

Mixing Politics and Economics

Understanding the Rise of FTAs in East Asia

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Abstract

This study tests whether the rise of free trade agreements (FTAs) in East Asia since 2000 has been an attempt to manage the growing complexity of trade both between members of that region and each other, as well as between them and the rest of the world. The study uses a measure of dependency based on GDP, as well as a measure of intraindustry trade as indicators. Descriptive statistics showed that there were increases in both measures for most countries towards both the region and the rest of the world during the period of 1995 and 2010. Moreover, inferential statistics showed that only intraindustry trade for the Southeast Asian countries correlated with comprehensiveness of the FTAs (as measured by number of WTO-plus provisions in the FTA). The Northeast countries of China, Japan and South Korea were found to have higher numbers of both FTAs and provisions within those agreements than would be expected, if the theory and the indicators would hold. The study provides contributions both to the understanding of Asian institutionalization as well as the methodological approaches available to test the neoliberal institutionalist argument for FTAs.

Key words: Asia, Asian regionalism, free trade agreements, functionalism, neoliberal institutionalism

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List of Abbreviations

AMF	-	Asian Monetary Fund
APEC	-	Asia-Pacific Economic Cooperation
APT	-	ASEAN Plus Three
ASEAN	-	Association of Southeast Asian Nations
CMI	-	Chiang Mai Initiative
EU	-	European Union
FDI	-	Foreign Direct Investment
FTA	-	Free Trade Agreement
GDP	-	Gross Domestic Product
IMF	-	International Monetary Fund
IRR	-	Incident Rate Ratio
OECD	-	Organization for Economic Co-operation and Development
OLS	-	Ordinary Least Squares
PTA	-	Preferential Trade Agreement
ROO	-	Rules of Origin
SITC	-	Standard International Trade Classification
UN	-	United Nations
WTO	-	World Trade Organization

1 Introduction

1.1 The Puzzle of Free Trade Agreements in East Asia

The second half of the 20th century has seen the remarkable economic rise of East Asia (World Bank 1993). This rise is unprecedented in history as it has brought hundreds of millions of people out of poverty within the span of a few short decades. Within economics, this rise has prompted great debate about the causes behind the growth and its implications for economic models generally. Within political spheres it has prompted many to wonder about its implications for the balance of power in the international system. There are many ways to interpret these changes, depending on one's theoretical outlook. Some may view this as a largely positive affair, focusing on the great welfare increases it brought with it, while others may view these changes with fear, foreseeing an almost inevitable clash (Mearsheimer 2006). On the whole, these changes are confusing and hard to interpret.

Until very recently, the governments of East Asia have largely avoided creating international political-economic institutions. This however, has begun to change. Perhaps the first, and most important of those changes within the Asian sphere, which has led to great interest and debate in the academic literature, is the enormous rise of free trade agreements (FTAs) in Asia. Before 2000 there were only a handful of FTAs in Asia, however, after 2000 FTA growth increased substantially, putting Asia currently at the forefront of the world in FTA construction (Kawai and Wignaraja 2013). This change in policy has brought about great debate among scholars of the Asian region. The explanations offered have however, to a large extent, downplayed the possibility that economics were a motivating factor, favoring instead security or constructivist based explanations (Aggarwal and Govella 2013; Dent 2013; Lee 2013; Ravenhill 2010; Hoadley 2007; Sally 2006).

These arguments have often put focus on the effects of the 1997 Asian financial crisis. This crisis, allegedly, taught leaders in Asia both that they could not rely on support from the outside world – many were disgusted by their treatment by the International Monetary Fund (IMF) (Higgott 1998), as well as the fact that they could be so strongly affected by economic events elsewhere in the world. This provoked a sense of togetherness which did not exist to the same degree previously in East Asia. It would be mistaken though, to say that the arguments have completely neglected the economic side. It has been argued that once bilateral FTAs begin to be signed, a sort of economic domino effect can take over as countries and their corporations would fear being excluded from

preferential trading schemes, thus incentivizing them to form FTAs in response, with a resultant chain-reaction emerging, as the logic spreads within the international system (Baldwin 1993).

In addition to this domino theory, FTAs being used to promote further trade, especially within the southeast Asian countries, has been accepted as a possible factor leading to FTA growth (Hamanaka 2012). However, what has been largely neglected is a strong examination of whether growing economic interdependence, and the growing complexity of economic relationships in general, could be a large factor in the growth of FTAs in Asia. This argument, which Hurrell (1995) attributes to neoliberal institutionalism, although it is fairly common within liberal theoretical frameworks generally,¹ is that as economic interdependence increases, coordination problems emerge which warrant management by government actors through the creation of institutions. This could, indeed, be part of the explanation for the rise of FTAs in Asia. Examination of this possibility has been largely absent from the literature (Hamanaka 2012).

There have been a great number of studies on the effects of FTAs on interdependence (Petri, Plummer and Zhai 2011; Ando and Urata 2007; Plummer and Wignaraja 2006), but there have been very few on the role of interdependence in the construction of FTAs (Hamanaka 2012; Ravenhill 2010). Those few studies, moreover, which have attempted to assess the role that economic interdependence may have played in the creation of these FTAs, have generally avoided looking at individual levels of interdependence between countries, and instead have focused on regional-level measures of integration. Thus, while some argue that regional economic integration has increased (Kawai and Wignaraja 2013), which may lead to the construction of these FTAs, others have argued that regional economic interdependence has actually stagnated (Ravenhill 2010), thus ruling out a potential interdependence argument. In both cases though, FTA growth is seen as a regional affair.

