, *The Global Transformation*, pp. 171-196.

<sup>10</sup> *Ibid.*, p. 171.

agrarian powers still strong enough to avoid colonisation, but weak enough to be treated as unequal (China, Iran, Egypt, the Ottoman Empire and Japan).<sup>11</sup>

Other scholars trace the emergence of the core-periphery structure further back in time, claiming that it emerged already in the 16<sup>th</sup> century, as European powers started to colonise the Americas and establish outposts in Africa and Asia.<sup>12</sup> Furthermore, the reasons for Europe's ability to surge ahead and subordinate the rest of the world are still hotly debated. This thesis, however, does not seek to contribute this debate about the reasons for the 'Great Divergence' and when it took place.<sup>13</sup> The important point to note here is that a core-periphery structure had indisputably taken form in the second half of the 19<sup>th</sup> century. The concern of this thesis is to trace this structure forward in time, from the colonial era into the contemporary period.

Before proceeding, however, it is necessary to specify the economic features of the core-periphery structure. During colonial times, the states in the core imposed a division of labour on their colonies, which favoured the economic development of the core. Essentially, the core produced industrial goods and other high-value products for export to their colonies, as well as to other states in the core. The economies on the periphery, however, were focused on the production of primary products and raw materials for export to the core.<sup>14</sup> The imposition of this division of labour often involved the forceful dispossession of people on the periphery, as well as the de-industrialisation of existing economies as they were incorporated into the European led world economy.<sup>15</sup> The subordinate position of the periphery was further compounded by unfavourable terms of trade and finance imposed on them by the core.<sup>16</sup>

This iniquitous economic relationship did not sustain itself, but was maintained by various forms of political control and violence.<sup>17</sup> In the case of colonies, this simply took the form of direct political control from the metropolises and the crushing of any resistance.<sup>18</sup> In the case of peripheral societies that remained nominally independent, hierarchical economic

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<sup>11</sup> Ibid., p. 176.

<sup>12</sup> See e.g. Immanuel Wallerstein, *The Modern World-System I: Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century*, (Berkeley 1974/2011).

<sup>13</sup> Kenneth Pomeranz, *The Great Divergence: China, Europe, and the Making of the Modern World Economy*, (Princeton 2000)

<sup>14</sup> Vijay Prashad, *The Darker Nations: A People's History of the Third World*, (New York 2007), p. 62.

<sup>15</sup> Buzan and Lawson, *The Global Transformation*, p. 186.

<sup>16</sup> Ibid., p. 185.

<sup>17</sup> Anthony McGrew, "Organized Violence in the Making (and Remaking) of Globalization" in *Globalization Theory: Approaches and Controversies*, eds. Held and McGrew, (Cambridge 2007), pp. 15-24.

<sup>18</sup> Richard Gott, *Britain's Empire: Resistance, Repression and Revolt*, (London 2011).

relations were imposed through the use of force or the threat thereof. China, for example, was only brought into this core-periphery structure after its defeat in the Opium Wars.<sup>19</sup> The subsequent imposition of unequal treaties placed China squarely in a subordinate position to states in the core.<sup>20</sup>

This highly unequal international structure remained largely in place until the end of the Second World War. In the years that followed, however, the political structures of empire were gradually dismantled. European empires dissolved as the majority of the world's peoples broke free from foreign domination and formed their own states.<sup>21</sup> Western states had lost the ability to uphold the political structures of the core-periphery order and were increasingly unable to enforce their will through the use of force against societies in the South.<sup>22</sup> Furthermore, such practices were gradually delegitimised, as the principles of sovereign equality and self-determination were extended to societies in the global South.<sup>23</sup>

However, the core-periphery structure did not disappear with the dissolution of empire. Important features of it remained in place even as the core lost its political grip on societies on the periphery. In particular, the economic structures that had come into place during colonial times proved to be resilient. The newly independent states in the global South found themselves in a closely integrated world economy, the structure of which largely served the interests of the North.<sup>24</sup> In addition to the deep inequalities of wealth and standards of living that colonialism had left behind, the economies of the South were largely organised according to the interests of their former colonisers.<sup>25</sup> In spite of their formal political independence, many countries in the South found themselves in a subservient economic relationship with the North, from which it seemed difficult to break free.<sup>26</sup>

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<sup>19</sup> Giovanni Arrighi, *Adam Smith in Beijing: Lineages of the Twenty-First Century*, (London 2007), pp. 340-342. See also Immanuel Wallerstein, *The Modern World-System III: The Second Era of Great Expansion of the Capitalist World-Economy, 1730s-1840s*, (Berkeley 1989/2011), pp. 167-168.

<sup>20</sup> Odd Arne Westad, *Restless Empire: China and the World Since 1750*, (London 2012), pp. 41-46, 50-56. See also Jonathan D. Spence, *The Search for Modern China*, 2<sup>nd</sup> edition, (New York 1999), pp. 160-166.

<sup>21</sup> Len Scott, "International history 1900-99" in *The Globalization of World Politics*, 6<sup>th</sup> edition, eds. Baylis, Smith and Owens, (Oxford 2014), p. 53.

<sup>22</sup> Buzan and Lawson, *The Global Transformation*, pp. 198-219.

<sup>23</sup> Scott, "International history 1900-99", p. 53.

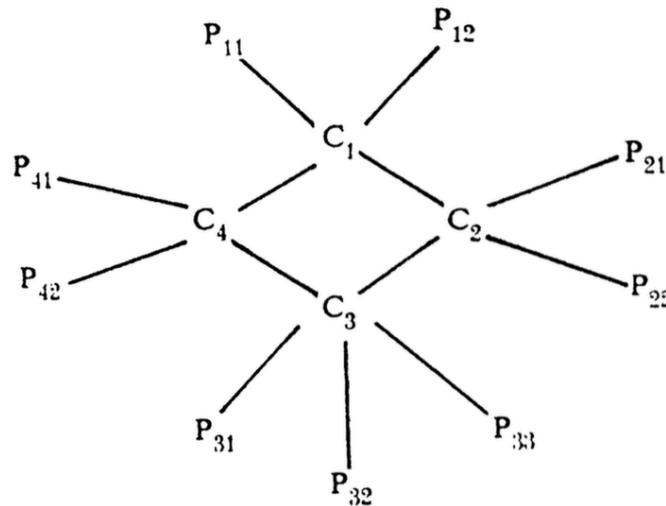
<sup>24</sup> Buzan and Lawson, *The Global Transformation*, p. 189.

<sup>25</sup> Wallerstein, *World-Systems Analysis*, pp. 55-56.

<sup>26</sup> Prashad, *The Darker Nations*, p. 62-74.

## 2.2. Patterns of Trade in a Core-Periphery Structure

In a landmark essay published in 1971, Johan Galtung laid out his “structural theory of imperialism”.<sup>27</sup> Among other things, the article introduced Galtung’s “feudal centre-periphery structure”, which explains how units interact in core-periphery system.<sup>28</sup> This model is of particular interest for this thesis, because it lays out the structure of international trade in a core-periphery structure.



**Figure 1:** Johan Galtung’s “feudal centre-periphery structure”. The model shows the structure of interaction in a core-periphery system. The “C”s represent states in the core, whereas the “P”s represent societies on the periphery.<sup>29</sup>

Figure 1 depicts Galtung’s feudal core-periphery model, showing the interaction structure between four core states and nine peripheral states. According to Galtung, the feudal interaction structure serves to protect the dominant position of the core by placing it in a ‘strategically strong position’ vis-à-vis the periphery. One of the economic features of this structure, is that core and peripheral states have a very different ‘concentration of trade partners’.

A Periphery nation should . . . have most of its trade with ‘its’ Center nation. In other words, empirically we would expect high levels of *import concentration* as well as *export concentration* in the Periphery, as opposed to the Center, which is more free to extend its trade

<sup>27</sup> Johan Galtung, “A Structural Theory of Imperialism” *Journal of Peace Research* 2 (1971).

<sup>28</sup> Galtung uses the terms “centre-periphery” instead of “core-periphery”. However, they essentially mean the same thing. In order to avoid confusion, this thesis will stick to the term core when discussing Galtung’s work.

<sup>29</sup> The figure is directly reproduced from Galtung’s original article: Galtung, “A Structural Theory of Imperialism” *Journal of Peace Research*, p. 89.

relations in almost any direction – except in the pure case, with the periphery of other Center nations.<sup>30</sup>

This different concentration of trade partners puts the peripheral states in a strategically weak position, as they are much more dependent on their trade with the core than the core is on its trade with them. This means that the states on the periphery often have no choice but to accept the terms of trade offered to them by the core state, as they simply have no alternative. The states in the core, on the other hand, have many different trade relationships with states in both the core and the periphery, and therefore do not face the same dilemma.

It is worth reminding that Galtung's model was devised to explain interactions in a world of empires and their colonies. His model explains interactions in a core-periphery structure where the states in the core have direct control over their peripheries and their economic decisions. As such, it is fairly accurate in describing the structure of international trade during colonial times, when countries on the periphery traded mostly with their metropolises in Europe.

However, when European empires began to dissolve in the mid 20<sup>th</sup> century, their former colonies could not be forced to continue trading exclusively with their former colonisers. By becoming independent, the states in the global South had presumably managed to escape the dilemmas posed by the feudal interaction structure. However, as previously noted, the economic features of the core-periphery structure proved to be more resilient than its political attributes. This was reflected in the continuation of core-periphery patterns of international trade in the decades following independence. States in the North remained at the centre of international trade, trading extensively with all regions of the world economy.<sup>31</sup> Indeed, in 1964 the top six economies in the core accounted for 70% of world trade.<sup>32</sup> Countries on the periphery, however, continued to have a relatively tight concentration of trade partners, exporting most of their products to the core.<sup>33</sup>

The main concern of this research is to assess the development of this trade structure in the period from 1980 to 2013. More specifically, the question is to what extent was the core-periphery structure of international trade was still in place at the beginning of the period, and how it has developed since. In order to assess this, Galtung's feudal interaction structure will

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<sup>30</sup> Ibid., p. 90 [emphasis in original].

<sup>31</sup> Roger J. Nemeth and David A. Smith, "International Trade and World-System Structure: A Multiple Network Analysis" *Review (Fernand Braudel Center)* 4 (1985): p. 525.

<sup>32</sup> John Toye, "Assessing the G77: 50 years after UNCTAD and 40 years after the NIEO" *Third World Quarterly* 10 (2014): p. 1761.

<sup>33</sup> Matthew C. Mahutga, "The Persistence of Structural Inequality? A Network Analysis of International Trade 1965-2000" *Social Forces* 4 (2006): p. 1867.

be used as an ideal-typical model of a core-periphery trade structure, albeit with one minor modification: the condition that each peripheral state just trade with *one* state in the core is dropped, and replaced by the condition that states on the periphery trade almost exclusively with the core *in general*. This modification has two reasons. Firstly, some peripheral states like China never had a single trade partner in the core that absorbed all of its exports. It would therefore be difficult to analyse the trade of those states in the strict version of Galtung's model. Secondly, it more closely resembles the reality faced by states in the global South at time of independence. They were structurally predisposed to engage in trade with the core, but were no longer forced to trade exclusively with one state. Instead they could diversify their partners to include other states in the core. However, the core is relatively small and cohesive compared to the periphery. This additional freedom therefore constituted only a minor improvement in the bargaining position of the periphery. The main problem remained, which was the almost complete lack of trade *between* states on the periphery, also known as South-South trade.

The core-periphery structure of international trade as it is defined in this research is, thus, characterised by the following features:

- A. *States in the core occupy a central position in the trade structure, trading extensively amongst themselves as well as with states on the periphery*
- B. *States on the periphery trade with states in the core but have little trade amongst themselves*

As in Galtung's original model, this places the states in the core in a strategically stronger position than the states on the periphery. It is therefore not surprising that states in the global South have actively tried to promote South-South trade since the time of independence in order to reduce their dependence on the core. To some extent, this research can be seen as an attempt to assess how successful they were in this endeavour.

### ***2.3. Core and Periphery in International Relations Theory***

Theories of International Relations treat the concepts of core and periphery in very different ways. While most scholars would accept the existence of a core and periphery – especially during colonial times – they have radically different assumptions about its importance. This section discusses how the three main strands of international relations theory approach the core-periphery structure and explains the theoretical framework that informs this research.

The most prominent tradition of IR theory, Realism, in fact has very little to say about core and periphery.<sup>34</sup> Realists view all states as essentially undifferentiated units in an international system characterised by anarchy.<sup>35</sup> The primary concern of all states is to safeguard their security vis-à-vis other states in order to secure their survival.<sup>36</sup> The only difference between states – and the only variable of consequence – is their ‘distribution of power’ in the international system.<sup>37</sup> As far as realists are concerned, there was no systematic difference between the newly independent states of the global South and their former colonisers in the North, except that the former tended to be weak states with few capabilities. There are no ‘common interests’ among developing countries in the international system by virtue of their common economic predicament.<sup>38</sup> Indeed, economic considerations are almost wholly absent from the framework of Realism, which considers them of secondary importance to security interests.<sup>39</sup> The concepts of core and periphery are therefore considered to be more or less irrelevant in the eyes of Realists. Perhaps they are valid descriptions to some extent, but they are not considered to be of consequence to the conduct of foreign affairs. However, as the following analysis will make clear, the economic legacies of colonialism were high in the agenda of many countries in the South in the years following independence. The inability of Realism to account for this economic dynamic of North-South relations, therefore makes it ill-suited for analysing the topic of this thesis.

Contrary to Realism, the theory of liberalism in IR puts a lot of emphasis on economic issues in explaining world politics. The foreign policies of states, according to liberalists, are heavily influenced by economic considerations. Economic interdependence, for example, is considered to reduce the likelihood of conflict between states.<sup>40</sup> However, in spite of this economic predisposition, the concepts of core and periphery tend to be conspicuously absent

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<sup>34</sup> Realist theory breaks down into several strands (e.g. classical realism, structural realism and neo-classical realism). However, they all share the same core elements and all share the same limitations when it comes to addressing core and periphery. For an overview of Realist theory, see: Jack Donnelly, “Realism” in *Theories of International Relations*, 4<sup>th</sup> edition, eds. Burchill et al. (Hampshire 2009).

<sup>35</sup> Kenneth Waltz, *Theory of International Politics*, (Reading 1979), p. 93.

<sup>36</sup> Kenneth Waltz, “International Politics is not Foreign Policy” *Security Studies* 1 (1996): p. 54.

<sup>37</sup> Tim Dunne and Brian C. Schmidt, “Realism” in *The Globalization of World Politics*, 6<sup>th</sup> edition, eds. Baylis, Smith and Owens, (Oxford 2014), pp. 103-106.

<sup>38</sup> Chris Alden, Sally Morphet and Marco Antonio Vieira, *The South in World Politics*, (Hampshire 2010), pp. 9-10.

<sup>39</sup> Seyom Brown, “The Higher Realism: A US Foreign Policy for Transcending the North-South Divide” in *North and South in the World Political Economy*, eds. Reuveny and Thompson, (Oxford 2008), p. 368.

<sup>40</sup> Scott Burchill, “Liberalism” in *Theories of International Relations*, 4<sup>th</sup> edition, eds. Burchill et al. (Hampshire 2009), pp. 65-68.

from liberal accounts of world politics as well.<sup>41</sup> Arguably, the reason for this is that liberalism tends to frame economic issues in overly benevolent terms.<sup>42</sup> In liberal theory, economic issues usually appear in the form of win-win cooperation and as a pacifying force in interstate relations.<sup>43</sup> This might give useful insights into cooperation between similar states – such as in European cooperation – but it is less helpful in explaining more iniquitous forms of economic relations, such as colonialism. Liberalism is therefore not very useful in understanding the persistence of core-periphery structures in the world economy and how they generate different interests between the North and the global South.

In order to address the weaknesses of the mainstream IR theories in explaining the postcolonial world, a collection of more radical theories emerged, often inspired by various strands of Marxist thought. These theories are generally grouped together under the name of ‘structuralism’ in International Relations theory.<sup>44</sup> The most influential structuralist framework – especially in the developing world itself – is arguably dependency theory and its subsequent elaboration in world-systems analysis. As discussed in the previous section, dependency theory originated in the analysis of Latin American economies and their inability to successfully develop along the lines of countries in North America and Western Europe.<sup>45</sup> Writers such as Raul Prebisch and Fernando Henrique Cardoso argued that the structure of the world economy was essentially rigged in favour of the countries that were already rich at the expense of the less developed countries.<sup>46</sup> Dependency theorists argued that underdevelopment in the global South was a direct result of their unequal relationship with the North, which, again, was the foundation of development in the North.<sup>47</sup>

In an important sense, dependency theory emerged as a direct attack on liberal modernisation theory, which claimed that all societies developed along the same trajectory towards economic development and modernity, provided that they adopted the right policies.<sup>48</sup> Dependency theory came to prominence as many in the global South were

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<sup>41</sup> Alden, Morphet and Vieira, *The South in World Politics*, pp. 10-11.

<sup>42</sup> Arie M. Kacowicz, “Globalization, Poverty, and the North-South Divide” in *North and South in the World Political Economy*, eds. Reuveny and Thompson, (Oxford 2008), p. 27

<sup>43</sup> Tim Dunne, “Liberalism” in *The Globalization of World Politics*, 6<sup>th</sup> edition, eds. Baylis, Smith and Owens, (Oxford 2014), pp. 116-120.

<sup>44</sup> Jill Steans et al., *An Introduction to International Relations Theory: Perspectives and Themes*, 3<sup>rd</sup> edition, (Harlow 2010), pp. 75-102.

<sup>45</sup> Prebisch, *The Economic Development of Latin America and Its Principal Problems*.

<sup>46</sup> Steans et al., *An Introduction to International Relations Theory*, p. 83.

<sup>47</sup> Andre Gunder Frank, *World Accumulation, 1492-1789*, (New York 1978).

<sup>48</sup> Walt Whitman Rostow, *The Stages of Economic Growth: A Non-Communist Manifesto*, (Cambridge 1960).

becoming increasingly disillusioned with the false promises of modernisation theory.<sup>49</sup> Immanuel Wallerstein argues that modernisation theory had falsely taken the nation state as its unit of analysis and therefore failed to understand how the structure of the world economy conditions the economic development of its constituent units.<sup>50</sup> Instead of viewing the global South as being simply a few steps behind the North in terms of development – as did modernisation theory – dependency theorists and world-systems analysts insisted that the economic fortunes of North and South were closely intertwined and could not be understood in isolation from each other.<sup>51</sup> The proper unit of analysis was what they called the ‘world-system’, which had a distinct economic structure, including a division of labour.<sup>52</sup> This division of labour was usually seen to have emerged during the colonial times but remained in place due to the structural constraints of the world economy.

This approach inevitably had major implications for the understanding of international relations. Issues of economic development, which had largely been left on the sidelines in most mainstream IR scholarship, were put squarely at the centre of analysis in the frameworks presented by structuralists.<sup>53</sup> Instead of viewing international relations simply in terms of the bipolar division of the Cold War, structuralists introduced a horizontal cleavage into the analysis of world politics; a cleavage that divided the world into North and South according to their structural position in the world economy. The class divisions of Marxist theory were essentially re-applied on a global scale, dividing the world into a dominant core and an exploited periphery.

There is substantial variation between structuralist theories of international relations. However, most of them are centred on the idea that the economic features of the core-periphery structure persisted after the formal end of colonialism and trapped the states of the global South in a subordinate position in the world economy. It is this observation that forms the basis of the theoretical framework of this research. This does not mean that the countries of the South *always* have the same interests in all matters concerning the world economy, nor that there is *always* a congruence of interests within the North. It does, however, mean that

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<sup>49</sup> Steans et al., *An Introduction to International Relations Theory*, p. 83.

<sup>50</sup> Immanuel Wallerstein, *World-Systems Analysis*, pp. 10-22.

<sup>51</sup> Andrew Linklater, “Marx and Marxism” in *Theories of International Relations*, 4<sup>th</sup> edition, eds. Burchill et al. (Hampshire 2009), pp. 123-124.

<sup>52</sup> Wallerstein, *World-Systems Analysis*, pp. 16-18.

<sup>53</sup> Andrew Linklater, “Historical Materialism” in *Theories of International Relations*, 4<sup>th</sup> edition, eds. Burchill et al. (Hampshire 2009), pp. 141-142.

the legacy of colonialism left a deep cleavage of interest in the world economy between the North and the South.

In order to further substantiate this theoretical framework, the following section reviews the literature on North-South economic relations in the post-independence era and how it reflects the arguments put forth by structuralist theories. Furthermore, it shows how a structuralist framework actively informed the worldview of many governments in the global South and informed their economic and foreign policies.

#### ***2.4. Structuralism in Action – The Rise of Third World Politics***

In 1955, the leaders of twenty-nine Asian and African countries gathered in Bandung in Indonesia for the Afro-Asian Conference to discuss the process of decolonisation and the structure of the postwar international order.<sup>54</sup> High on the agenda was the economic predicament of countries in the global South. The delegates were keenly aware of the constraints that the colonial legacy placed on their economies and sought ways to address them.<sup>55</sup> The final communiqué of the conference includes a lengthy chapter on economic and trade issues, which argues for the necessity of diversifying the South's export destinations and fostering the establishment of South-South trade.<sup>56</sup>

The Bandung Conference laid the foundations of subsequent organisations and groupings, in which countries of the global South worked together on matters concerning the world economy.<sup>57</sup> Most important in this respect was the establishment of the Non-Aligned Movement and the G77 group of developing countries in the United Nations.<sup>58</sup> In the 1970s the G77 called for a New International Economic Order (NIEO), which would better serve the needs and interests of the global South.<sup>59</sup> These demands were heavily influenced by the dependency scholar Raúl Prebisch, who was the secretary general of UNCTAD from 1964 to

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<sup>54</sup> Christopher J. Lee, "Between a Moment and an Era: The Origins and Afterlives of Bandung" in *Making a World After Empire: The Bandung Moment and its Political Afterlives*, ed. Lee, (Ohio 2010), pp. 10-12.

<sup>55</sup> Prashad, *The Darker Nations*, pp. 33-34.

<sup>56</sup> Asian-African Conference, *Final Communiqué of the Asian-African Conference*, Bandung, Indonesia, (April 24, 1955), Available at [[http://www.bandungspirit.org/IMG/pdf/anri-bandung\\_conference-final\\_communique.pdf](http://www.bandungspirit.org/IMG/pdf/anri-bandung_conference-final_communique.pdf)], (accessed May 20, 2015).

<sup>57</sup> Helen E. S. Nesadurai, "Bandung and the Political Economy of North-South Relations: Sowing the Seeds for Re-visioning International Society" in *Bandung Revisited: The Legacy of the 1955 Asian-African Conference for International Order*, eds. Tan and Acharya, (Singapore 2008), pp. 77-83.

<sup>58</sup> Adekeye Adebajo, "From Bandung to Durban: Whither the Afro-Asian Coalition?" in *Bandung Revisited: The Legacy of the 1955 Asian-African Conference for International Order*, eds. Tan and Acharya, (Singapore 2008), pp. 105-113.

<sup>59</sup> Mark T. Berger, "After the Third World? History, destiny and the fate of Third Worldism" *Third World Quarterly* 1 (2004): pp. 23-24.

1969.<sup>60</sup> According to Prebisch, the economic difficulties of the global South were directly linked to its

structural dependency on a capitalist core that controlled all levers of international decision-making and profitable economic activity, thereby appropriating much of the gains from international economic activity.<sup>61</sup>

An important part of this dependency was the structure of international trade discussed in the previous sections. The states in the South continued to trade almost exclusively with the North while having very limited trade with each other. This problem was widely understood, but difficult to overcome in practice.

As it turned out, the global South was largely unsuccessful in challenging the structures of power in the world economy during the Cold War years. Demands for a NIEO were flatly rejected by the North and the South had no leverage to back them up. The ‘Third World Project’ failed because it was based solely on political and ideological foundations. The South’s demands for a more equitable world order turned out to be just that: demands. And the South had little to back them up except for appeals to fairness.

However, the legacy of the Third World Project is important in many respects. It created a political platform for the South to collectively articulate and pursue their interests in the world economy.<sup>62</sup> It showed that structuralist theories of international relations, with their focus on the core-periphery cleavage, are not merely an academic exercise. They reflect the material circumstances of countries in the global South as they are understood and acted upon by their governments. In spite of the East-West cleavages of the Cold War, there was widespread agreement in the global South that it had common interests vis-à-vis the North in the global economy.<sup>63</sup> However, the simple North-South dichotomy of the Cold War era has become increasingly complicated in recent years – not least because of the growing influence of China in the global South.

## ***2.5. China and the Global South – Natural Ally or New Exploiter?***

The literature on China’s engagement with the rest of the global South tends to fall roughly into two categories. Firstly, there is the literature that sees China as a new ‘core’ in the global

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<sup>60</sup> UNCTAD (United Nations Conference on Trade and Development) was established at the insistence of countries in the global South in the 1960s and served as a kind of think-tank for South-South cooperation. See Toye, “Assessing the G77” *Third World Quarterly*, pp. 1761-1766.

<sup>61</sup> Nesadurai, “Bandung and the Political Economy of North-South Relations”, p. 81.

<sup>62</sup> *Ibid.*, p. 93.

<sup>63</sup> Alden, Morphet and Vieira, *The South in World Politics*, pp. 53-55.

South, assuming many of the same roles as the Western powers before it. Secondly, there is a more sympathetic account of China's involvement, which sees in it an emancipatory potential for the global South more generally. Interestingly, both of these views are to a large extent informed by a structuralist framework of analysis.

The former literature often argues that China's hunger for natural resources is the main driver behind its trade relations with the South.<sup>64</sup> Ian Taylor, for example, points out that China's imports from Africa largely consist of primary products and raw materials. In his opinion, China's role in the continent "[reifies] Africa's dependent status within the global political economy."<sup>65</sup> Writing about the BRICS countries more generally, Taylor claims that their "trade structures with Africa do not exhibit any exceptionalism and are comparable to the relationships established by the capitalist core since the colonial period".<sup>66</sup> Similar accounts have been offered of China's influence in Latin America.<sup>67</sup> Barbara Kotschwar admits that trade with China "helps to enhance geographical diversification" of the continent's trade, but it also "closely hues to Latin America's traditional trade patterns".<sup>68</sup> Indeed, it has been argued that China's influence has led to "deindustrialisation in the region" and "propelled Latin America into a series of resource curse outcomes."<sup>69</sup> According to these accounts, China is essentially assuming the same structural position in the world economy as the old states in the core. Instead of offering alternatives to the core-periphery structure left behind by colonialism, China is simply joining the ranks of the core. Of course no one is claiming that China is actually colonising parts of the global South.<sup>70</sup> But in an economic sense, the relationship exhibits the same structural features.

The other, more positive, account of China's influence in the global South, sees it as the harbinger of a new era in South-South cooperation.<sup>71</sup> According to this view, China offers the developing world an important alternative to the traditional powers of the North, both in terms of economic and political relations. Even if China largely imports primary products from the

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<sup>64</sup> David Zweig, "China and the World Economy: The Rise of a Trading Nation" (paper presented at the World International Studies Association, Ljubljana 2008), pp. 11-13.

<sup>65</sup> Ian Taylor, *Africa Rising? BRICS – Diversifying Dependency*, (Woodbridge 2014), p. 120.

<sup>66</sup> *Ibid.*, p. 147.

<sup>67</sup> Lowell Dittmer, "China and the Developing World" in *China, the Developing World, and the New Global Dynamic*, eds. Dittmer and Yu, (Boulder 2010), p. 9.

<sup>68</sup> Barbara Kotschwar, "China's Economic Influence in Latin America" *Asian Economic Policy Review* 9 (2014): pp. 206-207.

<sup>69</sup> *Ibid.*, p. 208.

<sup>70</sup> Taylor, *Africa Rising?*, p. 121.

<sup>71</sup> Giovanni Arrighi and Lu Zhang, "Beyond the Washington Consensus: A New Bandung?" in *Globalization and Beyond: New Examinations of Global Power and Its Alternatives*, eds. Shefner and Fernández-Kelly, (Pennsylvania 2011).

global South, at least it offers an alternative market to the North and keeps up their prices for the benefit of the South. Indeed, some would argue that the impressive growth figures of Africa in the last decade would not have been possible if it were not for the boom in commodity prices driven by Chinese demand.<sup>72</sup> Furthermore, authors of this inclination argue that China is still a developing country, and its interests in the world economy are therefore more closely attuned to those of other countries in the global South. This view is supported by developments in negotiation at the World Trade Organization, where developing countries, with China and India at the forefront, have been largely successful in forming a united front against the North on issues of international trade.<sup>73</sup>

This is also the image that the Chinese government wants to present of itself in its relationship with the global South.<sup>74</sup> China is keen to emphasise that its involvement in the developing world is about win-win cooperation between equals, and seeks to downplay any perceived power asymmetries in these relationships.<sup>75</sup> Indeed, Lowell Dittmer argues that China's 'developing country identity' has if anything intensified in recent years, as the ideological identities of the Cold War period have withered away.<sup>76</sup> Finally, as discussed in the following section, China has chosen to situate itself in the G77 group of developing countries at the United Nations. This group self-identifies as constituting the global South and representing its interests in matters of global economic governance.

This question of China's role in the global South is complex and can be addressed from many angles. This research hopes to contribute to it by casting light on one of its aspects: China's influence on the structure of international trade. If the former literature is correct and China is assuming the structural role of the core, then this should be reflected in international trade patterns. If China is reinforcing the dependent status of the South in the world economy, it should be expected that trade patterns in the South should continue to reflect a core-periphery structure when China is excluded from the South category. Conversely, if there is a

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<sup>72</sup> Julia Ebner, "The Sino-European race for African minerals: When two quarrel a third rejoices" *Resources Policy* 43 (2015): pp. 116-117.

<sup>73</sup> Ngaire Woods, "International political economy in an age of globalization" in *The Globalization of World Politics*, 6<sup>th</sup> edition, eds. Baylis, Smith and Owens, (Oxford 2014), p. 248.

<sup>74</sup> Carla P. Freeman, Introduction to *Handbook on China and Developing Countries*, ed. Freeman, (Cheltenham 2015), pp. 1-5.

<sup>75</sup> Wenran Jiang, "China's Emerging Strategic Partnerships in Africa" in *China into Africa: Trade Aid and Influence*, ed. Rotberg, (Washington D.C. 2008), pp. 51-53. See also Ian Taylor and Yuhua Xiao, "A Case of Mistaken Identity: "China Inc." and Its "Imperialism" in Sub-Saharan Africa" *Asian Politics & Policy* 4 (2009): p. 713.

<sup>76</sup> Dittmer, "China and the Developing World", p. 1. On China's 'Third World identity', see also Gerald Chan "Capturing China's International Identity: Social Evolution and Its Missing Links" *The Chinese Journal of International Politics* 2 (2014): pp. 266-267.

more genuine growth of South-South trade taking place, it should be expected that trade patterns move away from the core-periphery structure even as China is excluded from the South group. According to this hypothesis, China would merely be first among equals in a new international trade structure, in which the South is starting to break its dependence on the North. The methodological task of assessing these alternative hypothesis will be explained in more detail in the following chapter.

However, of course there is some middle ground between these two poles of analysis.<sup>77</sup> Many would argue, for example, that China belongs neither squarely in the South nor in the North, and that its interests lie somewhere in between. Indeed, the same could be said about a number of other ‘emerging economies’. China’s influence would then be a mixture of transformation and reinforcement of the international trade structure. The two aforementioned hypotheses should therefore not be seen as binary choices. Instead they occupy the opposite ends of a continuum, along which it is possible to analyse China’s influence on the core-periphery trade structure.

## ***2.6. Definitions of Core and Periphery***

Before proceeding, it is necessary to clarify the exact definitions of core and periphery, as they will be employed in the thesis. As was explained in section 2.1, core and periphery signify positions of supremacy and subordination in the world economy, which emerged during colonial times and persisted into the contemporary era. During the Cold War, the peripheral countries were commonly referred to as the ‘Third World’. More recently, however, the term ‘global South’ has become the main descriptor of the developing world, as opposed to the ‘North’, which signifies the states in the core. Throughout this thesis, the terms ‘core’ and ‘periphery’ will be used interchangeably with ‘global North’ and ‘global South’.<sup>78</sup>

However, there is no self-evident way to decide precisely which countries do and do not belong in each of these categories. In this thesis the following categorisation is used: the North is defined as those 36 states that are classified as ‘advanced economies’ in the IMF’s *World Economic Outlook* classification system.<sup>79</sup> This category includes all of the former

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<sup>77</sup> Jesse Salah Ovidia, “Accumulation with or without dispossession? A ‘both/and’ approach to China in Africa with reference to Angola” *Review of African Political Economy* 136 (2013): pp. 233-234.

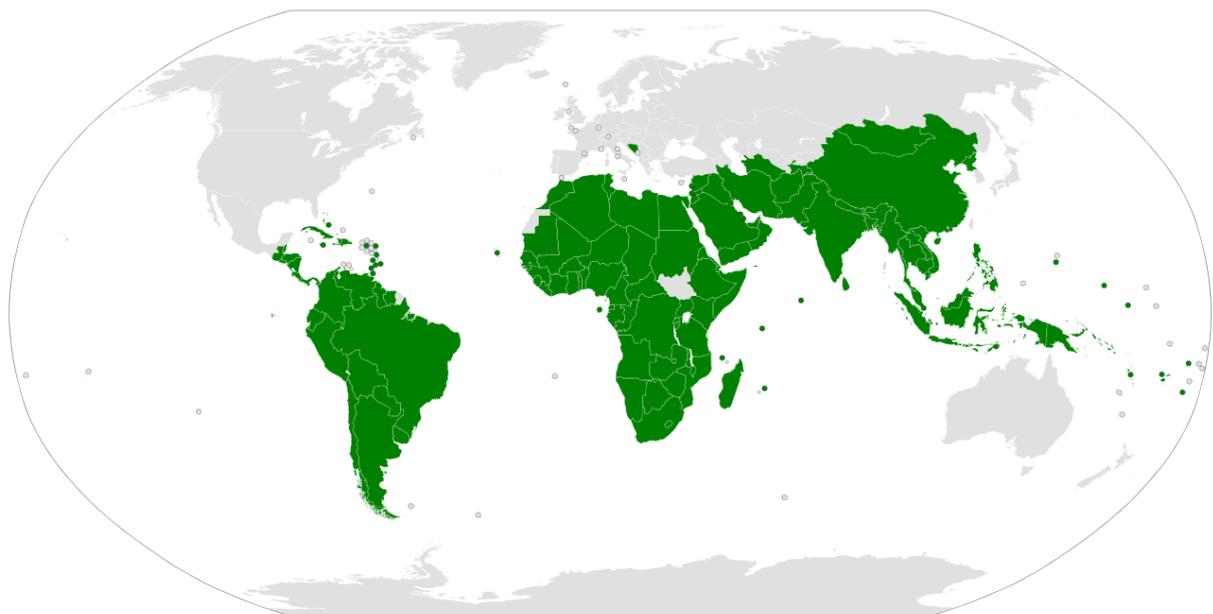
<sup>78</sup> The geographical meaning of North and South should not be taken too literally, although they are good approximations. Countries like Australia and New Zealand, for example, belong in the ‘North’ category whereas Mongolia belongs in the ‘South’ category.

<sup>79</sup> The classification system develops over time but the one used here is from the 2014 edition. It can be found in: International Monetary Fund, *World Economic Outlook: Legacies, Clouds, Uncertainties*, (Washington DC 2014), pp. 162-165.

colonial powers along with other states that have similar economic characteristics at the top of the world's economic hierarchy. The global South, on the other hand, is defined by current membership in the G77 group of developing countries at the United Nations. As noted in the previous section, the G77 is the institutional embodiment of the global South in matters concerning the world economy. It currently includes 134 countries.<sup>80</sup> As it states in its official aims:

The Group of 77 . . . provides the means for the countries of the South to articulate and promote their collective economic interests and enhance their joint negotiating capacity on all major international economic issues within the United Nations system, and promote South-South cooperation for development.<sup>81</sup>

The main advantage of using this classification is that members of the G77 define themselves as belonging to the global South and having common economic interests by virtue of that.



**Figure 2:** Members states of the G77.<sup>82</sup>

Taken together, these two categories make up the bulk of the world's countries.<sup>83</sup> However, there are some countries that belong to neither category, most notably Russia, Mexico and

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<sup>80</sup> The full list of current members can be found at the official website of the G77: [<http://www.g77.org/doc/members.html>], (accessed, March 9, 2015).

<sup>81</sup> Group of 77, *About the Group of 77*, Available at [<http://www.g77.org/doc/>], (accessed May 6, 2015).

<sup>82</sup> Map created by Kyat02. Available at [[https://en.wiki2.org/wiki/File:G\\_77.svg](https://en.wiki2.org/wiki/File:G_77.svg)], (accessed May 7, 2015).

<sup>83</sup> In fact, Singapore belongs to both categories. It was the only overlap between the categories and was left that way in the analysis.

Turkey, as well as those European states that do not make it into the ‘advanced economies’ category.<sup>84</sup>

## ***2.7. Formulating the Hypotheses***

Based on the theory and literature reviewed in this chapter, the research questions that were posed in the introduction have been formulated into three interrelated hypotheses. They can be spelled out as follows:

***Hypothesis 1:*** *World trade was still characterised by a core-periphery structure during the early part of the research period*

By this it is meant that the core-periphery trade structure laid out in section 2.2 is still visible in the patterns of international trade during the early part of the research period. States in the core are dominant in the trade structure and there is limited South-South trade.

***Hypothesis 2:*** *The core-periphery trade structure underwent fundamental changes during the period from 1980 to 2013*

The core-periphery structure gradually gives way to a new trade structure as the balance of the world economy starts to shift.

***Hypothesis 3:*** *The rise of China in the world economy played a key role in the transformation of the international trade structure*

Provided that hypothesis one and two are correct, hypothesis three postulates that the rise of China was of prime importance in bringing about the transformation of the international trade structure.

## ***2.8. Ontology and Epistemology***

Before proceeding to the empirical chapter, it is in order to clarify the ontological and epistemological assumptions on which the research is based. As discussed in section 2.3, this research is largely informed by structuralist theories of international relations. As with other traditional strands of Marxist thought, these theories tend to reflect a ‘foundationalist’ ontology and a ‘realist’<sup>85</sup> epistemology.<sup>86</sup> So does this research.<sup>87</sup> By foundationalism it is

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<sup>84</sup> With the exception of Bosnia and Herzegovina, which is the only G77 member in Europe.

<sup>85</sup> The term ‘realism’ as an epistemological position is not to be confused with the theory of ‘Realism’ in the International Relations discipline.

meant that the researcher posits that there is a ‘real world’ out there that exists independently of our knowledge of it.<sup>88</sup> In other words, there is such a thing as ‘objective reality’ and the purpose of social science is to generate knowledge about that reality.