There are several problems with this debate. Measures of economic interdependence at the regional level neglect the reality that approximately 50% of the FTAs are signed with countries outside of the region. Measuring the degree of regional inward-focused trading does not at all answer the question of why there has been a parallel increase in both regional and global FTA construction from Asia. While the growth of the FTAs may be related to regionalism, it is a mistake to purely analyze the issue as if it is *only* regional in nature. Moreover, by using region-wide measures, individual country differences in levels of interdependence as well as FTA strategies are neglected. Despite being relatively understudied, analyzing the economic precursors to FTA creation can provide great understanding for the growing institutionalization in Asia, and in the world in general. It can help shed light on both regional integration as well as globalization. This is the starting point for my thesis.

¹ This argument is also sometimes referred to as 'functional' (Rosamond 2000:144).

1.2 Purpose and Research Questions

The overarching aim of this paper is to examine the economic motives behind FTA creation within the East Asian region, specifically whether FTAs have been created to manage existing economic relationships, which is to say, to solve problems which have emerged due to strengthened economic ties. In doing this, I will have both theory-testing and theory-building elements in my thesis.

This thesis poses the following two questions:

(1) To what extent have FTAs in East Asia been created to manage complicated economic relationships?

This is the primary focus on of the paper, and I will attempt to analyze the question from two directions. First, does the increase in FTAs match an increase in trade interdependence and intraindustry trade, which I will propose as measures of this relationship? And second, are more complicated economic relationships leading to more complicated FTAs? This is essential to establish the link to economic management.

(2) How do these economic measures vary between regional and non-regional relationships?

This question may seem quite tangential in relation to my first one, but I would argue that given how situated FTAs are in the regionalism debate, it is necessary to say something about the regional nature of what is going on. I am not able in this paper to analyze the regional nature of the FTAs themselves, but I can analyze how these measures are regionally oriented. Thus, if they are linked to FTA creation, it will say something indirectly about regionalism.

In analyzing these two questions, this paper will also serve some theory-building purposes. This paper will *not* develop the actual arguments within the theory. There is much room to do that, but that is not the paper's purpose. Instead, this paper will argue that the measures used in previous research, especially research on the Asian sphere, are problematic. Alternative measures will be proposed and argued for. Also, most research thus far into this question (both for Asian FTAs and non-Asian ones) has focused on FTA creation, whereas to analyze the question in depth, it is necessary, as Hamanaka points out (2012), to analyze the depth and coverage of FTAs to see if the FTAs become more complex when the existing economic relationships are complex. In order to

analyze that angle, I will propose and use a new method which I hope can help shed light on this question.

1.3 Previous Research

As noted earlier, studies on the effect of economic interdependence on FTA growth have in general been quite limited, focusing instead on regional zero-sum measures of interdependence. These measures assess to what degree countries within a particular region are biased toward trade with each other, at the expense of other countries outside of the region. This does not, I would argue, actually measure overall changes in economic interdependence.² Hamanaka (2012) is an exception to this, where he looks at individual trade shares within Asia and argues that more economically interdependent relationships have produced more comprehensive FTAs. This is in line with my thesis, however, it is applied solely to the Asian region.

While few studies have directly looked at quantitative changes in economic interdependence and its connection with FTA creation, many studies have instead chosen to look at possible mechanisms by which interdependence could affect FTA creation, thus studying the issue indirectly. These studies have generally looked at business engagement both in the creation and shaping of FTAs as well as actual usage rates of FTAs.

Ravenhill (2010) concludes that the functional argument is weak in the case of Asian FTAs, arguing that it is not merely the lack of a quantitative change which excludes a likely interdependence-based argument, but the lack of evidence of private-sector engagement as well as low levels of FTA strength which makes the case stronger. Many studies have found a very large degree of apathy toward FTAs in Asia on the part of business interests. This includes both apathy toward the creation of FTAs, with low engagement either as campaigners for FTA construction, or as consultants during the process. For an excellent overview of the extensive research into this, see Postigo (2013).³ These findings have included almost the entirety of the Asian region, perhaps only with the exception of Japan, where businesses have been found to be strongly engaged in the FTA creation process, with some businesses actively campaigning for FTAs and others against (Solis 2010; Manger 2005).

In addition to the lack of private sector engagement in FTA construction, there have been

2 In the methodological chapter I will have a much more thorough discussion on these measures, their problems, and my alternative measures which I believe may better assess changes in interdependence.

3 This research is not completely unanimous. Postigo (2013) finds, for example, evidence of the business sector in Thailand and Malaysia playing an important role as government advisors during the FTA construction process, and that, moreover, the process by which the private sector is consulted has been streamlined and developed over time.

low FTA utilization rates (Kawai and Wignaraja 2011; Ravenhill 2010; Baldwin 2008). These rates have been quite low when seen in comparison to other regions, as well as quite low in absolute numbers. There is some evidence, however, that, at least in the cases of Thailand and Vietnam rates have increased substantially in recent years (Kawai and Wignaraja 2013). Strongly tied to the argument that rates have been low is the argument that the FTAs themselves have been weak. The benefits to using the FTAs have been low, in part due to already low tariff rates. Moreover, due to the so-called "Noodle bowl" effect (Baldwin 2008), there is a lack of harmonization between different agreements, specifically with regard to Rules of Origin (ROOs), which further reduces their economic benefits.⁴ However, the general strength of the FTAs in Asia, as well as the extent of their coverage has increased substantially throughout this period (Kawai and Wignaraja 2013).

Put together, these arguments seem quite strong against neoliberal institutionalist argument. The FTAs are seen as weak, and businesses are unconcerned either with using them or in their creation.⁵ However, these arguments focus on proposed causal mechanisms. Even if businesses are unengaged and uninterested, the governments may still be modeling their policies after economic incentives, namely the desire to manage economic complexities. Thus, even with low business engagement the economic interdependence argument can be salvaged, although the mechanism of action (private-sector campaigning) may be challenged.