However, unlike positivists, this researcher does not claim that there is an unproblematic relationship between the ‘real world’ and our attempts to understand it.<sup>89</sup> The social world cannot be reduced to observable and quantifiable phenomena; it is also made up of ‘invisible structures’ – such as class and patriarchy – that must be taken into account in order to understand the social world.<sup>90</sup> In this research, these invisible structures appear, for example, in the form of a ‘core-periphery trade structure’. Although the existence and form of this structure is assessed through the evaluation of empirical data (international trade statistics), the structure *as such* is not directly visible. The individual data points come together to form a ‘structure’, only when viewed through the lens of a theoretical framework that presupposes its existence in the first place. And presumably they could be rearranged into a million other formations when viewed through different theories. Nevertheless, this core-periphery structure is considered ‘real’ and is given causal powers in the analysis of the international system. The same could be said about the concepts of ‘core’ and ‘periphery’ or ‘North’ and ‘South’, which are used throughout the thesis. These are theoretical abstractions that are used to describe an intricate material reality. Nevertheless, the assumption of their existence provides the best possible explanation for the realities that are observed.<sup>91</sup>

Furthermore, epistemological realists recognise the importance of ideational structures in constituting social reality. The realist remains faithful to the idea that there is an objective reality that has causal powers in society, while at the same time acknowledging that these causal powers are always mediated through social constructions.<sup>92</sup> This is why section 2.4 on Third World politics is relevant to this thesis. It demonstrates that the material reality of the core-periphery cleavage in the world economy coexisted with a corresponding ideational structure that informed the actions of key actors. The important point to note here is that

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<sup>86</sup> Paul Furlong and David Marsh, “A Skin Not a Sweater: Ontology and Epistemology in Political Science” in *Theory and Methods in Political Science*, 3<sup>rd</sup> edition, eds. Marsh and Stoker, (Hampshire 2010), p. 204.

<sup>87</sup> There are a number of different ‘classification schemes’ when it comes to ontology and epistemology. In other schemes ‘foundationalism’ is commonly referred to as ‘objectivism’ or ‘realism’. The terminology used here is based on the classification scheme presented in: Furlong and Marsh, “A Skin Not a Sweater”, pp. 184-211.

<sup>88</sup> Furlong and Marsh, “A Skin Not a Sweater”, p. 190.

<sup>89</sup> Mats Alvesson and Kaj Skoldberg, *Reflexive Methodology: New Vistas for Qualitative Research*, 2<sup>nd</sup> edition, (Los Angeles 2009), p. 43.

<sup>90</sup> Furlong and Marsh, “A Skin Not a Sweater”, p. 192.

<sup>91</sup> *Ibid.*, p. 204.

<sup>92</sup> Alan Bryman, *Social Research Methods*, 4<sup>th</sup> edition, (Oxford 2012), p. 29.

neither material reality nor ideational structures are seen as being in total control. They stand in a dialectical relationship where each constrains and influences the other.

This research uses empirical data to analyse the development of the core-periphery structure. However, the story being told is about more than the empirical reality of that structure. It is also about the social construction of that reality and how key actors have reflected on their circumstances and set out to change them.

### 3. Empirical Work and Methodology

This chapter introduces the gravity model of international trade and how it will be used to assess changes in the structure of international trade over the last few decades. The chapter starts by explaining the principles of the gravity model and goes on to explain how it is used in this particular research. Next, the process of collecting the data and compiling it into a gravity model database is explained. Finally, the chapter explains how the data was processed, how the gravity model was estimated and how the results were obtained.

#### 3.1. The Gravity Model

The gravity model of international trade was first introduced in 1962 by the Dutch economist Jan Tinbergen.<sup>93</sup> It has since been widely used in research on international political economy.<sup>94</sup> In its most basic form, the gravity model uses two different variables to predict the quantity of trade between two countries. These variables are the economic weight of the countries involved (as measured by their GDP) and the distance between them (usually measured as the geographical distance between their capitals). A basic gravity model takes the following form:<sup>95</sup>

$$\text{Trade value} = \beta \times \frac{\text{GDP}_{\text{importer}} \times \text{GDP}_{\text{exporter}}}{\text{Distance}}$$

The logic behind the gravity model is that countries are likely to trade more with each other if their economies are larger. For the importing country, the size of its GDP will provide be a reasonable estimate for the size of its market, and the larger that market is, the more this country is likely to import. Similarly for the exporting country, the size of its GDP serves as an estimate of the economic activity of the country, including the range and volume of products it produces. The larger the economy, the more it is likely to export in absolute terms. Distance on the other hand serves as a proxy for transportation costs as well as a number of

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<sup>93</sup> Jan Tinbergen, *Shaping the World Economy: Suggestions for an International Economic Policy*, (New York 1962).

<sup>94</sup> Edward D. Mansfield, "Quantitative Approaches to the International Political Economy" in *Models, Numbers, and Cases: Methods for Studying International Relations*, eds. Sprinz and Wolinsky-Nahmias, (Ann Arbor 2004), p. 172.

<sup>95</sup> This simplified gravity model is adapted from Paul Krugman and Maurice Obstfeld, *International Economics: Theory & Policy*, (Boston 2009), p. 14. The  $\beta$  symbol is a constant.

other impediments to trade. The greater the distance between two countries, the less they are likely to trade with each other according to the model.<sup>96</sup> In other words, distance between countries is inversely related to the value of trade between them, hence why the GDP values are divided by distance.

However, the relationship between the variables does not take a completely linear form. The gravity model is therefore usually estimated in a log-linear form, using the natural logarithm of each variable:<sup>97</sup>

$$\text{Ln}[\textit{Trade value}] = \beta + \beta_1 \text{Ln}[\textit{GDP}_{\textit{importer}}] + \beta_2 \text{Ln}[\textit{GDP}_{\textit{exporter}}] + \beta_3 \text{Ln}[\textit{distance}]$$

Of course there are an infinite amount of additional variables that can influence the amount of trade between any two countries. However, these two variables tend to explain quite a good deal of the variation in trade volumes between different pairs of countries. Indeed, the very purpose of the gravity model is not to *fully* explain the amount of trade between countries, but to serve as a reasonable *baseline*, which can be used to assess the influence of other variables.

For example, the most common way of using the gravity model in research on international political economy is to start by compiling a dataset that includes trade volumes between each country pair, the size of their economies and the distances between them. These variables (in their log-linear form) are then used to estimate a gravity model. The model will assign a certain weight to each variable to establish the best possible fit. A simple gravity model like this will usually provide an R<sup>2</sup> explanatory power of around 50-70%.<sup>98</sup>

The next step is then to add an additional variable into the model and see if it adds any statistically significant explanatory power to the model. For example, if one is interested in assessing the influence of defence alliances on volumes of international trade, the next step would be to include a dummy variable in the model that indicates whether any two countries are together in a defence alliance or not. The model would then be estimated again in order to see if the military alliance variable added any value the predictive powers of the model and whether the variable of interest was statistically significant. Indeed, this is more or less what

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<sup>96</sup> Ibid., pp. 15-16.

<sup>97</sup> Mansfield, "Quantitative Approaches to the International Political Economy", p. 172.

<sup>98</sup> The R<sup>2</sup> value measures how much of the variation in the dependent variable (in this case volume of trade) can be explained by the independent variables included in the model.

Joanne Gowa and Edward D. Mansfield did in their study of the affects of alliances on international trade.<sup>99</sup>

The purpose of this explanation is to show how a gravity model can serve as a useful baseline when it comes to assessing the influence of other features in the global economy that are of interest. Without such a baseline, it would be very difficult to make plausible claims about the influence of certain variables such as defence alliances. Just by knowing which countries are together in an alliance and how much they trade with each other, does not really provide a solid basis for assessing whether – and how much – the alliance matters when it comes to explaining trade values. However, by using a gravity model with data from multiple different country pairs, it is possible to control for standard explanatory variables such as size and distance, while zooming in on the particular feature of interest. In other words, the gravity model allows for a reasonable estimation of whether something matters, *other things being equal*.

### ***3.2. The Gravity Model and International Trade Patterns***

In this thesis, the gravity model will be used to assess patterns of international trade and how they have changed over time. As in the example explained in the previous section, a standard gravity model using GDP sizes and distance will be estimated and used as a baseline for the inquiry.

As was explained in the theoretical chapter, the traditional patterns of trade in a core-periphery structure are disproportionately concentrated on the economies in the core. Economies in the core tend to trade extensively with each other as well as with economies on the periphery. However, trade *between* countries on the periphery is limited. To some extent this is to be expected, given that states in the core are wealthy and have large GDPs, while states on the periphery have smaller economies and are also more dispersed around the planet geographically. However, by using the gravity model it is possible to assess whether international trade is concentrated in the core *in excess* of what can be explained by the standard factors of GDP size and geographical distance. Similarly, it also assesses whether trade between countries on the periphery is *less than* would be expected from a standard gravity model.

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<sup>99</sup> Joanne Gowa and Edward D. Mansfield, “Power Politics and International Trade” *American Political Science Review* 2 (1993).

In order to make plausible claims about the existence of a certain ‘trade structure’, as this thesis does, it is necessary to show that international trade patterns differ *systematically* from the predictions of a simple gravity model. The gravity model, thus, provides a baseline, against which actual trade values will be compared. The residuals can then be aggregated in order to detect systematic variations. By doing this, the research establishes a more solid foundation for claiming that there is such a thing as a core-periphery trade pattern in the first place. And more importantly, it enables the analysis of whether – and how – this pattern is changing over time.

### ***3.3. Collecting the Data and Constructing the Database***

When it comes to doing research with a gravity model, the first thing that is needed is a database with all the necessary data. There are several ready-made gravity model databases accessible online. However, all of these databases turned out to be too limited in their geographical and/or temporal coverage for the purposes of this research. It was therefore decided to compile a gravity model database from scratch.

#### *Trade Statistics*

The first step was to find data on international trade statistics between countries. This data is available in the Direction of International Trade Statistics (DOTS) database from the International Monetary Fund (IMF).<sup>100</sup> This database was obtained from the IMF’s eLibrary and used as the base for the gravity model database. The database includes one-directional trade flows between each country pair for each year. By one-directional trade flows it is meant that exports from Germany to Sweden, e.g., represent one case and exports from Sweden to Germany represent another. Modern gravity models are always estimated in this way rather than looking at the trade relationship as a whole.<sup>101</sup> The DOTS database provides several different indicators on both imports and exports. However, import figures are generally considered more reliable for the purposes of constructing a gravity model.<sup>102</sup> The indicator that was chosen for this project was therefore the value of imports, free on board (FOB), in current US dollars.<sup>103</sup> FOB values are preferred to CIF (cost of insurance and

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<sup>100</sup> International Monetary Fund, *Direction of International Trade Statistics (DOTS) database*. Available at: [<http://data.imf.org/?sk=9D6028D4-F14A-464C-A2F2-59B2CD424B85>], (accessed February 13, 2015).

<sup>101</sup> Ben Shepard, *The Gravity Model of International Trade: A User Guide*, (Bangkok 2013), p. 15.

<sup>102</sup> World Trade Organization and UNCTAD, *A Practical Guide to Trade Policy Analysis*, (N.p. 2012), p. 119. Available at: [<http://vi.unctad.org/tpa>], (accessed February 13, 2015).

<sup>103</sup> Current values are always used in gravity model research. See *ibid.*, p. 119.

freight) values, because the latter include costs that are correlated with distance. This may lead to simultaneous equation biases, as the same effect is being captured by more than one variable in the model.<sup>104</sup> The database was downloaded in CVS format and then converted to SAV format for processing in the SPSS statistical software application.

The database includes data from 1947 to 2013 with a total of 1.418.251 cases. However, data on developing countries is rather sparse in the early decades of the database. It was therefore decided to limit the inquiry to the period from 1980 onwards. This left the database with 939.957 cases. Next, all cases with missing values or recorded values of zero were eliminated.<sup>105</sup> This left the database with 599.260 cases.

### Gross Domestic Product Figures

The next step was to find GDP figures for each country for each year and add them to the database. These figures were obtained from the IMF's World Economic Outlook Database.<sup>106</sup> The chosen indicator was gross domestic product, current prices in US dollars.<sup>107</sup> The database was downloaded in excel format from the IMF's website and then converted into SAV format for SPSS processing.

Next, the GDP database was merged into the trade statistics database. This had to be done in several steps as the databases are built in different ways and the trade statistics database has a lot more cases. Furthermore, for each case in the trade statistics database, two different GDP variables needed to be added to the case: one for the exporting country and one for the importing country. After completing this, each case in the database now included the value of one-directional trade between each country pair for each year, as well the GDP figures for both countries in that year.

However, GDP figures for some countries were missing for some years. This is usually due to civil war or for polities that are not fully independent, like some small Caribbean and Pacific island states. Such cases cannot be included in the gravity model and are therefore eliminated. This left the database with 502.364 cases.

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<sup>104</sup> Luca De Benedictis and Daria Taglioni, "The Gravity Model of International Trade" in *The Trade Impact of European Union Preferential Policies: An Analysis Through Gravity Models*, eds. De Benedictis and Salvatici, (Heidelberg 2011), p. 73.

<sup>105</sup> This is common practice in gravity model research, especially when many of the zero values reflect missing values. For a discussion see: WTO and UNCTAD, *A Practical Guide to Trade Policy Analysis*, p. 112-113.

<sup>106</sup> International Monetary Fund, *World Economic Outlook Database*, (October 2014 edition), Available at: [<http://www.imf.org/external/pubs/ft/weo/2014/02/weodata/index.aspx>], (accessed February 13, 2015).

<sup>107</sup> Again, this indicator was chosen to comply with standard practice in gravity modelling. For a discussion see: Shepard, *The Gravity Model of International Trade*, p. 15.

### Figures for Distance

The final variable that needed to be added to the database was that of distance between countries. This data was obtained from the CEPII *GeoDist Database* by Mayer and Zignago.<sup>108</sup> The *GeoDist Database* includes two different files: one with country specific information and the other with dyadic information such as distances between countries.<sup>109</sup> The dyadic database was downloaded in DTA format and converted to SAV format for SPSS processing. The chosen indicator was the ‘distcap’ variable, which measures the geographical distance between the capital cities of each country pair.

This file was then merged into the original database. Because the information is dyadic, each case had to be merged according to two different variables: the two countries concerned. As before, there were missing values for some cases, which subsequently had to be eliminated. However, these were surprisingly few. After merging the files, the database was left with 498.474 valid cases.

### Database Summary

- Annual one-directional trade flows between all countries, values in current US dollars
- Gross domestic produce in current US dollars for each country for each year
- Distance between the capital cities of each country pair in kilometres
- Temporal coverage: 1980-2013
- Number of cases: 498.474

### **3.4. Data Processing**

As was discussed in section 3.1, gravity models are usually estimated using the natural logarithms of all the variables. The next step was thus to recompute all variables into their natural logarithm. Furthermore, all cases were coded with dummy variables to indicate whether the exporting and importing countries belonged to the ‘North’ or ‘South’ categories, as they were defined in section 2.6. These dummy variables were then used to construct more specific dummy variables, which indicated the type of trade relationship for each case (e.g. North-North, South-South, North to South etc.).

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<sup>108</sup> Thierry Mayer and Soledad Zignago, *GeoDist Database*, CEPII, (2011), Available at: [[http://www.cepii.fr/CEPII/en/bdd\\_modele/presentation.asp?id=6](http://www.cepii.fr/CEPII/en/bdd_modele/presentation.asp?id=6)], (accessed February 13, 2015).

<sup>109</sup> See also: Thierry Mayer and Soledad Zignago, *Notes on CEPII's distances measures: The GeoDist database*, CEPII Working Paper (2011-25).

### ***3.5. Adding Additional Variables to the Model?***

In gravity model research, it is common to add additional variables to the model in order to specify it further. Some older studies used demographic variables such as population or GDP per capita, in addition to absolute GDP. However, this practice has been generally discredited in the gravity literature and has therefore fallen out of use.<sup>110</sup> A more common practice is to include various dummy variables to account for factors such as common language for the country pair, a previous colonial relationship or membership of economic bodies such as the European Union, the World Trade Organisation or NAFTA.

However, for the purposes of this research, it was decided to stick to the raw gravity model – only GDP size and distance – instead of specifying the model further. The reason is that the purpose of this research is to detect large patterns over time rather than zooming in on a particular explanatory variable. This aim is somewhat different from much of the other work in the gravity literature, which tends to be geared towards testing certain variables such as the impact of free trade agreements (FTAs) or military alliances. For example, if the purpose of the research is to test the effect of a military alliance in trade values, it makes sense to include other dummy variables – such as FTAs – in order to minimise the risk of spurious correlation. In other words, when the purpose is to test a *specific* variable, it can be useful to add other variables to the model to make sure that the observed relationship is not due to a third, unobserved variable.

However, when the purpose of the research is to analyse large patterns over time – such as changes in the core-periphery trade structure – these additional dummy variables are often simply a part of the story that needs to be told. Colonial legacies, for example, do indeed influence trade patterns today. And this is an important part of the dynamics that this research is about. It would therefore be a mistake to ‘explain away’ this kind of influence through a dummy variable and thereby make it invisible in subsequent analysis.

### ***3.6. Single or Multiple Models?***

There are two possible ways to estimate a gravity model for a long time period. One possibility is to estimate a single model for the whole dataset, covering all years. The other possibility is to estimate a separate model for each year.

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<sup>110</sup> Shepard, *The Gravity Model of International Trade*, p. 15.

The advantage of using a single model for the whole period is that it makes comparisons between years more straightforward. It produces a single model that is meant to explain variations in trade value for the whole period. However, this method also has several methodological disadvantages. Firstly, it violates the assumption of regression analysis that each observation should be independent. Trade flows between the same pairs of countries in different years are clearly not independent in this way. Furthermore, estimating a single model for the whole period usually introduces autocorrelation into the model. This can be somewhat alleviated by introducing a time variable into the model. However, this is a problematic solution, as a great deal of the explanatory value of the model then becomes simply a factor of time. The value of trade in current US dollars has increased immensely from 1980 to 2013, and the time variable will therefore be highly correlated with trade value and explain a lot of the variation in the dataset. This is problematic if the purpose of the research is to track changes over time. Actual changes in the world's trading structure might be 'explained away' by the time variable and thus become invisible in the analysis.

Finally, forcing a single model on the whole dataset inevitably produces a poorer fit of the model than if a separate model is estimated for each year. Using a single model assumes that the effect of the explanatory variables – such as distance – remains constant over time, whereas in reality the effect might change. Also, the value of world trade was around 1,5 trillion dollars in 1980, whereas it was 18,4 trillion dollars in 2013.<sup>111</sup> It would be problematic to expect a single model to provide a good fit for such dramatic variations over time.

It was therefore decided to estimate a separate model for each year. This method alleviates most of the problems that are associated with the single model. Firstly, it is much more plausible to claim that each observation is independent. Secondly, autocorrelation and other problems related to the time factor are eliminated. Furthermore, it produces a better fit for the model. It allows the explanatory variables of GDP size and distance to explain as much as possible for each year, instead of forcing a questionable average on the whole dataset. Finally, by using separate models for each year it is possible to code some of the research questions into dummy variables and test them directly by putting them into the regression. This method is explained in more detail in section 3.9.

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<sup>111</sup> United Nations, *2013 International Trade Statistics Yearbook*, volume II, (New York 2014), p. 3

### ***3.7. Estimating the Simple Gravity Models***

First, a simple gravity model was estimated for each year in the dataset using ordinary least square regression (OLS). As previously discussed, the model uses GDP size and geographical distance as independent variables, and one-directional trade value as the dependent variable. The models are estimated by using the natural logarithm of each variable. The model, thus, takes the following form:

$$\text{Ln}[\textit{Trade value}] = \beta + \beta_1 \text{Ln}[\textit{GDP}_{\textit{importer}}] + \beta_2 \text{Ln}[\textit{GDP}_{\textit{exporter}}] + \beta_3 \text{Ln}[\textit{distance}]$$

The time period is 34 years (1980-2013) and therefore there were 34 models estimated. All three independent variables were significant for all of the 34 years and all pointed in the expected directions. The GDP size of both exporting and importing countries were positively related to the value of trade, whereas distance was inversely related to the value of trade. All three variables were statistically significant at the 99,9% level for all of the 34 models. Furthermore, the coefficients for each variable were remarkably stable over time, although there is a steady trend of a decreasing constant over time. Finally, all 34 models provided relatively similar amounts of explanatory value: the  $R^2$  statistic ranged between 0,57 at the lowest to 0,66 at the highest, with an average of 0,62 and a standard deviation of 0,02. The full overview of each model can be found in appendix 1.

### ***3.8. Analysing Standardised Trade Residuals (Indicator 1)***

As already mentioned, the  $R^2$  statistic for the models was around generally around 0,62, which means that the models explain around 62% of the variation in trade value between countries. However, it is the remaining 38% variation that is really of interest. If the hypothesis is correct, and there is an identifiable core-periphery trade structure in the world, then this structure should be detectable in the remaining variation in the data. In other words, the 38% variation that is left unexplained by the gravity models should not be completely randomised but should show a systematic pattern.

In order to look for these patterns, the residuals and the standardised residuals for each case in the dataset were saved after estimating the gravity models.<sup>112</sup> These residuals can

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<sup>112</sup> A residual is the actual value of trade for each case minus the expected value of trade according to the model. Therefore, if the trade is more than expected the residual is positive, but if trade is less than expected the residual is negative. The standardised residuals are simply the residuals divided by their standard deviation. This makes them easier to interpret and compare between years.

subsequently be aggregated and compared between countries and groups of countries. For example, the standardised residuals for all cases that represent South-South trade can be calculated into an average for each year. By doing this, it is possible to see whether South-South trade is generally more or less than would be expected from the traditional factors of the gravity model, and how this develops over time. Similar aggregations are carried out for other types of trade relationships. The analysis of standardised trade residuals is the first of three different types of indicators that the results are based on.<sup>113</sup>

### ***3.9. Detecting Patterns with Dummy Variables (Indicator 2)***

An alternative method to identify patterns of an international trade structure is to code the expected pattern into dummy variables and add them into the regression. For example, all cases were coded with a dummy variable that identified whether it was a case of South-South trade or not. If both the exporter and importer were a country of the South, the variable took the value of '1', otherwise it took the value of '0'. This variable was then added to the regression analysis and the models estimated again. It is then possible to see whether the dummy variable adds any explanatory value to the model and whether its impact is statistically significant. Furthermore, it is possible to look at the coefficient (the slope) of the dummy variable for each year and see if it changes over time. The gravity model that is estimated with this method, thus, takes the following form:

$$\text{Ln}[TV] = \beta + \beta_1 \text{Ln}[GDP_{\text{importer}}] + \beta_2 \text{Ln}[GDP_{\text{exporter}}] + \beta_3 \text{Ln}[dist] + \beta_4 [\text{dummy}]$$

Similar dummy variable coding was carried out for other trade relationships, such as North-North trade, South-North trade and North-South trade. For each of these dummy variables, a separate regression analysis was carried out that included only the three traditional independent variables in addition to the dummy variable. The reason is that these dummy variables are to some extent mirrors of each other and will therefore be explaining the same things, albeit in opposite directions. It is therefore better to estimate separate models for each dummy variable, whilst being aware that the resulting coefficients are to some extent the

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<sup>113</sup> This method of analysing residuals over time was partly inspired by an article by Barma et al., although they use a somewhat different methodology in many ways. Naazneen Barma et al., "A World Without the West? Empirical Patterns and Theoretical Implications" *Chinese Journal of International Politics* 4 (2009): pp. 531-532.

reflections of the same pattern. The full overview of these models can be found in appendices 2 and 3.

### ***3.10. Filling Out the Picture with Absolute Values and Percentages (Indicator 3)***

Finally, in order to draw up a fuller picture, the analysis of the previous two indicators is complimented by statistics that describe trade relationships in absolute values and percentages. These values are taken directly from the DOTS database and are not processed through a gravity model. As was previously explained, the gravity model is estimated by using the natural logarithm of each variable. This is what makes the gravity model possible. However, it can be difficult to analyse the logarithmic results and residuals in terms of actual values.<sup>114</sup> Looking at the absolute values will therefore help to put the actual quantities into context in a way that is not directly evident from looking only at the gravity model residuals.

The first two indicators – the standardised residuals and the dummy variable coefficients – are therefore used to analyse the international trade structure through a generalised model. The third indicator, however, is used to reduce the abstraction of the first two variables and show what they mean in actual terms. Taken together, these three indicators are meant to draw up a comprehensive picture of how the international trade structure has developed over the last three and a half decades and thereby shed light on the research questions of this thesis.

### ***3.11. Ethical Considerations***

This research was carried out in accordance with the ethical guidelines of The Swedish Research Council.<sup>115</sup> Doing so was fairly straightforward, as this research does not rely on the use of personal information or data collected directly from people through interviews or other types of fieldwork. All the empirical material that was collected for this research is quantitative data that is publicly available. The ethical considerations discussed in the guidelines of the SRC (transparency, consent, confidentiality, use of personal information etc.) did therefore not prove to be salient in this research. Nevertheless, the author is aware of and acknowledges the importance of ethical considerations in academic research.

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<sup>114</sup> One possibility was to ‘delog’ the expected values and calculate ‘actual residuals’ instead of residuals from the logged variable. However, this tended to provide very biased results and was therefore aborted.

<sup>115</sup> Vetenskapsrådet, *Forskningsetiska principer inom humanistisk-samhällsvetenskaplig forskning*, (N.p. n.d.) Available at [<http://www.codex.vr.se/texts/HSFR.pdf>], (accessed May 14, 2015).

## 4. Empirical Findings

This chapter introduces the empirical findings of the research. It starts by assessing the existence of a core-periphery trade structure during the early part of the research period, before turning to a more comprehensive analysis of how trade patterns have developed over time. Finally, the chapter looks specifically at the role of China in this development.

### *4.1. The Core-Periphery Trade Structure*

As was discussed in the theoretical chapter, the first hypothesis of this research was that there was an identifiable core-periphery structure to international trade.

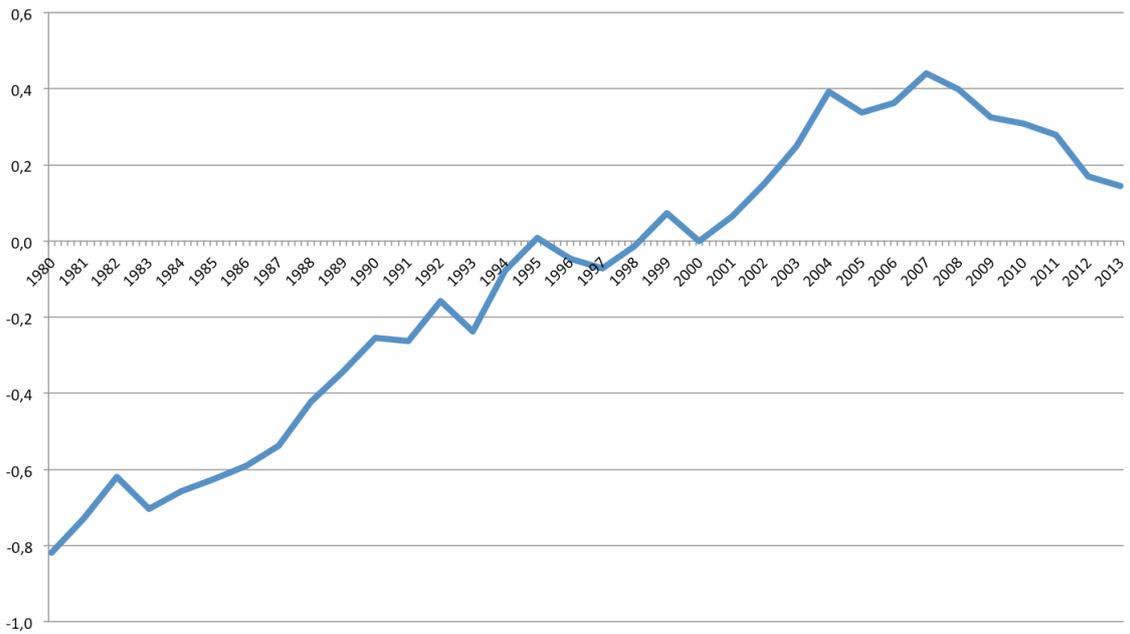
***Hypothesis 1:** World trade was still characterised by a core-periphery structure during the early part of the research period*

Furthermore, a core-periphery trade structure had been defined as having the following features:

- A. *States in the core occupy a central position in the trade structure, trading extensively amongst themselves as well as with states on the periphery*
- B. *States on the periphery trade with states in the core but have little trade amongst themselves*

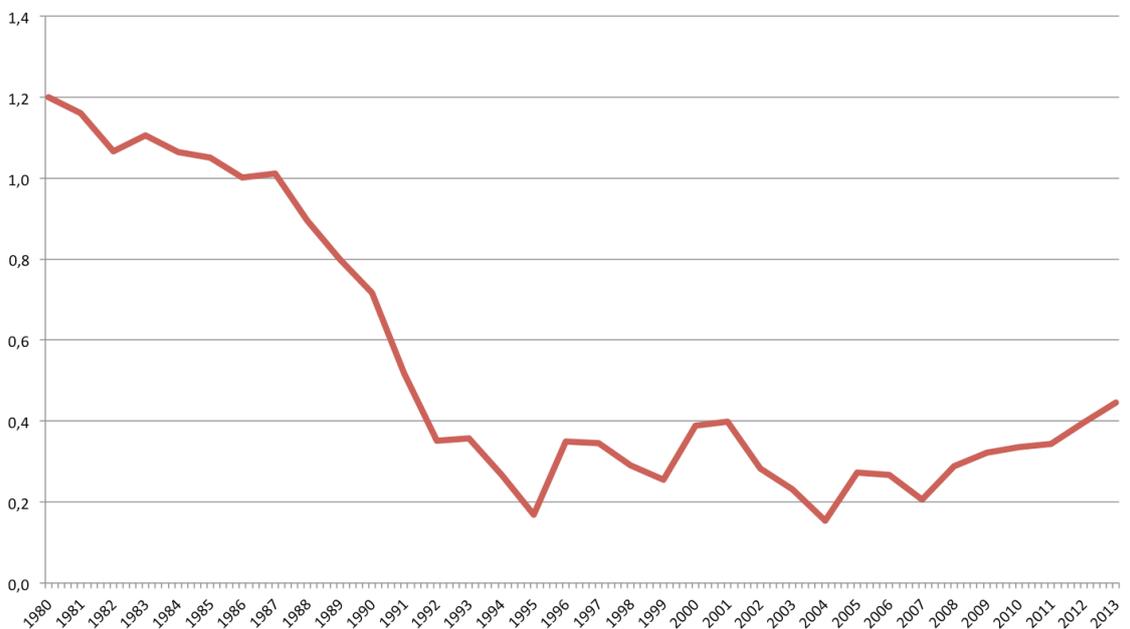
One way to assess the existence of this structure is to estimate the models using dummy variables for different trade relationships. This procedure was explained in section 3.9.

First, all models were estimated with the inclusion of a dummy variable for South-South trade. In accordance with the hypothesis, the dummy for South-South trade was inversely related to trade value between countries in the early years of the research period. Furthermore, the variable was statistically significant at a 99,9% level for all years from 1980 until 1993. However, the coefficient for the South-South dummy variable gradually decreases over time and, in fact, becomes positive after 1995. Figure 3 shows the unstandardised coefficients for the South-South dummy variable for each year.



**Figure 3:** Unstandardized coefficients for South-South trade dummy variable for each model.

Next, a similar method was used to assess the dominance of the North in international trade. Again, all models were estimated, but this time with a dummy variable for all cases that involved trade with the North.<sup>116</sup>



**Figure 4:** Unstandardized coefficients for the North's trade dummy variable for each model.

<sup>116</sup> This includes both trade that the North has amongst itself as well as trade it has with other regions.

In accordance with the hypothesis, this dummy variable was positively related to the value of trade. The variable was statistically significant at a 99,9% level for the whole period and remained positive throughout. However, the coefficient for the North trade dummy decreases substantially throughout the time period as figure 4 demonstrates.

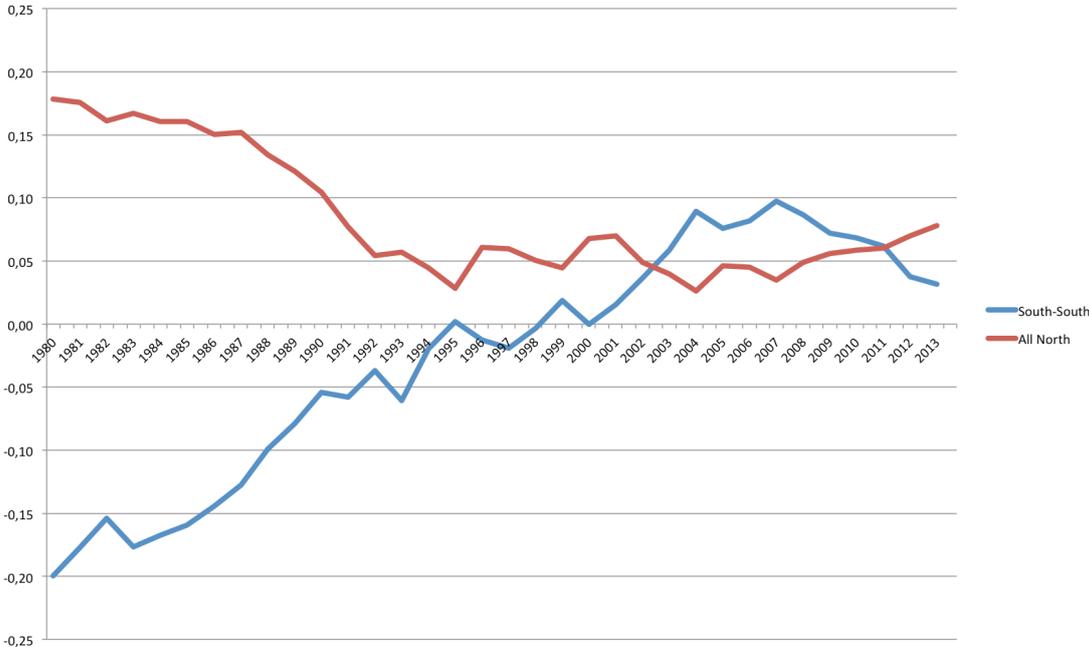
These findings strongly supports the first hypothesis: during the early part of the period under study, there was a core-periphery trade structure in which a) states in the North occupied a central position in the trading structure and b) states in the South had limited trade amongst themselves.

**4.2. The Development of the Trade Structure**

This section addresses the second hypothesis of the thesis, concerning the development of the trade structure over time.

**Hypothesis 2:** *The core-periphery trade structure underwent fundamental changes during the period from 1980 to 2013*

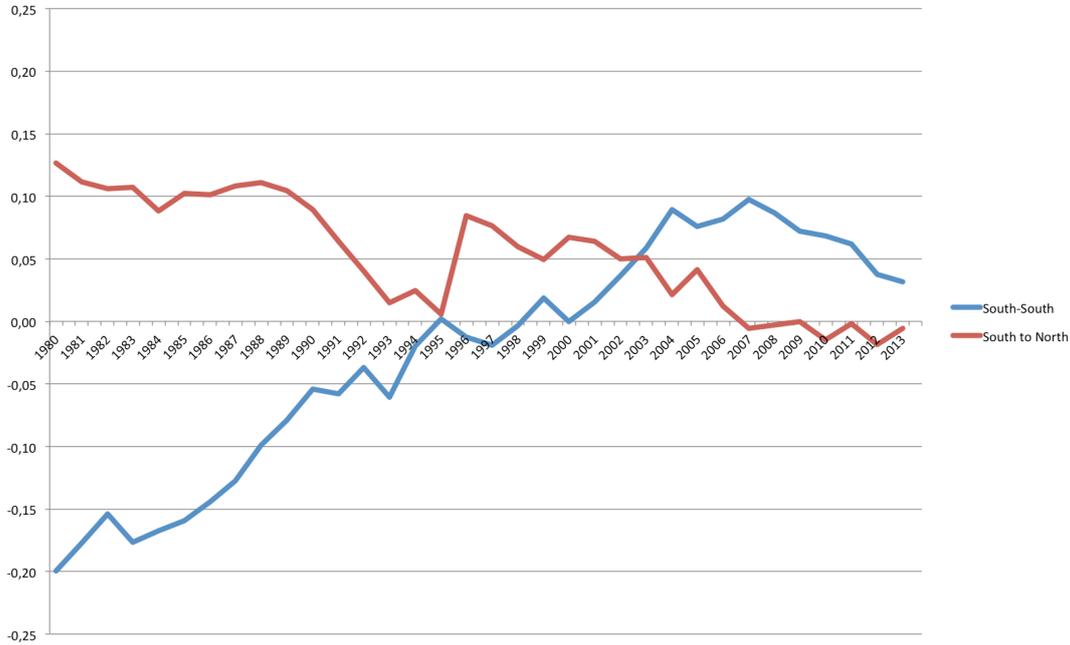
In order to do assess this, the section introduces evidence from standardised trade residuals for different groups, as well as absolute values of trade and percentages. These methods were described in sections 3.8 and 3.10, respectively.



**Figure 5:** Standardised residuals for South-South trade as well as all trade involving the North

Figure 5 shows the standardised residuals for South-South trade as well as all trade involving the North. As expected, the data on this figure tells a very similar story as the evidence from the dummy coefficients. South-South trade was substantially below the expected value of a simple gravity model at the beginning of the period (-0,2 standard deviations), but rises steadily towards the expected value around the turn of the millennium. After that, South-South trade is actually more than would be expected by a simple gravity model.

Similarly, trade involving countries in the North is substantially above the expected value at the beginning of the period (+0,18 standard deviations) but gradually decreases over time. However, it seems to level off at around +0,05 standard deviations in the early 1990s and stays that way until the years of the economic crisis of 2007-2008, after which it starts to increase again. However, it should be noted that this increase in the years after the crisis is probably due to falling or stagnating GDP figures in the North, which pushes down the expected values and therefore increases the residuals. The same – albeit inverse – dynamic is probably the explanation for the falling residuals for South-South trade during the same period.

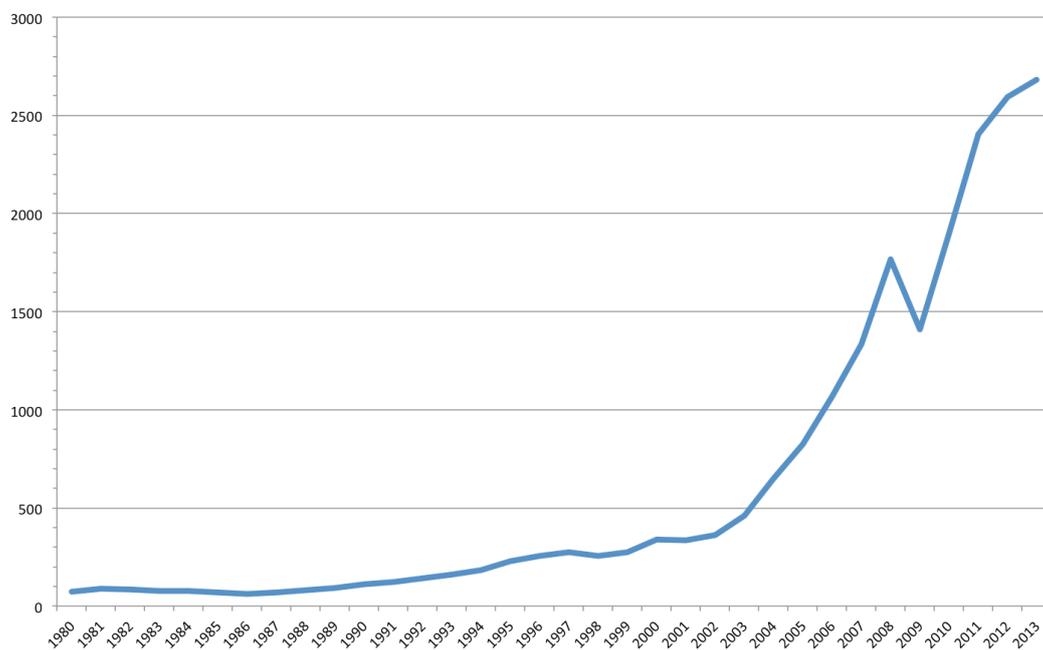


**Figure 6:** Standardised residuals for exports from the South.

Figure 6 compares the residuals of exports from the South to different destinations. During the early part of the period, the South exported substantially more to the North than the gravity model can explain, and substantially less to the other destinations in the South. The

gap is 0,33 standard deviations. Again, however, the gap gradually narrows and after 2003 the South exports more to the South than the North as measured in terms of trade residuals.