While this issue is very important and understudied for Asia, it is similarly understudied at the global level. Generally FTA creation is treated as exogenous, and so not explained by other factors. The first systematic study of the economic determinants of FTA creation was done as late as 2004 by Baier and Bergstrand (2004), which found strong evidence for certain economic characteristics being predictors of FTA creation. This study found that geographic proximity, size and similarity of the economy, as well as differences in labor ratios, are predictors of FTA creation. Since then, there have been few studies which have followed-up on this research, and thus the area remains severely understudied (Baldwin and Jaimovich 2012). Baldwin and Jaimovich (*ibid*) studied whether or not FTAs are "contagious," as Baldwin's domino theory predicts, and found that they indeed were. However, these studies have focused only on FTA creation, and not whether the complexity of the FTAs correspond to the complexity of the economic relationships, as would be needed to properly assess the neoliberal institutionalist argument. Thus, this issue is ripe for investigation.

4 "Noodle bowl" Asia refers to the fact that there are many FTAs and that they overlap and have different rules, which presents a disordered image of economic institutionalization, as opposed to, for example, the ideal of a single free trade area (Baldwin 2008).

5 The increased strength of the FTAs, as well as their increased use does seem to weaken that argument slightly.

1.4 Structure of the Thesis

First I will provide a brief background to the topic. This will consist of two sections which cover economic development in Asia as well as the history of regional integration efforts in the region. The purpose of this section is not to be comprehensive, but rather to give the later arguments a background in which to be situated. Next, in the theory chapter, I will discuss the central theoretical argument of this paper, namely that institutions are created to manage problems which emerge from economic ties. I am referring to this as the neoliberal institutionalist argument. Also in the theory chapter will be a section on the relationship between this argument and regionalism, as well as a brief discussion on the acceptability of applying "Western" theories in an Eastern context.

After the theory chapter I will discuss the quantitative methodology I employ. This chapter will include a discussion on its potential uses and limitations. There will also be an extensive discussion on the different indicators I chose to use, why I chose them, and how they can be calculated. This section will also discuss the empirical strategy the paper undertakes and the data sources to be used. Chapter 5 will present my empirical findings as well as discuss how they can be interpreted and what conclusions will be drawn. The chapter begins with descriptive statistics, in which the distribution of FTAs is looked at, as well as the trends in dependency and intraindustry trade for the countries in question. This is followed by a section in which inferential statistics are employed, in order to see if the comprehensiveness of FTAs can be predicted by interdependence or intraindustry trade. Finally I will end with a conclusions chapter which will summarize the results found, attempt to assess their contributions, and present ideas for further research. It is worth noting that chapter 5 will continue many of the discussions present in the theory and methodology chapters, as this paper is partly focused on theory-development. Moreover, many methodological issues regarding how specific tests were done are discussed in that chapter as well, as it seems more appropriate than front-loading everything into the methodological chapter.

2 Historical Background

The purpose of this chapter is to provide a background to the economic history of the East Asian region, as well as a history of its regional development, and the characteristics of that development. There is no intention here of being comprehensive. In fact, I hope the reader will forgive my brevity. Comprehensiveness would be an overwhelming task which, for the purposes of this thesis, would be largely unnecessary. In the regional-development section, the focus is only on a few select organizations. Other organizations, both failed and successful, are ignored. This is not to say their roles have been insignificant, or their existences irrelevant – the focus here is, however, just on the most critical elements of Asian regional development, and the most critical ideas which emerge from that development.

2.1 Economic History

The so-called “Asian Miracle” is the unprecedented growth seen among East Asian countries during the 20th century which continues to extend into today (World Bank 1993). This growth began in Japan, spread to the so-called “Asian Tiger” economies of Hong Kong, Singapore, South Korea (hereafter, Korea) and Taiwan, and then continued further to China and the “Tiger Cub” economies of Indonesia, Malaysia, the Philippines, and Thailand. The sustained growth of these economies has led to extensive poverty reduction in that part of the world (Quibria 2002). China alone, according to their official statistics, has brought approximately 200 million people out of poverty, and there is reason to believe that this is actually an underestimation (Yao 2000).

The remarkable growth of these countries, over such a sustained period of time has led to an immense amount of research into its possible causes. An “Asian Model” of growth has subsequently been conceived.⁶ This model tends to stress several features, which Park (2002:338) specifies:

- (1) These countries (economies) have all pursued export-oriented development strategies;
- (2) They have been successful in maintaining high rates of saving and investment;
- (3) Emphasis has been placed on promoting universal education and making enormous investments in human capital so as to better absorb and adapt the most advanced technology;
- (4) For almost all of the East Asian economies, with the exception of Hong Kong, industrial policies were an important part of their growth strategies.

⁶ In recent times there has also been research into a so-called “Beijing Consensus” (Ramo 2004) as a competitor to the “Washington Consensus”.

Furthermore, in all of these countries, the government itself took a responsible role in promoting growth (ibid).

The problem with talk of an Asian model is that it can give the impression that there is uniformity in the growth strategies of the Asian countries, where in fact what you see is similarity instead, with a great deal of individual differentiation. For example, for many the “Asian Model” is synonymous with a strong industrial policy. And that the reason these countries have all succeeded so well is due to that industrial policy, which advocates argue can alter market incentives, to induce investment into what would be risky ventures in critical or beneficial industries, more so than would occur without the intervention of the government (Wade 2003). However, while this may seem central to the growth of Asia as a whole, it neglects the fact that not all countries had strong industrial policies (Quibria 2002). Thailand, for example, was almost completely absent an industrial policy. While the government did attempt some meager interventions, they were largely economically incoherent and poorly coordinated (ibid).

It is clear that *something* happened (and is happening) in Asia which brought forth such incredible growth rates. It is just unclear what *exactly* it is, due to the variety of models tried. What is clear is that as countries grew, their success propelled other countries forward. This has been named the “flying geese” hypothesis, and it predicts that as countries become more wealthy they will invest in less wealthy countries and offshore much of their production (Lin 2011). Thus one would expect to see tiered levels of development, which is in fact what one sees in Asia. This, importantly for my paper, anticipated the beginning of regionalization in Asia.

Although it had begun to some degree earlier, it was the appreciation of the yen after the Plaza Accord in 1985 which truly began the process of regionalization in East Asia. As Munakata writes:

It first prompted Japanese firms to relocate their labor-intensive production process to lower-cost countries, causing a surge in export-oriented FDI to ASEAN countries. Manufacturers in newly industrializing economies, such as Korea and Taiwan, followed suit as their currencies also appreciated against the U.S. dollar (2006:134).

This process, it should be pointed out, is continuing today, with China now rapidly increasing its outward Foreign Direct Investment (FDI) (Morck, Yeung and Zhao 2008).

While the Plaza Accord may have been the first major turning point for Asian regionalization, many argue, as was discussed briefly in the introduction, that a second turning point occurred more recently – the 1997 East Asian financial crisis. Before this period, the IMF viewed this region as economically stable, but suddenly after the crisis, the IMF demanded strong reforms,

as they perceived the countries' institutions as rotten (Stiglitz 2002:90). Furthermore, IMF policies imposed during the crisis may have worsened conditions for people living these countries – not to mention that their policies before the crisis may have actually contributed to its onset (ibid:89). This reaction from the international community led to a great deal of resentment within the Asian region (Higgott 1998) and, as discussed briefly in the introduction, is argued to have increased the focus on state-led regional measures in Asia (Dent 2013; Munakata 2006).

2.2 Asian Regionalism

Before beginning a discussion on Asian regional development, it is critical to explain the difference in the literature between regionalization and regionalism. As Hurrell (1995:334) puts it: “Regionalization refers to the growth of societal integration within a region and to the often undirected processes of social and economic interaction.” This can include increasing trade, more complex trade, including an increase in intra-industry trade, increased migration, greater social interaction, etc. (ibid). These processes, it is theorized, may lead to development of a regional identity and/or formal institutional regional organizations and bindings. The increasing FDI throughout Asia and the establishment of production networks in the wake of the Plaza Accord are examples of this regionalization. Regionalism in contrast, refers to the institutional arrangements constructed by governments in order to facilitate closer integration, whether that is economic integration or political/security integration (Munakata 2006:130).

The first major Asian regional organization which ought to be discussed is ASEAN (The Association of Southeast Asian Nations), established on August 8, 1967. It was established with the twin goals of “ensuring peace and stability [...] in parallel to the promotion of economic growth and social development” (Bulut 2012:55). The organization was founded by Indonesia, Malaysia, the Philippines, Singapore, and Thailand. However, its founding was encouraged and supported by the United States as an attempt at hindering further expansion of the Soviet Union in Southeast Asia (Dent 2013). Since its founding, Brunei, Cambodia, Laos, Myanmar, and Vietnam have also become members, thus expanding its membership to ten countries. In 1992 ASEAN created one of the region's first FTAs, the ASEAN Free Trade Area (AFTA).

Compared with other regional organizations, ASEAN can be considered under-institutionalized. This however, is not necessarily considered a weakness by member governments. Instead, member states “do not equate institutionalization with effectiveness” (Acharya 1998:59).

ASEAN has developed its own system of operation, perhaps what can be called its own culture. This has been called the “ASEAN Way”. It can be characterized as a system of personal ties between country leaders, and an informal system of interaction and socialization (ibid). This system eschews formal rule-based systems and instead embraces informal, *ad hoc* negotiations on issues, as they arise.

The other major Asian organization is APEC (Asia Pacific Economic Cooperation). This organization was founded by both Asian countries and Western countries (Including the U.S. and Canada).⁷ The major purpose of APEC is the spread of economic liberalization (Baldwin 2008; Bergsten 1997). It was purposefully designed against the spread of preferential trade liberalization (such as FTAs, or Preferential Trade Agreements (PTAs), as they are sometimes called). Baldwin argues that the creation of APEC was a means by which the United States prevented the creation of strong regional preferential agreements, through the creation of a larger agreement (Baldwin 2008:458). In fact, although not explicitly defined, APEC has as a fundamental principle the idea of “Open Regionalism” for the Asian sphere (Bergsten 1997). This can be roughly defined as a form of non-exclusionary regional integration. That is, a form of regional integration, which does not create barriers to the rest of the world. This is obviously a very hard concept to define, though Bergsten envisions several possible configurations in which it could be achieved (ibid). And while he is in favor of this system, and believes it actually makes sense, Baldwin, in contrast, argues that Open Regionalism is an “oxymoron” and states: “APEC was explicitly designed to rule out preferential trade liberalization, which is and always has been the defining element of regionalism” (2008:259).

After the financial crisis of 1997, things in Asia began to change, and not just with regard to the explosion of FTAs. The crisis arguably demonstrated the inability of either ASEAN or APEC to deal sufficiently with the problems Asia faced (Stubbs 2002:448). The regional institutions were simply not capable of acting in ways which were helpful. Moreover, the international community through the IMF, as discussed previously, acted in a way which only worsened the conditions in Asia (ibid). This, arguably, changed the thinking among Asian leaders, and strengthened the desire for stronger, specifically Asian regional institutions.