It is worth pointing out that the economies of the South have generally grown faster than the economies of the North during this period.<sup>117</sup> The expected values for trade within the South will therefore have grown faster than expected values for trade with the North. It is therefore all the more remarkable that South-South trade managed to grow at such a pace that it closes the gap with South to North trade in terms of residuals. In other words, the growth of South-South trade exceeds what can be explained by GDP growth in the South.



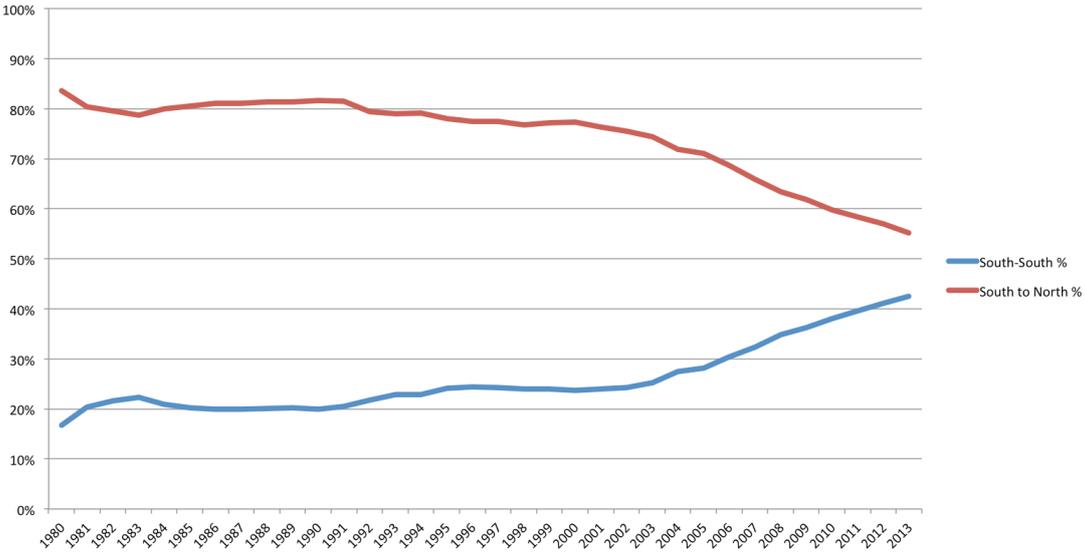
**Figure 7:** Value of South-South trade in billions of current US dollars.

Looking beyond the residuals from the gravity model, figure 7 shows what the growth of South-South trade looks like in absolute terms. As the figure shows, the total value of South-South trade remained below 100 billion US dollars annually throughout the 1980s and below 500 billion annually until 2004. In the subsequent decade, however, the value increased more than five-fold and is today more than two and a half trillions dollars.

If this development is expressed in percentages and compared to the South’s exports to the North, it is clear that the South is rapidly diversifying the destinations of its exports. As figure 8 shows, only around 20% of the South’s exports went to other countries in the South during the 1980s, increasing to 25% in the 1990s. Conversely, 80% went to the North during

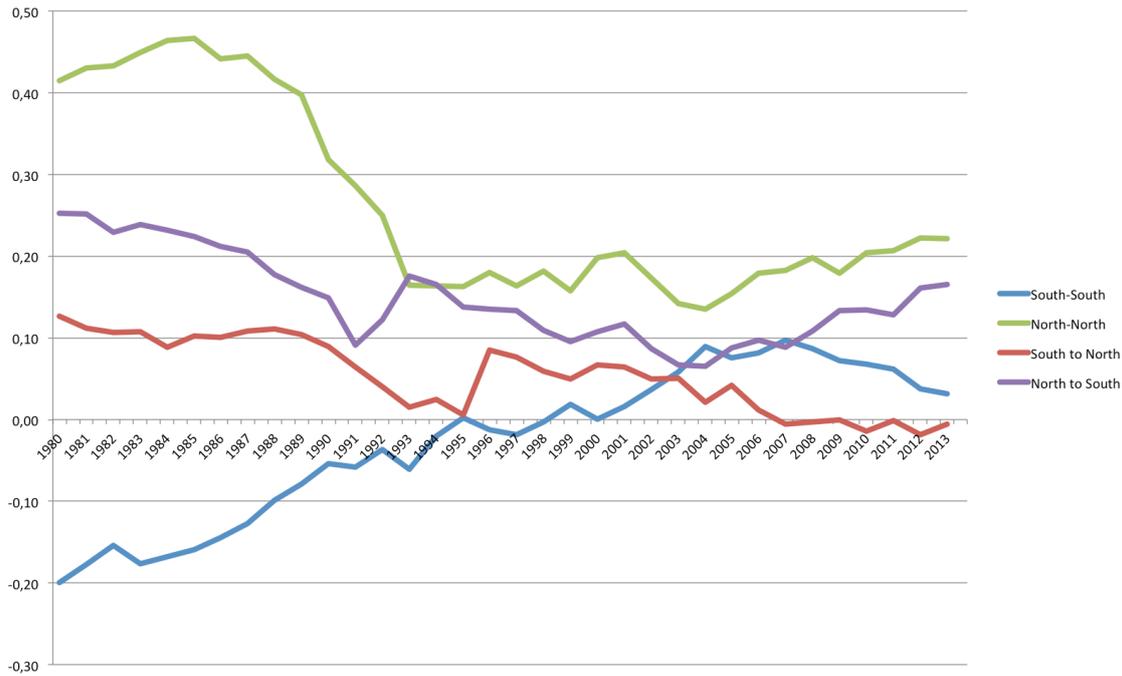
<sup>117</sup> Peter Lloyd, “The Role of Developing Countries in Global Economic Governance” *The Singapore Economic Review* 2 (2012): pp. 2-3.

the 1980s dropping to 75% in the 1990s. However, it is only after the turn of the millennium that the convergence really starts to gain momentum. In 2013, countries in the South imported 42% of each other's goods while 55% went to the North. The gap is closing fast. This growth in percentages to the South is all the more remarkable if it is kept in mind that overall exports of countries in the South have more than quadrupled since the year 2000.



**Figure 8:** Destination of exports from the South in percentages.

As this section has demonstrated, there have been major changes in the patterns of trade over the last three and a half decades. Figure 9 sums up these developments by showing the standardised residuals from all four major trade flows: South-South, North-North, South to North and North to South. It shows how states in the North were preminent in trade during the early period, trading amongst themselves far in excess of what a gravity model would predict, while also having extensive trade relations with the South. The countries in the South, however, had relatively little trade amongst themselves. All the expected features of the core-periphery structure are present during the early part of the period. However, the residuals gradually converge as the period progresses and countries in the South take on a more prominent and independent role in international trade.



**Figure 9:** Standardised trade residuals for South-South trade, North-North trade, South to North trade and North to South trade.

Taken together, the evidence introduced in this section strongly supports the second hypothesis. The international trade structure has undergone substantial changes in the period under study. Today, there is no longer evidence of a systematic bias in favour of the North in international trade relations and South-South trade has ceased to underperform. In other words, the core-periphery structure of international trade has dissolved.

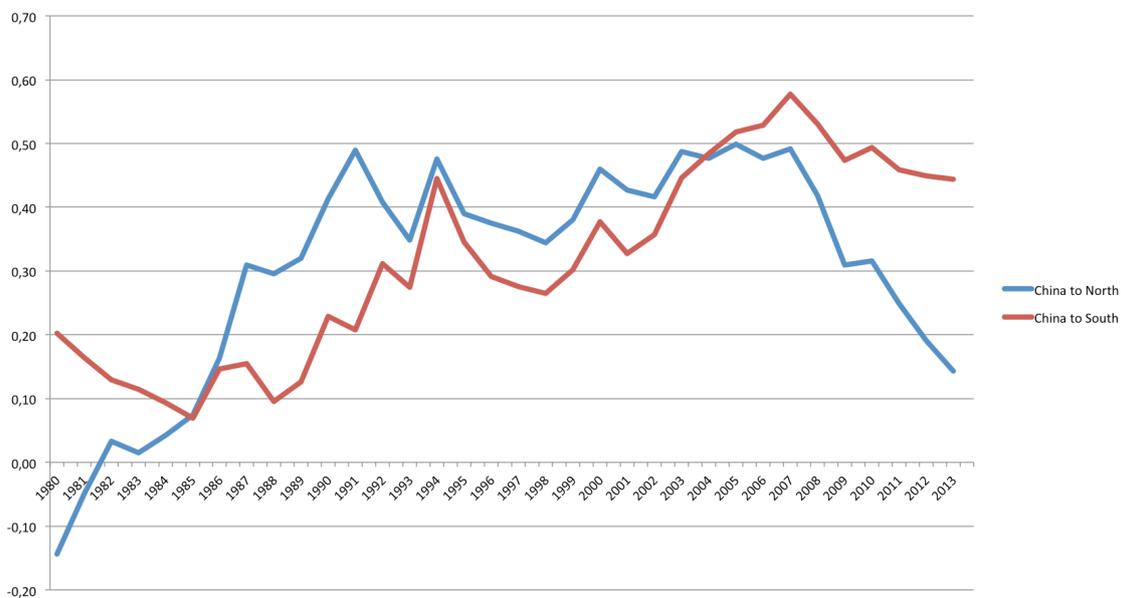
Of course this does not mean that the North has been relegated to a marginal position in world trade. In fact, the North continues to be at the forefront of international trade in both absolute and relative terms. However, the days when all roads led to the North are gone. The core-periphery structure that put the North at the centre of all trade relations has given way to a more balanced trade structure, in which most regions have diverse trade partners in both the developed and developing world. The geopolitical implications of this will be discussed in the following chapter.

### ***4.3. China, the Global South and World Trade***

As already mentioned, China has emerged as the largest trading nation, not only in the South, but in the world as a whole. This section examines the impact of China on patterns of international trade during the period under study in order to assess the third hypothesis:

**Hypothesis 3:** *The rise of China in the world economy played a key role in the transformation of the international trade structure*

Figure 10 shows the standardised residuals of China's exports to the North and the South. As the figure shows, China's overall exports have been far greater than a simple gravity model would predict during most of the period under study. Contrary to common perceptions, these figures do not indicate that China's exports have been uniformly directed towards the North. Indeed, China's exports to the South are substantially above gravity model prediction throughout the period, especially after 1990. What is particularly interesting in this figure, is that Chinese exports to the South surpass exports to the North in terms of residuals as early as 2004 and are today far higher than those to the North with a gap of 0,3 standard deviations.

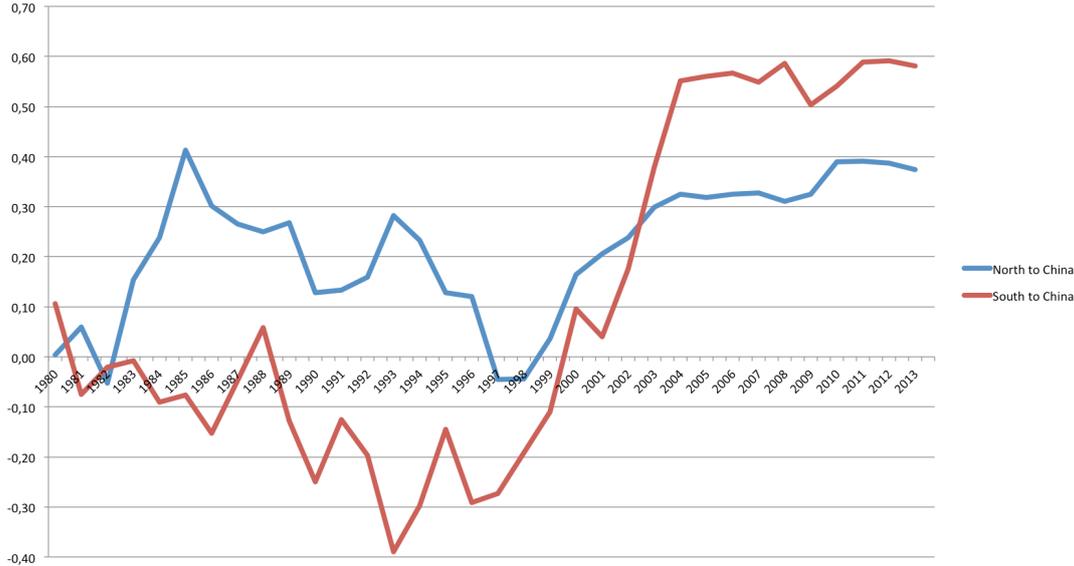


**Figure 10:** Standardised residuals for China's exports to the North and the South.

It has been commonly noted that China's exports to the North suffered after the 2008 financial crisis and, indeed, the data strongly supports that. However, the perception that China somehow reoriented itself towards the South as a *result* of the crisis is misleading. China's shift towards the South builds on older foundations and had to some extent already taken place before the crisis hit the economies of the core.

Figure 11 shows the origins of China's imports in terms of residuals. Here there is a more pronounced difference between the North and the South, as China clearly imports a lot more from the North than the South during the 1980s and 1990s. In fact, China imports less from the South than a simple gravity model would predict until the year 2000. However, in

the new millennium there is an explosion in China’s imports from the South and today China imports substantially more from the South than the North in terms of residuals. It is noteworthy that China’s imports do not seem to have been particularly affected by the economic crisis compared to the exports. Indeed, China’s imports from the North actually increased slightly.<sup>118</sup>

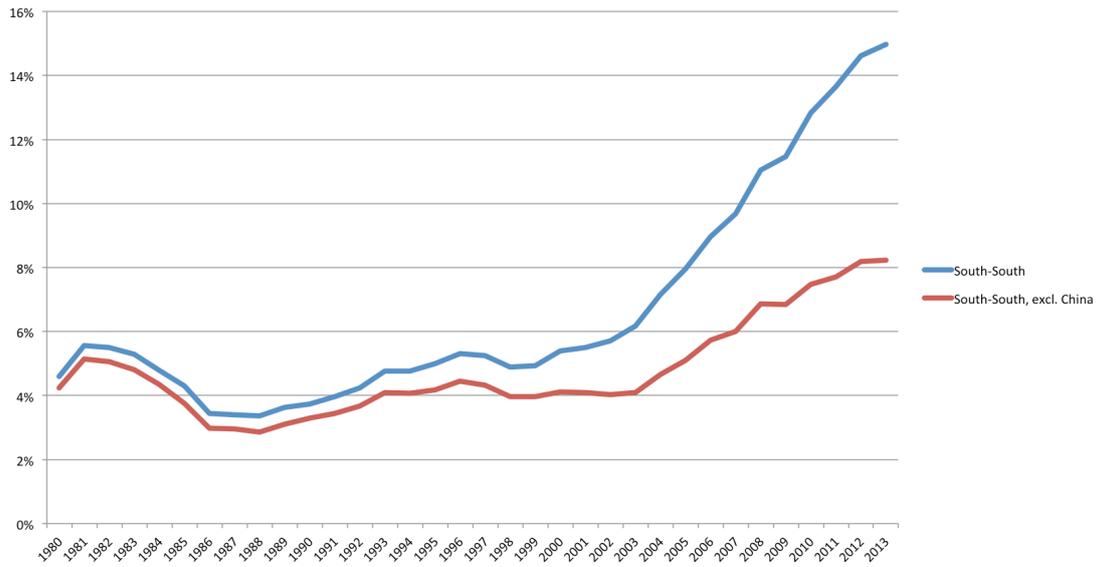


**Figure 11:** Standardised residuals for China’s imports from the North and the South.

Next, in order to evaluate the quantitative impact of China on the growth of South-South trade, figure 12 shows the value of South-South trade as a percentage of world trade. As the blue line reflects, South-South trade accounted for a meagre 5% of world trade during the early part of the research period, further supporting the hypothesis of a core-periphery trade structure. Furthermore, as expected, the new millennium marks a turning point and South-South trade starts to grow rapidly as a proportion of world trade, reaching around 15% in year 2013.

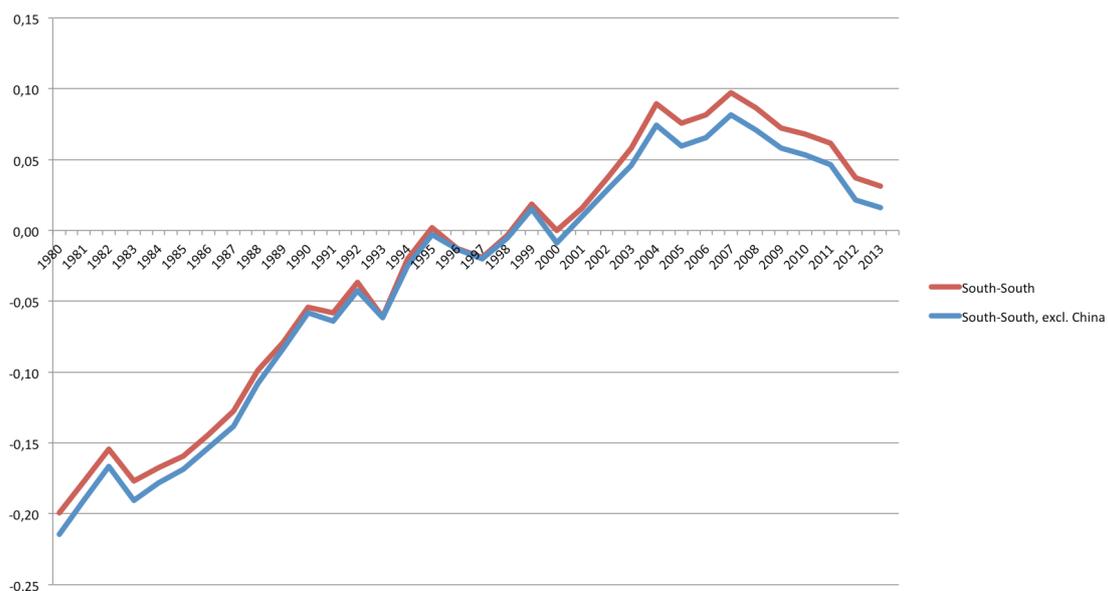
However, if China is excluded from the South group, the growth in South-South trade is much more modest, reaching only around 8% of world trade in 2013. China’s impact on South-South trade was relatively little during the early part of the period, but became more pronounced after year 2000. China today accounts for up to *half* of South-South trade as either importer or exporter. This observation seems to support the hypothesis that China has been a major contributor to the growth of South-South trade during the period under study.

<sup>118</sup> Again, this might be the result of falling expected values in the models due to stalling GDP growth in the North in the aftermath of the crisis.