One of the first of such institutions to emerge was the ASEAN Plus Three (APT), which, established in 1997, is a forum between the ASEAN countries, China, Korea and Japan. Since its creation, it has been the main forum for financial cooperation in the Asian region (Hamilton-Hart 2006:123). Although similarly informal in nature, it has arguably achieved more than ASEAN. Furthermore, it is the first major Asian regional organization with China, Japan, and Korea in

⁷ Its current membership consists of: Australia, Brunei, Canada, Chile, Chinese Taipei, Hong Kong, Indonesia, Japan, Malaysia, Mexico, New Zealand, Papua New Guinea, China, Peru, the Philippines, Russia, Singapore, South Korea, Thailand, United States, and Vietnam.

strong, leading positions. The APT has established many projects aimed at regional development, in areas such as the promotion of small- and medium-sized businesses, food security, human resource development, information technology, tourism, and many more (Stubbs 2002). Arguably the most important development from the APT is the year 2000 establishment of the Chiang Mai Initiative (CMI) – a multilateral currency-swap arrangement between the ten APT nations, with the goal of being able to provide financial assistance in times of crisis (ibid).⁸

It is within this growth of institutions that the growth of FTAs should be situated. As indicated in the introduction, I believe it is problematic to view the growth to be merely a form of regionalism – as well as studying it only from that perspective. However, that approach is quite understandable, given the fact that the growth of the FTAs coincides with the growth of these other, specifically regional-based organizations and institutions. In fact, FTA growth can perhaps be seen as a further example of the open regionalism discussed above. However, some may disagree with that assessment, as growth in bilateral preferential trading agreements may be considered too exclusionary. In fact, it may be that in the globalized world of today, one cannot simply separate the processes of globalization and regionalization, and that they are linked as responses to global structural change (Väyrynen 2003). Thus it is conceivable that the twin developments of region-specific FTAs and FTAs with the outside world are separate (and different) responses to globalization, which, despite their intra- and inter-regional natures, can both be considered forms of regionalism (Moon 2011).

Even a short look at Asian regionalism shows that there are striking differences with European regional integration, which forms the model on which many of theories of integration are based (Acharya 2012). Characteristics of Asian regionalism, such as open regionalism and the informal non-rule-based nature of the Asian institutions, differ greatly from the European example. It is still unclear though if these will be permanent differences, due to culture and history. If they are, the theories we have of regional integration may be unhelpful. However, they may become helpful if the differences melt away, due to processes which apply for regions in general – and perhaps that is what we are beginning to see now, in the wake of the Asian financial crisis.

8 The creation of the CMI came out of the failure of another institution – the Japanese-proposed Asian Monetary Fund (AMF), a true 'Asian' IMF. It was proposed in the midst of the 1997 financial crisis, and largely failed due to strong US opposition (Lipsy 2003). In contrast to the proposed AMF, the CMI is still tied to the IMF in certain respects.

3 Theory

3.1 The Central Argument

The central argument of neoliberal institutionalism is that countries, out of self-interest, create international institutions to manage international problems and deal with common concerns and collective interests (Stein 2008). There have been many competing definitions of institutions, but for the purposes of this paper, I will use the older, more restrictive, definition of an institution as: "a formal arrangement transcending national boundaries that provides for the establishment of institutional machinery to facilitate cooperation among members in the security, economic, social, or related fields" (Plano and Otton 1979:288 as quoted in Stein 2008:203). Generally, institutions can be created to achieve better international outcomes than would have been possible, had all states been solely acting in their own self-interest (Stein 2008:208-209).

These problems may be differentiated into separate categories.⁹ Coordination problems are instances in which states' interests may generate many possible equilibria, and institutions are needed in order to coordinate their interests and arrive at one equilibrium. These problems may involve few conflicts of interests, or alternatively, strong conflicts of interest, which will thus determine the difficulty in reaching an agreement (ibid). Collaboration problems occur when countries following their own self-interests results in negative outcomes. These situations may be considered prisoner dilemma problems. An example of such a situation would be the famous "Tragedy of the Commons" (Hardin 1968), in which individuals (or in the international arena, states) avoid protecting common goods, as it is not in their individual self-interest to do so. Institutions allow states to reach preferred outcomes which would have been impossible if they had all been operating individually (Stein 2008) Thus, institutions may emerge as ways to protect against cheating. As stated by Keohane (1984:97): "In general, regimes¹⁰ make it more sensible to cooperate by lowering the likelihood of being double-crossed. Whether we view this problem through the lens of game theory or that of market failure, the central conclusion is the same: international regimes can facilitate cooperation by reducing uncertainty."

Interdependence can be defined as "*mutual* dependence. Interdependence in world politics refers to reciprocal effects among countries or among actors in different countries" (Keohane and

9 While separating these problems into categories may be useful in the abstract, for the purposes of this paper, the categories will not be further dealt with.

10 Regimes, in this case, can be considered as a broader form of institutions. See Stein (2008:203).

Nye 2012:7). To put more simply, interdependent countries are affected by what happens to each other. Keohane and Nye continue: “These effects often result from international transactions – flows of money, goods, people, and messages across international boundaries” (ibid). To increase the level of interdependence would be to increase the effects which result from international transactions. And increasing interdependence can increase the amount of conflicts, which will then require greater institutional creation to achieve the cooperation needed to be managed (Keohane 1984:243). Although I have throughout this paper, and especially in this paragraph, focused on interdependence, it must be made clear that the institutional argument is not an argument about responses to interdependence in itself, but rather complex international problems which may or may not emerge as a result of interdependence. Hence, in addition to a basic measure of interdependence, I am also using a measure of intraindustry trade as well in my analysis.

The argument here can easily apply in the case of FTAs. A simple problem is the problem of tariffs. As countries increase trade with one another, the cost of tariffs becomes more substantial. However, individual countries would be reluctant to unilaterally lower their own tariffs, for fear that such acts would not necessarily be reciprocated. FTAs allow both countries to agree on mutual decreases on tariffs, if both countries agree it is in their interests, and as a consequence they can overcome a free-rider problem. However, as economic interdependence increases, or as the economic relationship becomes more complex, the problems can become more substantial. These may include, for example, environmental problems or labor standard problems. There may be a fear, as countries become more economically intertwined within the international system, that one country may lower their labor or environmental standards in order to attract investment, thus compelling other countries to do the same in order to remain competitive. Institutions can therefore step in to prevent such downward spirals, which would be negative for all parties. Similarly, if countries wish to raise their labor or environmental standards, they may view the international system as a stumbling block. If they do so unilaterally, they will become less competitive. So in order to raise their own standards, countries can agree to come together to raise all of their standards. Arguably, as countries become more integrated with one another, the number of issues which could cause problems increases, and so the number and complexity of their institutions will increase.

Tied to the argument that institutions emerge to solve collective action problems is the idea that states are primarily concerned with increasing their absolute gains. This is in contrast to the realist contention that states are mostly focused on their relative gains (Powell 1993:209). The difference between the two perspectives results in different predictions for the likelihood of

institutional creation.¹¹ A focus on relative gains makes cooperation less likely to occur, as, unless both parties are perceived to gain equally, the less benefited state will be reluctant to agree to cooperate, unless under some form of pressure.

3.2 The Connection to Regionalism

As discussed in the introductory chapter, much of the previous research into my question has stressed the regional nature of these FTAs, whether the author was arguing that they were economically motivated or not. The possible economic motivation though, may be essential to whether or not they can be drivers of regional integration, as Corning (2011:261) writes: “With many questioning the economic value of FTAs in East Asia, there is considerable doubt that the agreements can make any contribution to advancing regionalism.” However, why would the institutional arguments presented above necessarily advance regionalism? Strictly speaking, there is not theoretical agreement that, even if institutions are developed to manage collective action problems, they would necessarily advance regional integration. At least not perpetually. Different theoretical stances come to different conclusions on that issue, often based on how much power the state retains, who the major actors are, and how automatic the process becomes.

Neoliberal institutionalism argues that the state retains a great deal of power and that the process of developing institutions depends on the preferences of the state (Rosamond 2000:142). As a consequence, the automaticity of the process is quite limited. This is not the case with other similar theoretical approaches, which also stress the “functional” nature of institutions. Neofunctionalism, which is often synonymous with “integration theory” is much more favorable to the idea that institutionalization can continue growing into true regional integration (ibid:50). Neofunctionalism would argue that integration of some economic sectors would lead to “functional pressures for the integration of related economic sectors,” resulting in the “gradual and progressive entangling of national economies” (ibid:51). Increasing economic integration will require further institutionalization and regulatory complexity, thus “political integration is a more or less inevitable side-effect of economic integration” (ibid:52). Neofunctionalism's possibly most important concept is the idea of 'spillovers' – which is that integration in “one economic sector would create pressures for further economic integration within and beyond that sector” (ibid:59-60). To put it another way, solving these collective action problems ends up creating further problems, thus putting the region

11 Of course, these are ideal types. It is unlikely that decisions are made completely ignoring either absolute gains or relative gains. Moreover, the language here uses “state” as if it was a unified individual actor, where that is plainly not the case.

in question on a treadmill toward ever-further integration. This has, in the European case, been argued to have not happened, and thus Haas, one of the founders of neofunctionalism, famously declared integration theory obsolete (Haas 1975). Others have disputed this claim (Sweet and Sandholtz 1997).

As indicated above, the significance of the state is of critical importance to how automatic the process of integration becomes. And with the diminishing role of the state with certain theories, other actors take its place. Which actors they are depends on the theory in question. Grieco explains:

For functionalists, the key new actors in world politics appeared to be specialized international agencies and their technical experts; for neofunctionalists they were labor unions, political parties, trade associations, and supranational bureaucracies; and for the interdependence school, they were multinational corporations and transnational and transgovernmental coalitions (1993:119).

The role these actors play varies – from being a forum for change and for new intergovernmental legislation to be passed, to being lobbyists for further integration. Thus the mechanism for integration and institution-building was not uniform between schools of thought – and thus studies which attack certain mechanisms, such as Ravenhill (2010) do not necessarily disprove the overarching idea. Furthermore, if states retain a great deal of power and act in their own interests, and if their behavior “is strongly affected by the constraints and incentives provided by the international environment” (Keohane 1984:26) this would justify system-level analysis of the international system (*ibid*). This is not, of course, to deride research focused on finding and studying causal mechanisms. Regardless of the extent of automaticity present in a particular theory, or the exact mechanisms of action predicted, what these theories tend to have in common is that they stress the role which economic integration plays on future political integration (Rosamond 2000:13).

The more restrictive versions of this argument, such as the one proposed by neoliberal institutionalists, argue that political integration however, may remain quite limited, as states may not have extensive integration among their preferences. However, one may ask why integration would be likely to happen most on the regional level? What sets regions apart from random groupings of countries is that they usually have a much higher amount of exchange between each other, which is to say that that their connections are more dense. Regions tend to have shared history and culture, but also more integrated economic systems, higher levels of trade, and higher levels of interactions of all kinds. Thus, regions are more ripe for integration than other areas. If

they have higher levels of interactions with each other, they will potentially develop more collective action problems, which may lead to greater institutionalization. Furthermore, in regions there are often very high numbers of transactions with the same (common) partners, thus leading to the possibility of multilateral institutions developing, as opposed to merely bilateral ones.

3.3 Theoretical Concerns

A concern needs to be addressed before this thesis can proceed. That is, that it may be inappropriate to attempt to apply integration theories, which were largely developed for the European case, to non-European regions. Acharya asks (2012:13):

[...] should we err on the side of induction, rather than deduction, that is, instead of having a set of general theoretical propositions and hypotheses (which tend to derive from the EU experience) to test in different regions, should we analyse each region on its own merit and then cumulatively generalise what is common and what is different?

This concern was also raised to Ravenhill, as he explains: “One referee for this journal suggested that to apply such ‘western’ criteria in assessing East Asian regionalism was inappropriate. This strikes me as the sort of argument that the late Susan Strange would have described as ‘woolly’” (2010:24).