**Figure 12:** Value of South-South trade as a proportion of world trade, with and without China.

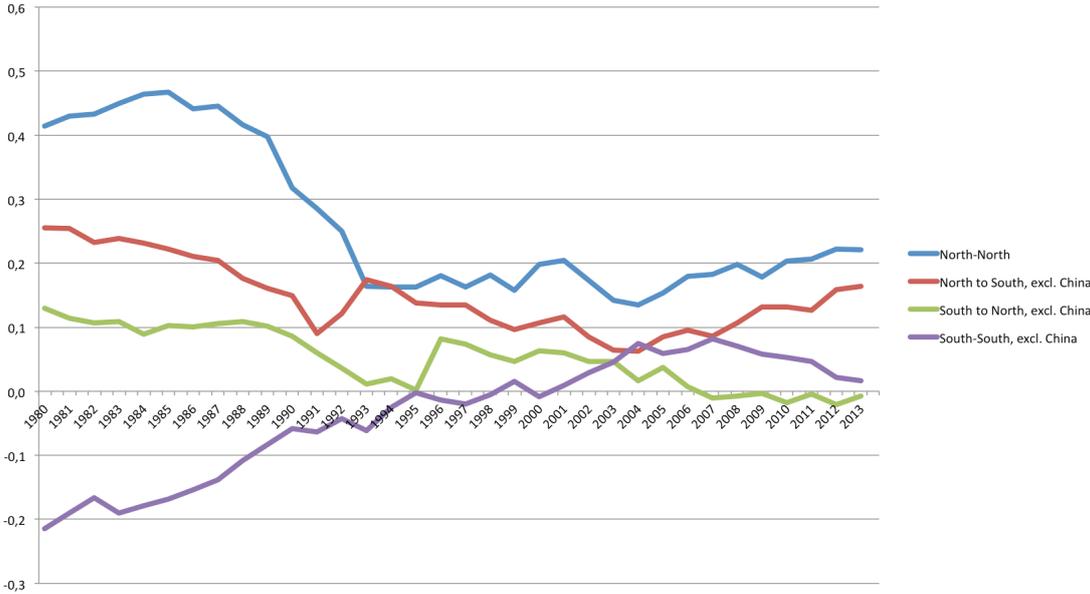
However, it is noteworthy that a qualitative shift in South-South trade nevertheless takes place, even if China is excluded from the analysis. As the red line shows, South-South trade excluding China remained at only 4% of world trade until 2003. In the decade that followed, however, it more than doubled as a proportion of world trade. Although this growth is much less pronounced in quantitative terms when China is excluded, it nevertheless suggests that the developments in the new millennium are about more than just the rise of China.



**Figure 13:** Standardised residuals for South-South trade with and without China.

In order to assess this further, figure 13 shows the standardised residuals for South-South trade when China is excluded from the group of countries in the South in comparison with the residuals when China is included. As the figure shows, the exclusion of China does not substantially alter the pattern of South-South trade over the period. The relative lack of South-South trade during the early part of the period is unchanged and so is the steady upward trend. Excluding China leads to a slightly lower residual for South-South trade during the last decade, but the change is not dramatic.

Looking at the overall development of trade patterns over the period delivers similar results. Figure 14 shows all the same residuals as figure 9, except that China is excluded from the group of countries in the South. The overall patterns remain the same. The period starts off with a clear core-periphery structure that gradually gives way to a more equal trade structure. Although the rise of South-South trade is less pronounced when China is excluded, the dissolution of the core-periphery structure nevertheless takes place.



**Figure 14:** Standardised trade residuals for South-South trade, North-North trade, South to North trade and North to South trade, when China is excluded from the South group.

The fate of hypothesis 3 is therefore rather mixed. In terms of absolute values, the influence of China on international trade patterns has been immense. China accounts for up to half of all South-South trade. However, when looking at the overall development of the trade structure in terms of residuals, the impact of China is much less pronounced, albeit still visible. The claim that the transformation of the core-periphery trade structure can be explained entirely by the influence of China is therefore not confirmed by the evidence. Instead, the evidence

suggests that there has been a more general reorientation of trade in the global South, not only towards China, but also towards other destinations in the South.

However, it is important to note that this methodology of excluding China's residuals has its limits. China's residuals can be excluded from the South's aggregation, but the country's overall influence on the world economy cannot be imagined away. China's rise to become the largest trading nation in the world has had an immense influence on world markets, arguably enhancing the South's terms of trade. This influence is 'system-wide' and, thus, goes well beyond what is captured by China's own trade residuals. It is therefore impossible to assert that the dissolution of the core-periphery trade structure would have taken place in the absence of China's rise. Ultimately, the assessment of hypothesis 3 remains inconclusive.

## 5. Discussion

This chapter discusses the theoretical implications of the results and how they contribute to the literature.

### *5.1. Postcolonial Structures of International Trade*

As the previous chapter demonstrated, the first hypothesis is strongly supported by the evidence presented. The core-periphery structure of international trade is clearly visible in the early part of the research period – during the 1980s and part of the 1990s – reflecting the preeminent position of the advanced economies in international trade, and the overall lack of South-South trade. In terms of absolute values, the lack of South-South trade is not surprising and confirms what is widely believed in the literature. As discussed in the chapter 2.3, the economies of the global South are relatively small and widely dispersed around the globe geographically – both factors that are known to inversely affect quantities of trade. It might therefore be tempting to explain the core-periphery trade structure as simply the result of these variables.

However, the contribution of this thesis is to show that the core-periphery trade structure was clearly visible, *even when the variables of economic size and geographical distance were factored out*. In other words, by using the gravity model, this thesis demonstrates the existence of clear patterns of international trade that go beyond what can be explained by the ‘usual suspects’ of GDP and distance. This suggests that Galtung’s feudal interaction structure was, indeed, an important characteristic of the colonial world economy and that its influence persisted in international trade patterns throughout most of the 20<sup>th</sup> century.

### *5.2. Metamorphosis of World Trade*

The results also show that the international trade structure has undergone fundamental changes during the period under study as postulated by the second hypothesis. The North gradually loses its preeminent position in the trade structure and there is an explosion in the value of South-South trade. It grows from around 100 billion in the 1980s to a staggering 2.700 billion in 2013. In absolute values, the growth of South-South trade is also fairly well documented in the literature already. Again, however, the contribution of this thesis is to

systematically assess this growth over time, while factoring out the variables of economic size and geographical distance. By doing so, this thesis has established a stronger basis for claiming that there has been a transformation of the very nature of the international trade structure. By using the gravity model, this thesis shows that the dissolution of the core-periphery trade structure is about more than the economic growth of countries in the global South. It is also about the directionality of their trade, which has finally managed to overcome the structural legacies of the colonial era.

This observation has interesting implications for the analysis of global economic governance. When the countries of the global South put forth demands for a New International Economic Order in the 1970s and 1980s, their demands were flatly rejected by the states of the North.<sup>119</sup> The failure of the South to have a say in global economic governance during this period reflected their weak bargaining position in the world economy. The North was still at the absolute centre of international trade and could therefore dictate its terms unilaterally. The feudal interaction structure from the colonial period was largely still in place, and so were the power relations that came with it.

From that time onward, however, the states of the South have steadily built up their mutual trade relations and thereby broken out of their dependent predicament. This helps to explain the very different atmosphere in global economic governance in the new millennium. Negotiations at the World Trade Organization have ran into stalemate after stalemate as the traditional ‘quad’ – US, EU, Japan and Canada – has found that it is unable to run the show on its own. As Anthony Payne puts it, “[t]he days when trade was sorted out within a ‘rich men’s club’, outside which so-called developing countries quietly waited for crumbs, are comprehensively over.”<sup>120</sup>

This does not mean that all countries of the South always have the exact same interests and positions on trade issues.<sup>121</sup> However, they do have a common interest in empowering the developing world more generally in matters of global economic governance.<sup>122</sup> And this they have done. As early as 2005, Payne could write that

the record of Seattle and Cancún, and even Doha up to a point, shows that the key non-‘quad’ countries – specifically those now grouped in the G20 – fight their positions much more

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<sup>119</sup> Vijay Prashad, *The Poorer Nations: A Possible History of the Global South*, (London 2012), pp. 79-81.

<sup>120</sup> Anthony Payne, “How many Gs are there in ‘global governance’ after the crisis?” *International Affairs* 3 (2010): p. 735.

<sup>121</sup> Anthony Payne, *The Global Politics of Unequal Development*, (Hampshire 2005), p. 197.

<sup>122</sup> Ramesh Thakur, “How representative are the BRICS?” *Third World Quarterly* 10 (2014): pp. 1795-1799.

determinedly and effectively than ever before and have just about enough clout to stop or hold up deals that are disproportionately tipped against their interests.<sup>123</sup>

In the decade since, the relative weight of the global South in the world economy has only grown and so has trade amongst its countries.

According to Payne, “[w]hat counts in trade politics is share of the global market” and “the US, the EU and Japan continue to account for the bulk of world trade”.<sup>124</sup> This view, however, misses the crucial importance of the *structure* of international trade in conferring influence on countries and regions. As this thesis has argued, power and influence in the world economy are not only about the absolute size of a country’s market – important as that may be. It is also about the *strategic position* of countries in the international trade structure. Therefore, when it comes to understanding the shifting balance of power in global economic governance in the last few decades, it is crucial to take into account the dissolution of the core-periphery structure.

It is therefore a mistake to look only at the relatively higher growth rates in the global South in order to gauge their growing influence vis-à-vis the North. Such a view will severely *underestimate* the actual shift that has taken place in the balance of power in the world economy. The North is losing its position, not only because it has lower GDP growth figures, but more importantly, because it has lost its strategic position as the centre of the world economy. The contribution of this thesis is to highlight this *structural transformation* to complement the already widely documented quantitative shift that has taken place.

### **5.3. China and the Global South**

As it turned out, the evidence was more equivocal on the third hypothesis: that the transformation of the trade structure can largely be attributed to China’s rise. Although the magnitude of China’s foreign trade is unparalleled in the global South, the evidence suggests that the dissolution of the core-periphery trade structure is a more general phenomenon. It reflects growing trade relations between countries of the global South *other than just China*. This observation has a number of implications.

Most importantly, the findings do not suggest that China is assuming the structural position of a core vis-à-vis other countries in the global South. China is certainly the largest

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<sup>123</sup> Payne, *The Global Politics of Unequal Development*, p. 197. It should be noted that the ‘G20’ referred to here is the G20 grouping of developing countries that worked together at WTO negotiations and not the newer G20 that was established after the 2008 economic crisis to replace the G7/8.

<sup>124</sup> Payne, *The Global Politics of Unequal Development*, p. 197.

trading nation in the South, but the contemporary trade structure does not reflect a core-periphery structure with China at its centre. States in the global South trade extensively with China, but also with each other and, of course, with the North. It therefore seems that the countries in the South have broken free from their structural dependence on the North without replacing it with an equivalent dependence on China. The evidence suggests that instead of being a new core, China is merely first among equals in a more balanced international trade structure.

However, this analysis must be qualified by noting that this research only looks at the overall structure of international trade but does not disaggregate its components. Indeed, as was discussed in chapter 2.4, some scholars point out that the *composition* of China's trade with the South has quite similar characteristics as the South's traditional trade with the core: the South exports primary products in exchange for manufactured goods. This, they might argue, is more important in terms of 'dependence' than the overall structure of international trade. However, as Giovanni Arrighi and Lu Zhang have noted, those who criticise China's influence in the South with these arguments tend to "miss the ongoing reversal of the terms of trade between manufacturing and primary production" that has taken place.<sup>125</sup>

A central argument of dependency theory was that the price for primary products tended to fall over time relative to the price for manufactured goods, thereby undermining the South's terms of trade.<sup>126</sup> Arrighi and Zhang, however, argue that this logic is obsolete now that the South has increasingly industrialised and demand for primary products has grown across the board.<sup>127</sup> Although Arrighi and Zhang do not address the issue of trade structure explicitly, their analysis is highly compatible with the account presented in this thesis. Terms of trade have, indeed, swung in favour of the global South in recent years, showing that there is nothing in the nature of primary products that necessitates falling terms of trade. A more plausible explanation is that this reversal is the result of the South's stronger strategic position in international trade after the dissolution of the core-periphery structure.

Having rejected the view that China is simply becoming a new core, it is possible to turn to the opposite hypothesis: that China has similar interests as other developing countries and that its rise is therefore empowering for the global South more generally. This view, however, is more difficult to assess based on the evidence presented in this research. It is important to underline that the failure of the evidence to support one hypothesis, does not in

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<sup>125</sup> Arrighi and Zhang, "Beyond the Washington Consensus", p. 49.

<sup>126</sup> Prebisch, *The Economic Development of Latin America and Its Principal Problems*, pp. 8-14.

<sup>127</sup> Arrighi and Zhang, "Beyond the Washington Consensus", p. 49.

itself constitute proof that the opposite is true. China may not be assuming the role of a traditional core country, but there may still be various conflicts of interests between it and other countries in the South in matters concerning the world economy. What is clear, however, is that the rise of China has provided important alternatives for other countries in the global South in terms of political and economic relations. And the benefits of these alternatives go beyond the direct gains that the South has from its dealings with China. In the words of Arrighi and Zhang, China has not only offered “Southern countries with better terms of trade, aid, and investment” than they had before, but by doing so it has “[intensified] competitive pressures on Northern countries to provide Southern countries with better terms than they otherwise would.”<sup>128</sup> Again, what they are essentially saying is that the stronger strategic position of the South in the international trade structure has had a systemic influence on their terms of trade for the better.

In the end, the extent to which China’s rise will empower the global South more generally remains to be seen. But whatever the future holds, the rise of China has already contributed to the “subversion of the structural foundations of the global hierarchy of wealth and power”.<sup>129</sup> And if we accept that the South was subordinated in this hierarchy, its demise at least gives cause for careful optimism.

#### ***5.4. Limitations of Aggregation***

Finally, it is in order to address some of the limitations of this research. Most importantly, the level of aggregation in the analysis is very high. The G77, which was used to define the South, includes 134 countries and nearly 80% of the world’s population. Many critics would rightly point out that there is substantial variation in the economic trajectory of different regions within this grouping during the period under study. Sweeping claims about the fate of the ‘South’ must therefore be kept in their right perspective: they are true at a high level of abstraction, but also disguise wide variations at the regional and country level.

Indeed, some scholars argue that the South has largely ceased to be a meaningful term in analysing the world economy.<sup>130</sup> Others argue that the South has effectively split in two: into “a developing world . . . (totaling about four billion people) whose economic growth rate has for the past several decades outpaced that of the developed world” and a group of “least-

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<sup>128</sup> Ibid., p. 49.

<sup>129</sup> Ibid., p. 49.

<sup>130</sup> Payne, *The Global Politics of Unequal Development*, pp. 231-233.

developed countries” whose GDP “has grown hardly at all in the past forty years”.<sup>131</sup> This latter group is also known as the ‘bottom billion’.<sup>132</sup> Still others choose to zoom in on the fastest growing economies in the South, collectively referred to as the ‘emerging economies’.<sup>133</sup> All of these categories point to important variations within the contemporary South and this research would, indeed, have benefitted from a more disaggregated analysis of their development.

However, I would like to raise two arguments in defense of the thesis. Firstly, the failure to include more regional nuance in the analysis does not undermine the ability of the thesis to answer its main research questions: whether there was core-periphery structure and what happened to it. As the results showed, a core-periphery structure to international trade was clearly visible during the 1980s and early 1990s, but gradually gave way to a more balanced structure around the turn of the millennium.

Secondly, the variation and complexity within the contemporary global South is not inconsistent with the arguments of this thesis, but is in fact a logical consequence of its results. Again, the main finding of the thesis is that the core-periphery structure has dissolved. It is therefore only natural that the resulting structure would be *something else than a simple core-periphery dichotomy*. The contemporary South is, indeed, much more complicated and diverse than it was during colonial times and the decades following independence. And perhaps the North-South dichotomy is gradually becoming obsolete. However, in order to understand the contemporary world, we have to understand how we got here. And the dissolution of the core-periphery structure is an important part of that story.

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<sup>131</sup> Dittmer, “China and the Developing World”, p. 1.

<sup>132</sup> Paul Collier, *The Bottom Billion: Why the Poorest Countries are Failing and What Can Be Done About It*, (Oxford 2007).

<sup>133</sup> Andrew Hurrell, “Rising powers and the emerging global order” *The Globalization of World Politics*, 6<sup>th</sup> edition, eds. Baylis, Smith and Owens, (Oxford 2014), pp. 90-93.

## 6. Conclusion

This thesis set out to investigate the development of the international trade structure during the period from 1980 to 2013. It did so by using a gravity model of international trade in order to detect systematic patterns over time. The research was guided by the hypothesis that legacies from the colonial era were still visible in patterns of international trade during the early part of the research period, but were gradually starting to fade away. Furthermore, it was assumed that the rapid economic rise of China during this period had a lot to do with this disruption.

As it turned out, the first two hypotheses were found to be true. International trade patterns during the 1980s and early 1990s reflected the structural legacy of the colonial period and the power asymmetries that came with it. The countries of the North occupied a pivotal position in the international trade structure, sitting at its centre like an octopus with its tentacles penetrating the various regions of the global South. The states in the South, however, were in a vulnerable position and more or less dependent on the North for their international trade. This 'strategically stronger' position of the North served to skew the terms of international trade in favour of the North in much the same way as it had during the colonial era.

However, as the century drew to a close, the states in the global South gradually escaped their complete dependence on the North by forging stronger trade relationships amongst themselves. The new millennium, thus, saw the emergence of a more balanced international trade structure, where the North had lost its preeminent position at its centre. Furthermore, China emerged during this period as the largest trading nation in the world, and today accounts for close to half of all South-South trade. This has generally strengthened the position of states in the South in the world economy by diversifying their export markets and enhancing their terms of trade. However, the dissolution of the core-periphery structure was not simply a reorientation towards China. The growth of South-South trade represents a system-wide transformation in which the developing world has generally strengthened its position.

It is impossible to know how the international trade structure would have developed in the absence of China. But the evidence shows that China is not assuming the position of a 'new core' in the world economy. Its emergence as the largest trading nation in the world has coincided with a general trend towards a more balanced international trade structure. A

structure in which the countries of the global South occupy a better position than anytime before in the modern world.

For Giovanni Arrighi, the rise of China provides the possibility for a ‘new Bandung’, reinvigorating the Third World solidarity movement of the Cold War years.<sup>134</sup> This time, however, it would not be based solely on political and ideological foundations but have a strong economic basis to work from. In fact, one might argue that the spectre of Bandung already looms large over the world economy in the new millennium. The colonial structure of international trade has finally dissolved and so have the power relations that came with it. Today, the global South does not have to plead with the North for a more just world order. It can set about constructing it itself.

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<sup>134</sup> Arrighi, *Adam Smith in Beijing*, pp. 384-385.

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## Appendix 1

Model summaries and coefficient statistics for the simple gravity models. These models were used to calculate the residuals used for indicator 1.