I would argue that this concern is largely misguided. It is *not* misguided if the fear is that non-Western experiences are not factored in to the construction and testing of these “Western” theories – that is to say, the non-Western experiences with regionalism should inform the theory. As Acharya's statement indicates, there should still be an attempt to generalize theories from common regional histories, the question becomes merely, should we first apply and test European-informed theories or not. As we have built up a great deal of knowledge on what has happened in Europe, how the processes have worked, it seems to me a waste not to apply that knowledge. Indeed it may be the case that much of our expectations for other regions do not come true, but that should then inform our theories, as the experience with the EU can be considered an n=1 study (Rosamond 2000:16-17). Indeed, current theories of integration may have faults which reduce their generalizability, however, if we believe that there is a real world out there and in which theories can be generalized and causal mechanisms identified, we must accept that much of which has been theorized and discovered about Europe can apply in other spheres. This is expressed clearly by

Sayer (2000:53):

To note that a particular kind of knowledge comes from a particular culture or is associated with a particular subject position, does not entail that it is valid for or applies only to those who belong to the same originating social group. Acupuncture is Chinese in origin but it can also work on non-Chinese people, just as western medicine can work on non-western people. Similarly, French social theory cannot be discounted as only applicable within France! To be sure, there is no view from nowhere – all knowledge is social, situated, and contextual. But it does not follow from this that truth claims can only be applicable to the particular groups who propose them.

Thus, in this case, I would argue that applying to Asia this theory which was developed largely to understand Europe, will help to better understand regional development in general, whether it is in Asia or the West.

4 Methodology

4.1 Methodological Choice

In writing this thesis I have decided to use a quantitative methodology. This choice is related to both my limitations as a researcher as well as the unique benefits of this approach. I am not physically located in Asia, nor do I at the moment speak any Asian language. Thus my ability to either conduct interviews or examine written records is quite limited. Moreover, the fact that this phenomenon was not limited to any one country or any particular small set of countries would limit the ability of any one researcher to conduct such studies on the entire phenomenon.

A quantitative methodology has several large benefits. For the first, there is a wealth of good data available, which covers many years and many countries. Quantitative analysis, whether it be merely descriptive statistics or inferential statistics, allows researchers to look at many disparate events and develop what is almost a visual understanding of them. It allows researchers to notice and locate patterns which previously would lie hidden. For the specific research goals in this thesis, a quantitative methodology is particularly applicable. I am examining a phenomenon which is very large in scope, occurring over decades, which includes dozens of countries. It also focuses on trade patterns, which would be difficult to examine outside of this methodology.

It is worth noting that quantitative research relies on probabilistic logic, correlational logic. That is to say, one examines whether different variables tend to move together. Although one may speak of dependent and independent variables, in a way there is no difference in itself between them. The difference comes from theory. “Quantitative data analysis is as much a logical enterprise as it is a statistical one” (Anashensel 2002:1). Choice of statistical technique, as well as understanding of results should be informed by theory, and not the other way around (ibid:8). What one wishes to find is that two things tend to go together. That is to say, one argues that the presence of a particular independent variable makes it more likely that a particular dependent variable will be present. While it may be very hard to find particular connections between variables when looking at a small set of cases, especially if direct access to the mechanisms in question is difficult to obtain, when examining very large sets of cases, relationships can more easily be noticed. If it is argued based on qualitative research that x causes y, and a large set of cases show that x and y are not correlated, this puts the argument in serious question.

However, it needs to be emphasized further that using a quantitative methodology does not

allow one to escape theory. One cannot simply 'examine the data'. What is included as a variable has to be informed by theory and logic, and what ends up being included has a very large effect on the statistical findings. Excluding a variable because it is not perceived to be a cause, when it actually is, may result in incorrect, or at least incomplete, findings. Furthermore, determining what is actually cause and effect is an added difficulty with quantitative research, as showing a correlation does not show causal direction. Theory and logic need to be applied in order to uncover relationships and causal direction. Moreover stating that something is statistically significant only means that it is unlikely to be from chance. Thus, especially when examining many variables and many models, spurious relationships will be detected. Furthermore, that a relationship is statistically significant does not say anything about real-world significance, that is to say, a large, meaningful relationship.

The problem which I am examining, the connection between economic interdependence and the creation of FTAs in Asia, warrants, I would argue, multiple methodological approaches. My research may show that there is a statistical, that is to say, probabilistic connection between the two, but it will not be able to show exactly what happened in particular cases, or who the major actors were. Despite these limitations, this research should help inform other research projects, which may have different methodologies.

4.2 Operationalization

In order to test the effects of complex trading relationships we are first faced with the problem of operationalization. A concept itself cannot be observed, instead, as Anashensel (2002:33) explains:

[it] is inferred from its presumed manifestations, referred to as *observed variables* or *measured variables*. The measured variable is, in effect, a surrogate or proxy for the construct. Scores on the measured variable are seen as being produced by the underlying construct, the assumption that links the theoretical realm to the empirical world. This process of operationalization entails deductive reasoning [...]

As previously mentioned, I am choosing to use two separate measures: a measure of interdependence and intraindustry trade.¹² Interdependence, as previously explained, is when states are mutually dependent on each other, when they are particularly sensitive to changes in

¹² I will argue that intraindustry trade can actually be considered as a form of interdependence, but for clarity, I will refer to it separately throughout the rest of the paper, and my other measure will be simply called a measure of interdependence.

transactions between each other. This however, does not, necessarily imply a complex trading relationship which requires management, to solve collective action problems, and similar problems. I would argue that it likely that as countries become more dependent on each other, or a region, that such a situation would arise, however, this is not necessarily the case. Therefore, I am also using intraindustry trade as a measure. Intraindustry trade can be defined as the simultaneous import and export of similar types of goods or services.