**Model Summary**

Year	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1980	1	,757 <sup>a</sup>	,572	,572	2,16490
1981	1	,755 <sup>a</sup>	,569	,569	2,18782
1982	1	,763 <sup>a</sup>	,582	,581	2,14736
1983	1	,761 <sup>a</sup>	,579	,579	2,14230
1984	1	,762 <sup>a</sup>	,580	,580	2,13621
1985	1	,764 <sup>a</sup>	,583	,583	2,11898
1986	1	,774 <sup>a</sup>	,599	,599	2,11582
1987	1	,776 <sup>a</sup>	,602	,602	2,13264
1988	1	,781 <sup>a</sup>	,610	,610	2,15766
1989	1	,780 <sup>a</sup>	,608	,608	2,20020
1990	1	,779 <sup>a</sup>	,607	,607	2,28831
1991	1	,788 <sup>a</sup>	,621	,621	2,20315
1992	1	,788 <sup>a</sup>	,622	,622	2,20410
1993	1	,790 <sup>a</sup>	,624	,624	2,22436
1994	1	,799 <sup>a</sup>	,639	,638	2,20697
1995	1	,803 <sup>a</sup>	,645	,645	2,20998
1996	1	,808 <sup>a</sup>	,652	,652	2,20082
1997	1	,810 <sup>b</sup>	,656	,656	2,20458
1998	1	,806 <sup>b</sup>	,649	,649	2,21031
1999	1	,809 <sup>a</sup>	,654	,654	2,24756
2000	1	,801 <sup>a</sup>	,642	,642	2,32046
2001	1	,802 <sup>a</sup>	,644	,644	2,33282
2002	1	,800 <sup>b</sup>	,640	,640	2,35278
2003	1	,801 <sup>b</sup>	,642	,642	2,36821
2004	1	,798 <sup>b</sup>	,638	,637	2,42434
2005	1	,794 <sup>a</sup>	,630	,630	2,47589
2006	1	,792 <sup>b</sup>	,628	,628	2,51602
2007	1	,792 <sup>b</sup>	,627	,627	2,52278
2008	1	,787 <sup>b</sup>	,620	,620	2,56944
2009	1	,790 <sup>b</sup>	,624	,624	2,52573
2010	1	,789 <sup>b</sup>	,622	,622	2,57158
2011	1	,788 <sup>b</sup>	,620	,620	2,59616
2012	1	,784 <sup>b</sup>	,615	,615	2,60909
2013	1	,783 <sup>b</sup>	,614	,614	2,61852

a. Predictors: (Constant), In\_distance\_cap, In\_importer\_GDP, In\_partner\_GDP

b. Predictors: (Constant), In\_distance\_cap, In\_partner\_GDP, In\_importer\_GDP

Coefficients<sup>a</sup>

Year	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
1980	1	(Constant)	6,453	,287		22,512	,000
		In_importer_GDP	,895	,011	,599	78,736	,000
		In_partner_GDP	,905	,012	,562	73,225	,000
		In_distance_cap	-1,077	,029	-,280	-36,953	,000
1981	1	(Constant)	6,726	,272		24,714	,000
		In_importer_GDP	,870	,011	,598	81,799	,000
		In_partner_GDP	,912	,012	,572	77,541	,000
		In_distance_cap	-1,089	,028	-,283	-38,822	,000
1982	1	(Constant)	7,005	,266		26,322	,000
		In_importer_GDP	,861	,010	,599	82,631	,000
		In_partner_GDP	,922	,012	,583	79,699	,000
		In_distance_cap	-1,124	,028	-,294	-40,690	,000
1983	1	(Constant)	6,853	,270		25,381	,000
		In_importer_GDP	,883	,011	,603	82,437	,000
		In_partner_GDP	,920	,012	,578	78,314	,000
		In_distance_cap	-1,132	,028	-,298	-40,951	,000
1984	1	(Constant)	6,882	,267		25,808	,000
		In_importer_GDP	,877	,011	,603	82,769	,000
		In_partner_GDP	,922	,012	,585	79,489	,000
		In_distance_cap	-1,127	,027	-,297	-41,009	,000
1985	1	(Constant)	6,725	,265		25,349	,000
		In_importer_GDP	,875	,011	,599	82,947	,000
		In_partner_GDP	,936	,011	,599	82,156	,000
		In_distance_cap	-1,125	,027	-,296	-41,323	,000
1986	1	(Constant)	5,998	,263		22,787	,000
		In_importer_GDP	,890	,010	,614	87,320	,000
		In_partner_GDP	,962	,011	,612	86,477	,000
		In_distance_cap	-1,112	,027	-,286	-41,236	,000
1987	1	(Constant)	6,146	,259		23,725	,000
		In_importer_GDP	,883	,010	,614	88,619	,000
		In_partner_GDP	,960	,011	,624	89,218	,000
		In_distance_cap	-1,132	,027	-,289	-42,150	,000
1988	1	(Constant)	6,072	,258		23,493	,000
		In_importer_GDP	,883	,010	,616	91,515	,000
		In_partner_GDP	,981	,010	,642	94,831	,000
		In_distance_cap	-1,160	,027	-,288	-43,704	,000
1989	1	(Constant)	6,604	,262		25,192	,000
		In_importer_GDP	,883	,010	,607	91,163	,000
		In_partner_GDP	1,006	,010	,658	98,465	,000
		In_distance_cap	-1,260	,027	-,304	-47,139	,000

Coefficients<sup>a</sup>

Year	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
1990	1	(Constant)	6,352	,266		23,876	,000
		In_importer_GDP	,896	,010	,601	92,682	,000
		In_partner_GDP	1,039	,010	,665	102,124	,000
		In_distance_cap	-1,301	,027	-,300	-47,715	,000
1991	1	(Constant)	6,396	,252		25,337	,000
		In_importer_GDP	,884	,009	,606	94,832	,000
		In_partner_GDP	1,047	,010	,690	107,596	,000
		In_distance_cap	-1,300	,026	-,305	-49,218	,000
1992	1	(Constant)	6,432	,240		26,797	,000
		In_importer_GDP	,883	,009	,603	98,816	,000
		In_partner_GDP	1,038	,009	,689	112,830	,000
		In_distance_cap	-1,297	,025	-,305	-51,569	,000
1993	1	(Constant)	6,550	,226		29,023	,000
		In_importer_GDP	,890	,009	,589	102,131	,000
		In_partner_GDP	1,059	,009	,689	119,475	,000
		In_distance_cap	-1,355	,024	-,322	-57,448	,000
1994	1	(Constant)	6,188	,215		28,777	,000
		In_importer_GDP	,927	,008	,607	111,728	,000
		In_partner_GDP	1,059	,008	,680	125,005	,000
		In_distance_cap	-1,364	,023	-,321	-60,410	,000
1995	1	(Constant)	5,730	,208		27,592	,000
		In_importer_GDP	,932	,008	,594	116,255	,000
		In_partner_GDP	1,080	,008	,676	131,985	,000
		In_distance_cap	-1,358	,021	-,317	-63,277	,000
1996	1	(Constant)	5,503	,205		26,785	,000
		In_importer_GDP	,929	,008	,583	117,209	,000
		In_partner_GDP	1,112	,008	,686	137,879	,000
		In_distance_cap	-1,381	,021	-,319	-65,500	,000
1997	1	(Constant)	5,119	,202		25,333	,000
		In_importer_GDP	,950	,008	,578	120,614	,000
		In_partner_GDP	1,116	,008	,681	142,111	,000
		In_distance_cap	-1,364	,021	-,312	-66,383	,000
1998	1	(Constant)	4,955	,201		24,612	,000
		In_importer_GDP	,924	,008	,556	117,151	,000
		In_partner_GDP	1,131	,008	,686	144,637	,000
		In_distance_cap	-1,325	,020	-,305	-65,717	,000
1999	1	(Constant)	4,751	,202		23,528	,000
		In_importer_GDP	,945	,008	,562	121,777	,000
		In_partner_GDP	1,151	,008	,680	147,146	,000
		In_distance_cap	-1,365	,020	-,306	-67,650	,000

Coefficients<sup>a</sup>

Year	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
2000	1	(Constant)	5,329	,203		26,221	,000
		In_importer_GDP	,944	,008	,552	120,698	,000
		In_partner_GDP	1,141	,008	,674	147,212	,000
		In_distance_cap	-1,419	,020	-,312	-69,617	,000
2001	1	(Constant)	5,174	,204		25,372	,000
		In_importer_GDP	,937	,008	,539	119,676	,000
		In_partner_GDP	1,164	,008	,679	150,649	,000
		In_distance_cap	-1,421	,020	-,309	-69,849	,000
2002	1	(Constant)	4,913	,206		23,868	,000
		In_importer_GDP	,926	,008	,529	117,708	,000
		In_partner_GDP	1,177	,008	,682	151,952	,000
		In_distance_cap	-1,402	,020	-,302	-68,676	,000
2003	1	(Constant)	4,700	,207		22,654	,000
		In_importer_GDP	,934	,008	,532	119,714	,000
		In_partner_GDP	1,186	,008	,679	153,007	,000
		In_distance_cap	-1,418	,020	-,302	-69,604	,000
2004	1	(Constant)	4,557	,213		21,419	,000
		In_importer_GDP	,929	,008	,520	117,424	,000
		In_partner_GDP	1,202	,008	,678	153,115	,000
		In_distance_cap	-1,432	,021	-,300	-69,122	,000
2005	1	(Constant)	4,339	,217		19,988	,000
		In_importer_GDP	,920	,008	,508	114,490	,000
		In_partner_GDP	1,217	,008	,677	152,493	,000
		In_distance_cap	-1,429	,021	-,295	-67,837	,000
2006	1	(Constant)	3,831	,221		17,363	,000
		In_importer_GDP	,922	,008	,501	113,385	,000
		In_partner_GDP	1,236	,008	,676	153,040	,000
		In_distance_cap	-1,413	,021	-,287	-66,202	,000
2007	1	(Constant)	3,779	,222		16,991	,000
		In_importer_GDP	,915	,008	,494	112,398	,000
		In_partner_GDP	1,228	,008	,671	152,504	,000
		In_distance_cap	-1,407	,021	-,285	-65,921	,000
2008	1	(Constant)	3,579	,228		15,715	,000
		In_importer_GDP	,903	,008	,481	108,997	,000
		In_partner_GDP	1,246	,008	,671	152,184	,000
		In_distance_cap	-1,407	,022	-,282	-65,013	,000
2009	1	(Constant)	3,634	,223		16,268	,000
		In_importer_GDP	,908	,008	,484	110,188	,000
		In_partner_GDP	1,263	,008	,676	154,056	,000
		In_distance_cap	-1,449	,021	-,294	-68,060	,000

**Coefficients<sup>a</sup>**

Year	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
2010	1	(Constant)	3,602	,226		15,964	,000
		In_importer_GDP	,916	,008	,483	110,398	,000
		In_partner_GDP	1,269	,008	,675	154,510	,000
		In_distance_cap	-1,475	,022	-,293	-68,115	,000
2011	1	(Constant)	3,577	,229		15,610	,000
		In_importer_GDP	,919	,008	,482	110,023	,000
		In_partner_GDP	1,273	,008	,674	153,924	,000
		In_distance_cap	-1,490	,022	-,293	-67,914	,000
2012	1	(Constant)	3,483	,230		15,140	,000
		In_importer_GDP	,919	,008	,479	108,876	,000
		In_partner_GDP	1,271	,008	,673	153,050	,000
		In_distance_cap	-1,478	,022	-,291	-67,178	,000
2013	1	(Constant)	3,509	,231		15,176	,000
		In_importer_GDP	,920	,008	,477	108,609	,000
		In_partner_GDP	1,274	,008	,670	152,516	,000
		In_distance_cap	-1,496	,022	-,293	-67,802	,000

a. Dependent Variable: In\_flow\_value

## Appendix 2

Model summaries and coefficient statistics for the models when a dummy variable for South-South trade is included. The name of the South-South trade dummy variable is 'G77\_intra'.

**Model Summary**

Year	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1980	1	,764 <sup>a</sup>	,583	,583	2,13727
1981	1	,760 <sup>a</sup>	,578	,578	2,16590
1982	1	,767 <sup>a</sup>	,588	,588	2,13147
1983	1	,766 <sup>a</sup>	,587	,587	2,12164
1984	1	,767 <sup>b</sup>	,588	,587	2,11820
1985	1	,768 <sup>a</sup>	,590	,589	2,10270
1986	1	,778 <sup>a</sup>	,605	,605	2,10169
1987	1	,779 <sup>a</sup>	,607	,607	2,12111
1988	1	,783 <sup>a</sup>	,613	,612	2,15064
1989	1	,781 <sup>a</sup>	,609	,609	2,19559
1990	1	,780 <sup>a</sup>	,608	,608	2,28593
1991	1	,788 <sup>a</sup>	,622	,622	2,20044
1992	1	,789 <sup>a</sup>	,622	,622	2,20314
1993	1	,791 <sup>a</sup>	,625	,625	2,22203
1994	1	,799 <sup>a</sup>	,639	,638	2,20680
1995	1	,803 <sup>a</sup>	,645	,645	2,21006
1996	1	,808 <sup>a</sup>	,652	,652	2,20080
1997	1	,810 <sup>a</sup>	,656	,656	2,20444
1998	1	,806 <sup>a</sup>	,649	,649	2,21037
1999	1	,809 <sup>a</sup>	,654	,654	2,24740
2000	1	,801 <sup>a</sup>	,642	,642	2,32052
2001	1	,803 <sup>a</sup>	,644	,644	2,33271
2002	1	,800 <sup>a</sup>	,640	,640	2,35188
2003	1	,802 <sup>a</sup>	,643	,643	2,36571
2004	1	,800 <sup>a</sup>	,639	,639	2,41825
2005	1	,795 <sup>a</sup>	,631	,631	2,47143
2006	1	,793 <sup>a</sup>	,629	,629	2,51087
2007	1	,793 <sup>a</sup>	,629	,629	2,51525
2008	1	,788 <sup>b</sup>	,622	,622	2,56334
2009	1	,791 <sup>b</sup>	,625	,625	2,52159
2010	1	,790 <sup>b</sup>	,623	,623	2,56785
2011	1	,788 <sup>b</sup>	,621	,621	2,59311
2012	1	,784 <sup>b</sup>	,615	,615	2,60801
2013	1	,783 <sup>b</sup>	,614	,614	2,61776

a. Predictors: (Constant), G77\_intra, ln\_distance\_cap, ln\_partner\_GDP, ln\_importer\_GDP

b. Predictors: (Constant), G77\_intra, ln\_distance\_cap, ln\_importer\_GDP, ln\_partner\_GDP

Coefficients<sup>a</sup>

Year	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
1980	1	(Constant)	8,363	,313		26,7	,000
		ln_importer_GDP	,834	,012	,558	69,4	,000
		ln_partner_GDP	,850	,013	,528	66,3	,000
		ln_distance_cap	-1,131	,029	-,294	-3,9	,000
		G77_intra	-,818	,058	-,117	-1,4	,000
1981	1	(Constant)	8,383	,298		28,2	,000
		ln_importer_GDP	,821	,011	,564	73,4	,000
		ln_partner_GDP	,864	,012	,542	70,7	,000
		ln_distance_cap	-1,140	,028	-,296	-4,1	,000
		G77_intra	-,728	,056	-,103	-1,3	,000
1982	1	(Constant)	8,402	,292		28,8	,000
		ln_importer_GDP	,820	,011	,570	74,5	,000
		ln_partner_GDP	,881	,012	,557	73,0	,000
		ln_distance_cap	-1,166	,028	-,305	-4,2	,000
		G77_intra	-,619	,055	-,088	-1,1	,000
1983	1	(Constant)	8,465	,296		28,6	,000
		ln_importer_GDP	,835	,011	,570	74,0	,000
		ln_partner_GDP	,872	,012	,548	71,4	,000
		ln_distance_cap	-1,181	,028	-,310	-4,3	,000
		G77_intra	-,704	,055	-,100	-1,3	,000
1984	1	(Constant)	8,365	,292		28,6	,000
		ln_importer_GDP	,834	,011	,574	75,0	,000
		ln_partner_GDP	,878	,012	,557	72,7	,000
		ln_distance_cap	-1,173	,028	-,309	-4,3	,000
		G77_intra	-,657	,055	-,094	-1,2	,000
1985	1	(Constant)	8,173	,292		28,0	,000
		ln_importer_GDP	,832	,011	,570	74,7	,000
		ln_partner_GDP	,894	,012	,572	75,2	,000
		ln_distance_cap	-1,170	,027	-,308	-4,3	,000
		G77_intra	-,625	,054	-,089	-1,1	,000
1986	1	(Constant)	7,413	,292		25,4	,000
		ln_importer_GDP	,846	,011	,583	77,6	,000

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Coefficients<sup>a</sup>

Year	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
		B	Std. Error	Beta			
	In_partner_GDP	,919	,012	,584	78,1	,000	
	In_distance_cap	-1,151	,027	-,296	-4,3	,000	
	G77_intra	-,590	,055	-,083	-1,1	,000	
1987	1	(Constant)	7,450	,290		25,7	,000
	In_importer_GDP	,842	,011	,586	78,5	,000	
	In_partner_GDP	,920	,011	,598	80,4	,000	
	In_distance_cap	-1,168	,027	-,298	-4,3	,000	
	G77_intra	-,538	,055	-,075	-9,8	,000	
1988	1	(Constant)	7,083	,288		24,6	,000
	In_importer_GDP	,851	,010	,594	81,5	,000	
	In_partner_GDP	,950	,011	,622	86,2	,000	
	In_distance_cap	-1,187	,027	-,294	-4,4	,000	
	G77_intra	-,422	,054	-,058	-7,8	,000	
1989	1	(Constant)	7,410	,290		25,6	,000
	In_importer_GDP	,858	,010	,589	82,1	,000	
	In_partner_GDP	,981	,011	,642	90,3	,000	
	In_distance_cap	-1,280	,027	-,309	-4,8	,000	
	G77_intra	-,341	,053	-,046	-6,4	,000	
1990	1	(Constant)	6,959	,295		23,6	,000
	In_importer_GDP	,877	,011	,588	83,2	,000	
	In_partner_GDP	1,020	,011	,653	93,6	,000	
	In_distance_cap	-1,315	,027	-,303	-4,8	,000	
	G77_intra	-,254	,054	-,033	-4,7	,000	
1991	1	(Constant)	7,016	,280		25,1	,000
	In_importer_GDP	,864	,010	,593	85,5	,000	
	In_partner_GDP	1,028	,010	,677	98,6	,000	
	In_distance_cap	-1,314	,027	-,309	-5,0	,000	
	G77_intra	-,262	,051	-,035	-5,1	,000	
1992	1	(Constant)	6,763	,260		26,0	,000
	In_importer_GDP	,871	,010	,595	90,9	,000	

Coefficients<sup>a</sup>

Year	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
		B	Std. Error	Beta			
		In_partner_GDP	1,027	,010	,682	105	,000
		In_distance_cap	-1,301	,025	-,307	-5,2	,000
		G77_intra	-,158	,049	-,021	-3,3	,001
1993	1	(Constant)	6,939	,238		29,2	,000
		In_importer_GDP	,876	,009	,579	95,8	,000
		In_partner_GDP	1,045	,009	,680	113	,000
		In_distance_cap	-1,358	,024	-,323	-5,8	,000
		G77_intra	-,236	,046	-,031	-5,2	,000
1994	1	(Constant)	6,311	,226		27,9	,000
		In_importer_GDP	,922	,009	,604	105	,000
		In_partner_GDP	1,055	,009	,678	119	,000
		In_distance_cap	-1,365	,023	-,321	-6,0	,000
		G77_intra	-,077	,044	-,010	-1,8	,078
1995	1	(Constant)	5,718	,217		26,3	,000
		In_importer_GDP	,932	,008	,595	110	,000
		In_partner_GDP	1,081	,009	,676	127	,000
		In_distance_cap	-1,358	,021	-,317	-6,3	,000
		G77_intra	,008	,042	,001	,182	,856
1996	1	(Constant)	5,574	,215		26,0	,000
		In_importer_GDP	,926	,008	,581	111	,000
		In_partner_GDP	1,109	,008	,685	132	,000
		In_distance_cap	-1,381	,021	-,319	-6,5	,000
		G77_intra	-,047	,041	-,006	-1,1	,252
1997	1	(Constant)	5,223	,210		24,8	,000
		In_importer_GDP	,945	,008	,576	115	,000
		In_partner_GDP	1,112	,008	,678	136	,000
		In_distance_cap	-1,364	,021	-,312	-6,6	,000
		G77_intra	-,071	,040	-,009	-1,8	,076
1998	1	(Constant)	4,974	,210		23,7	,000
		In_importer_GDP	,923	,008	,555	112	,000

Coefficients<sup>a</sup>

Year	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
		B	Std. Error	Beta			
	In_partner_GDP	1,130	,008	,685	138	,000	
	In_distance_cap	-1,325	,020	-,305	-66	,000	
	G77_intra	-,012	,039	-,002	-,31	,754	
1999	1	(Constant)	4,647	,209		22,2	,000
	In_importer_GDP	,950	,008	,565	117	,000	
	In_partner_GDP	1,155	,008	,683	141	,000	
	In_distance_cap	-1,366	,020	-,307	-68	,000	
	G77_intra	,072	,039	,009	1,85	,064	
2000	1	(Constant)	5,328	,211		25,3	,000
	In_importer_GDP	,944	,008	,552	115	,000	
	In_partner_GDP	1,141	,008	,674	141	,000	
	In_distance_cap	-1,419	,020	-,312	-70	,000	
	G77_intra	,000	,039	,000	,006	,995	
2001	1	(Constant)	5,080	,212		24,0	,000
	In_importer_GDP	,941	,008	,542	115	,000	
	In_partner_GDP	1,167	,008	,681	145	,000	
	In_distance_cap	-1,422	,020	-,309	-70	,000	
	G77_intra	,064	,039	,008	1,66	,098	
2002	1	(Constant)	4,683	,214		21,9	,000
	In_importer_GDP	,935	,008	,534	114	,000	
	In_partner_GDP	1,186	,008	,687	147	,000	
	In_distance_cap	-1,403	,020	-,302	-69	,000	
	G77_intra	,151	,039	,018	3,91	,000	
2003	1	(Constant)	4,303	,216		19,9	,000
	In_importer_GDP	,950	,008	,541	116	,000	
	In_partner_GDP	1,202	,008	,688	148	,000	
	In_distance_cap	-1,421	,020	-,303	-70	,000	
	G77_intra	,250	,039	,030	6,44	,000	
2004	1	(Constant)	3,918	,222		17,7	,000
	In_importer_GDP	,955	,008	,534	115	,000	

Coefficients<sup>a</sup>

Year	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
		B	Std. Error	Beta			
		In_partner_GDP	1,226	,008	,692	149	,000
		In_distance_cap	-1,436	,021	-,300	-6,9	,000
		G77_intra	,391	,039	,046	9,95	,000
2005	1	(Constant)	3,787	,226		16,7	,000
		In_importer_GDP	,942	,008	,521	112	,000
		In_partner_GDP	1,238	,008	,689	148	,000
		In_distance_cap	-1,432	,021	-,296	-6,8	,000
		G77_intra	,338	,040	,040	8,48	,000
2006	1	(Constant)	3,253	,229		14,2	,000
		In_importer_GDP	,944	,008	,513	111	,000
		In_partner_GDP	1,257	,008	,687	150	,000
		In_distance_cap	-1,416	,021	-,288	-6,6	,000
		G77_intra	,363	,040	,042	9,10	,000
2007	1	(Constant)	3,048	,232		13,2	,000
		In_importer_GDP	,943	,009	,509	111	,000
		In_partner_GDP	1,255	,008	,686	149	,000
		In_distance_cap	-1,410	,021	-,286	-6,6	,000
		G77_intra	,441	,040	,051	11,0	,000
2008	1	(Constant)	2,925	,237		12,4	,000
		In_importer_GDP	,927	,009	,494	108	,000
		In_partner_GDP	1,270	,009	,684	149	,000
		In_distance_cap	-1,410	,022	-,283	-6,5	,000
		G77_intra	,398	,040	,046	9,88	,000
2009	1	(Constant)	3,118	,232		13,5	,000
		In_importer_GDP	,927	,009	,494	108	,000
		In_partner_GDP	1,283	,009	,687	150	,000
		In_distance_cap	-1,452	,021	-,294	-6,8	,000
		G77_intra	,324	,039	,038	8,23	,000
2010	1	(Constant)	3,138	,233		13,5	,000
		In_importer_GDP	,933	,009	,492	109	,000

**Coefficients<sup>a</sup>**

Year	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
		B	Std. Error	Beta			
	In_partner_GDP	1,286	,009	,684	151	,000	
	In_distance_cap	-1,478	,022	-,294	-6,8	,000	
	G77_intra	,308	,040	,035	7,79	,000	
2011	1	(Constant)	3,165	,236		13,4	,000
	In_importer_GDP	,934	,009	,490	108	,000	
	In_partner_GDP	1,289	,009	,682	151	,000	
	In_distance_cap	-1,494	,022	-,293	-6,8	,000	
	G77_intra	,280	,040	,032	7,03	,000	
2012	1	(Constant)	3,241	,237		13,7	,000
	In_importer_GDP	,928	,009	,484	107	,000	
	In_partner_GDP	1,280	,009	,678	149	,000	
	In_distance_cap	-1,481	,022	-,291	-6,7	,000	
	G77_intra	,169	,040	,019	4,27	,000	
2013	1	(Constant)	3,299	,238		13,8	,000
	In_importer_GDP	,928	,009	,481	106	,000	
	In_partner_GDP	1,282	,009	,674	148	,000	
	In_distance_cap	-1,498	,022	-,294	-6,8	,000	
	G77_intra	,144	,040	,016	3,62	,000	

a. Dependent Variable: In\_flow\_value

### Appendix 3

Model summaries and coefficient statistics for the models when a dummy variable for trade involving the North is included. The name of the North trade dummy variable is 'North\_at\_all'.

Model Summary

Year	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1980	1	,773 <sup>a</sup>	,598	,598	2,09866
1981	1	,771 <sup>b</sup>	,594	,594	2,12551
1982	1	,776 <sup>a</sup>	,602	,602	2,09442
1983	1	,775 <sup>a</sup>	,601	,601	2,08514
1984	1	,775 <sup>a</sup>	,601	,601	2,08298
1985	1	,777 <sup>a</sup>	,603	,603	2,06686
1986	1	,785 <sup>a</sup>	,617	,617	2,06982
1987	1	,787 <sup>a</sup>	,620	,619	2,08643
1988	1	,789 <sup>a</sup>	,623	,623	2,12167
1989	1	,786 <sup>a</sup>	,618	,618	2,17158
1990	1	,784 <sup>a</sup>	,615	,615	2,26677
1991	1	,790 <sup>a</sup>	,625	,625	2,19165
1992	1	,790 <sup>a</sup>	,624	,623	2,19881
1993	1	,791 <sup>a</sup>	,626	,626	2,21858
1994	1	,800 <sup>a</sup>	,640	,639	2,20375
1995	1	,803 <sup>a</sup>	,645	,645	2,20873
1996	1	,809 <sup>a</sup>	,654	,654	2,19515
1997	1	,811 <sup>a</sup>	,658	,658	2,19905
1998	1	,806 <sup>a</sup>	,650	,650	2,20640
1999	1	,809 <sup>a</sup>	,655	,655	2,24463
2000	1	,802 <sup>c</sup>	,644	,644	2,31378
2001	1	,804 <sup>c</sup>	,646	,646	2,32582
2002	1	,801 <sup>a</sup>	,641	,641	2,34935
2003	1	,802 <sup>c</sup>	,643	,643	2,36598
2004	1	,799 <sup>c</sup>	,638	,638	2,42341
2005	1	,794 <sup>c</sup>	,631	,631	2,47286
2006	1	,793 <sup>c</sup>	,629	,628	2,51314
2007	1	,792 <sup>c</sup>	,628	,628	2,52108
2008	1	,788 <sup>c</sup>	,621	,621	2,56610
2009	1	,791 <sup>c</sup>	,626	,625	2,52147
2010	1	,790 <sup>c</sup>	,624	,624	2,56694
2011	1	,788 <sup>c</sup>	,622	,622	2,59127
2012	1	,786 <sup>c</sup>	,617	,617	2,60252
2013	1	,785 <sup>c</sup>	,616	,616	2,61027

a. Predictors: (Constant), North\_at\_all, ln\_distance\_cap, ln\_partner\_GDP, ln\_importer\_GDP

b. Predictors: (Constant), North\_at\_all, ln\_partner\_GDP, ln\_distance\_cap, ln\_importer\_GDP

c. Predictors: (Constant), North\_at\_all, ln\_distance\_cap, ln\_importer\_GDP, ln\_partner\_GDP

Coefficients<sup>a</sup>

Year	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
1980	1	(Constant)	8,123	,288		28,21	,000
		In_importer_GDP	,808	,012	,541	69,09	,000
		In_partner_GDP	,837	,012	,520	67,70	,000
		In_distance_cap	-1,175	,029	-,306	-41,1	,000
		North_at_all	1,201	,054	,177	22,19	,000
1981	1	(Constant)	8,277	,273		30,28	,000
		In_importer_GDP	,796	,011	,547	73,34	,000
		In_partner_GDP	,848	,012	,532	71,93	,000
		In_distance_cap	-1,191	,028	-,309	-43,1	,000
		North_at_all	1,159	,052	,170	22,37	,000
1982	1	(Constant)	8,418	,268		31,36	,000
		In_importer_GDP	,795	,011	,553	74,47	,000
		In_partner_GDP	,861	,012	,545	73,81	,000
		In_distance_cap	-1,216	,027	-,318	-44,5	,000
		North_at_all	1,065	,052	,157	20,65	,000
1983	1	(Constant)	8,354	,272		30,71	,000
		In_importer_GDP	,812	,011	,554	74,18	,000
		In_partner_GDP	,855	,012	,537	72,35	,000
		In_distance_cap	-1,228	,027	-,323	-45,0	,000
		North_at_all	1,105	,052	,163	21,42	,000
1984	1	(Constant)	8,293	,269		30,85	,000
		In_importer_GDP	,812	,011	,559	75,16	,000
		In_partner_GDP	,860	,012	,546	73,56	,000
		In_distance_cap	-1,220	,027	-,322	-44,9	,000
		North_at_all	1,065	,051	,157	20,73	,000
1985	1	(Constant)	8,164	,268		30,47	,000
		In_importer_GDP	,807	,011	,553	74,74	,000
		In_partner_GDP	,875	,012	,559	76,07	,000
		In_distance_cap	-1,217	,027	-,320	-45,2	,000
		North_at_all	1,050	,051	,156	20,75	,000
1986	1	(Constant)	7,470	,268		27,86	,000
		In_importer_GDP	,819	,011	,565	77,24	,000
		In_partner_GDP	,895	,011	,569	78,43	,000
		In_distance_cap	-1,191	,027	-,307	-44,7	,000
		North_at_all	1,002	,051	,146	19,67	,000
1987	1	(Constant)	7,631	,264		28,88	,000
		In_importer_GDP	,810	,010	,564	77,82	,000
		In_partner_GDP	,889	,011	,578	80,03	,000
		In_distance_cap	-1,206	,027	-,307	-45,4	,000
		North_at_all	1,011	,051	,147	19,87	,000

Coefficients<sup>a</sup>

Year	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
1988	1	(Constant)	7,374	,264		27,88	,000
		In_importer_GDP	,818	,010	,570	80,45	,000
		In_partner_GDP	,921	,011	,602	85,87	,000
		In_distance_cap	-1,225	,026	-,304	-46,5	,000
		North_at_all	,896	,050	,127	17,82	,000
1989	1	(Constant)	7,739	,268		28,85	,000
		In_importer_GDP	,826	,010	,568	80,98	,000
		In_partner_GDP	,953	,011	,623	89,94	,000
		In_distance_cap	-1,317	,027	-,318	-49,5	,000
		North_at_all	,799	,050	,112	16,03	,000
1990	1	(Constant)	7,409	,274		27,02	,000
		In_importer_GDP	,842	,010	,565	81,50	,000
		In_partner_GDP	,988	,011	,632	92,32	,000
		In_distance_cap	-1,347	,027	-,311	-49,5	,000
		North_at_all	,716	,051	,097	13,98	,000
1991	1	(Constant)	7,185	,262		27,39	,000
		In_importer_GDP	,845	,010	,579	84,34	,000
		In_partner_GDP	1,010	,010	,665	97,89	,000
		In_distance_cap	-1,335	,026	-,314	-50,4	,000
		North_at_all	,518	,050	,072	10,41	,000
1992	1	(Constant)	6,925	,249		27,86	,000
		In_importer_GDP	,856	,010	,585	89,07	,000
		In_partner_GDP	1,012	,010	,672	102,9	,000
		In_distance_cap	-1,314	,025	-,310	-52,2	,000
		North_at_all	,351	,047	,049	7,399	,000
1993	1	(Constant)	6,929	,230		30,14	,000
		In_importer_GDP	,866	,009	,573	94,23	,000
		In_partner_GDP	1,037	,009	,674	111,9	,000
		In_distance_cap	-1,368	,024	-,326	-58,0	,000
		North_at_all	,357	,044	,049	8,093	,000
1994	1	(Constant)	6,478	,220		29,50	,000
		In_importer_GDP	,908	,009	,595	103,3	,000
		In_partner_GDP	1,042	,009	,670	117,5	,000
		In_distance_cap	-1,374	,023	-,323	-60,8	,000
		North_at_all	,267	,042	,036	6,317	,000
1995	1	(Constant)	5,909	,212		27,88	,000
		In_importer_GDP	,920	,009	,587	108,1	,000
		In_partner_GDP	1,069	,009	,669	124,6	,000
		In_distance_cap	-1,363	,021	-,318	-63,4	,000
		North_at_all	,169	,040	,023	4,183	,000

Coefficients<sup>a</sup>

Year	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
1996	1	(Constant)	5,874	,209		28,09	,000
		In_importer_GDP	,904	,008	,567	107,9	,000
		In_partner_GDP	1,089	,008	,672	128,7	,000
		In_distance_cap	-1,389	,021	-,321	-66,0	,000
		North_at_all	,349	,039	,047	8,868	,000
1997	1	(Constant)	5,466	,205		26,63	,000
		In_importer_GDP	,925	,008	,563	111,3	,000
		In_partner_GDP	1,093	,008	,667	132,4	,000
		In_distance_cap	-1,369	,021	-,313	-66,8	,000
		North_at_all	,345	,038	,046	9,004	,000
1998	1	(Constant)	5,254	,205		25,67	,000
		In_importer_GDP	,903	,008	,543	108,3	,000
		In_partner_GDP	1,110	,008	,673	134,5	,000
		In_distance_cap	-1,328	,020	-,306	-66,0	,000
		North_at_all	,291	,038	,039	7,721	,000
1999	1	(Constant)	5,004	,205		24,40	,000
		In_importer_GDP	,927	,008	,551	112,7	,000
		In_partner_GDP	1,133	,008	,669	136,9	,000
		In_distance_cap	-1,366	,020	-,307	-67,8	,000
		North_at_all	,255	,038	,033	6,757	,000
2000	1	(Constant)	5,723	,206		27,75	,000
		In_importer_GDP	,916	,008	,536	110,7	,000
		In_partner_GDP	1,113	,008	,657	135,7	,000
		In_distance_cap	-1,421	,020	-,313	-69,9	,000
		North_at_all	,389	,038	,050	10,27	,000
2001	1	(Constant)	5,583	,207		26,98	,000
		In_importer_GDP	,908	,008	,523	109,7	,000
		In_partner_GDP	1,135	,008	,662	138,8	,000
		In_distance_cap	-1,423	,020	-,309	-70,2	,000
		North_at_all	,399	,038	,051	10,60	,000
2002	1	(Constant)	5,222	,210		24,91	,000
		In_importer_GDP	,904	,008	,516	108,3	,000
		In_partner_GDP	1,157	,008	,670	140,5	,000
		In_distance_cap	-1,405	,020	-,303	-68,9	,000
		North_at_all	,283	,038	,036	7,468	,000
2003	1	(Constant)	4,968	,212		23,45	,000
		In_importer_GDP	,916	,008	,521	110,0	,000
		In_partner_GDP	1,169	,008	,669	141,1	,000
		In_distance_cap	-1,420	,020	-,303	-69,7	,000
		North_at_all	,232	,038	,029	6,091	,000

Coefficients<sup>a</sup>

Year	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
2004	1	(Constant)	4,739	,218		21,79	,000
		In_importer_GDP	,917	,008	,514	108,7	,000
		In_partner_GDP	1,190	,008	,671	142,1	,000
		In_distance_cap	-1,434	,021	-,300	-69,2	,000
		North_at_all	,154	,039	,019	3,987	,000
2005	1	(Constant)	4,659	,222		21,03	,000
		In_importer_GDP	,899	,009	,497	105,5	,000
		In_partner_GDP	1,197	,008	,666	141,2	,000
		In_distance_cap	-1,432	,021	-,296	-68,0	,000
		North_at_all	,273	,039	,034	7,011	,000
2006	1	(Constant)	4,134	,225		18,39	,000
		In_importer_GDP	,903	,009	,490	105,3	,000
		In_partner_GDP	1,217	,009	,665	142,6	,000
		In_distance_cap	-1,416	,021	-,288	-66,4	,000
		North_at_all	,267	,039	,032	6,836	,000
2007	1	(Constant)	4,023	,227		17,72	,000
		In_importer_GDP	,901	,009	,486	104,7	,000
		In_partner_GDP	1,214	,009	,663	142,6	,000
		In_distance_cap	-1,410	,021	-,286	-66,1	,000
		North_at_all	,207	,039	,025	5,297	,000
2008	1	(Constant)	3,908	,232		16,86	,000
		In_importer_GDP	,883	,009	,470	101,5	,000
		In_partner_GDP	1,226	,009	,660	142,2	,000
		In_distance_cap	-1,410	,022	-,283	-65,2	,000
		North_at_all	,288	,039	,035	7,334	,000
2009	1	(Constant)	3,998	,227		17,59	,000
		In_importer_GDP	,885	,009	,472	102,5	,000
		In_partner_GDP	1,241	,009	,664	143,8	,000
		In_distance_cap	-1,451	,021	-,294	-68,3	,000
		North_at_all	,322	,039	,039	8,348	,000
2010	1	(Constant)	3,955	,229		17,28	,000
		In_importer_GDP	,894	,009	,471	103,3	,000
		In_partner_GDP	1,246	,009	,663	144,9	,000
		In_distance_cap	-1,477	,022	-,293	-68,3	,000
		North_at_all	,336	,039	,040	8,688	,000
2011	1	(Constant)	3,924	,232		16,91	,000
		In_importer_GDP	,897	,009	,471	103,3	,000
		In_partner_GDP	1,251	,009	,662	145,0	,000
		In_distance_cap	-1,493	,022	-,293	-68,1	,000
		North_at_all	,344	,039	,041	8,870	,000

Coefficients<sup>a</sup>

Year	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
2012	1	(Constant)	3,867	,232		16,63	,000
		In_importer_GDP	,895	,009	,467	102,4	,000
		In_partner_GDP	1,246	,009	,660	144,3	,000
		In_distance_cap	-1,481	,022	-,291	-67,5	,000
		North_at_all	,397	,039	,047	10,27	,000
2013	1	(Constant)	3,945	,234		16,89	,000
		In_importer_GDP	,893	,009	,463	101,8	,000
		In_partner_GDP	1,246	,009	,655	143,5	,000
		In_distance_cap	-1,499	,022	-,294	-68,1	,000
		North_at_all	,446	,039	,053	11,51	,000

a. Dependent Variable: In\_flow\_value

### General note on the appendices:

In order to keep the appendices within reasonable length, they only include the model summaries as well as the coefficient statistics. Other tables such as the ANOVA or residual statistics can be provided upon request from the author.