There could have been other options here. For example, I could have looked at sectoral preferences, arguing that more advanced goods require more management. However, I have instead chosen intraindustry trade for a variety of reasons. First, intraindustry trade is an interesting phenomenon. It is not thoroughly understood, and there are several interesting empirical findings attached to it. For example, it has risen considerably since the 1980s among OECD countries, and it is higher among more complicated products (electronics, machinery, etc.) (Marrewijk 2008). Second, it could be seen as a deepening of interdependency, or at least a different form of it. On the face of it, intraindustry trade actually seems like the opposite of interdependence. After all, if countries trade very different products, they are dependent on each other for those things which they do not produce, however, if they trade the same sorts of products, are they really so dependent on each other? This argument though does not necessarily hold up. We can see this from Krugman's explanation for one argument about why intraindustry trade emerges:

The conventional forces of comparative advantage operate on *groups* of products ("industries") and thus give rise to *interindustry* specialization and trade. Economies of scale in production, however, lead each country to produce only a subset of the products within each group, so that there is also *intraindustry* specialization and trade. This provides a simple explanation of two of our empirical ostensible paradoxes. Countries with similar factor endowments will still trade because of scale economies, and their trade will be largely intraindustry in character (1981:960).

Thus, an increase in intraindustry trade indicates that countries are specializing less on product groups, and more on ever smaller subsets of those groups. Thus the network of trade is becoming denser. This can explain why advanced economies have increased their intraindustry trade since the 1980s and it is higher in more complicated products. As technological capacities have increased, the amount of complicated products being traded has increased, and those products consist of many smaller components, thus allowing ever deeper specialization. Thus, for a practical example, a modern computer consists of hundreds, if not thousands of products, which may be produced among dozens of countries. This, I would argue, should constitute a form of interdependence and it indicates why increased management may be necessary, due to the complicated nature of

production, as not only consumption relies on foreign products, but a great deal of production as well. Furthermore, and related to the preceding argument, this brings up the final reason why I have chosen intraindustry trade as my other explanatory variable: a large proportion of intraindustry trade is made up of intra-firm trade, that is, trade which occurs within one firm which is spread among several states (Marrewijk 2008). This clearly could be an instance in which economic problems may emerge which require institutions for management.

Despite what I have written above about using interdependence and intraindustry trade as measures, they themselves are not actually measures. They are also concepts, and as concepts they need to be operationalized. Then they can be studied and, in this case, with a quantitative methodology, calculated and manipulated as numbers.

4.2.1 Interdependence

Surprisingly, “Even scholars who study the political effects of interdependence have difficulty in defining and conceptualizing this most central of concepts in the discipline” (Blanchard and Ripsman 2001:96). In fact, even classics in the field such as *Power and Interdependence* by Keohane and Nye (1977) or *After Hegemony* by Keohane (1984) do not provide clear instructions for how interdependence ought to be calculated.

Despite this lack of clarity, when it is used in research, the vast majority of scholars decide to focus on the importance of trade to a state's economy (Blanchard and Ripsman 2001:98). This, argues Blanchard and Ripsman, is a mistake. They argue that other economic ties between countries, such as foreign investment and the globalization of capital markets, deserve serious attention (ibid:99). Despite their condemnation, I will continue the tradition and focus on trade data. There are two primary reasons for this: the first is the great availability of the data. This is something which must be taken into consideration. The second is that if I am partly responding to existing research in the field, I should not begin with too large of a deviation. Ravenhill (2010) focused on trade interdependence and asserted that it did not increase during the period in question. However, I would argue that his choice of measures is faulty, and thus I will attempt to show that, in fact, trade interdependence did increase (whether or not that actually caused the explosion in FTAs).

Outside of the research into institution-formation, there has been a large focus on the effect that trade interdependence has on peace and conflict, and within that literature there are two primary measures which are used, which leads to conflicting results (Gartzke and Li 2003). This only goes to illustrate the importance of the measure used, and that inappropriate operationalization will lead to unreliable results. The first possibility is using a measure of trade interdependence based on a

country's trade share (Barberi 1996). A trade share between two countries, i and j can be calculated for country i as:

$$\frac{\text{dyadic trade}_{ij}}{\text{total trade}_i}$$

From that value, trade interdependence can be calculated (ibid:36). This forms the same basis as the measures used in the field to measure economic interdependence in Asia. Ravenhill (2010) uses intra-regional trade shares as his measure of interdependence, which looks at the fraction of total trade regional trade takes up. He finds that between 1995 and 2006, intra-regional trade shares rose from 37.6% to only 38.3% (ibid:5). While he is using this indicator as a measure of interdependence, he is primarily using it as a measure of regional integration. However, even for that purpose there are acknowledged problems with its usage (Anderson and Norheim 1993). It makes comparisons between regions impossible, as the size and number of the countries influence the value considerably, and the introduction of any countries to the region, even if those countries are not biased toward regional trade, will increase the value (ibid). As a remedy, he shows values from an intra-regional trade intensity measure (Ravenhill 2010).

However, both of those measures are inappropriate for measuring whether actual interdependence has increased. Instead, a non-zero sum measure should be used. That is to say, the issue in question is *not* whether or not countries within the Asian region are biased toward trade with each other. The issue is the degree in which they are dependent on trade, regardless of where it originates. FTAs are not solely signed between countries within the region, so if we are to understand whether they are partially constructed to deal with problems of growing interdependence, we need a measure which is not region-specific. If regional trade-shares had increased, that would not explain why FTAs were signed in such great number with non-regional partners. This argument was used in the introductory chapter, but it needs to be reiterated. To attempt to make this argument more clear, imagine if we were to ask if the world itself has become more economically interdependent. Treating the world as a region, we would never see any change using these measures. And yet we speak of the world becoming more interdependent. The measure chosen needs to be able to deal with regional, and non-regional trade, and allow both of them to increase under the same period.

The second measure of trade interdependence which Gartzke and Li (2003) discuss, allows us to do that. In order to calculate this value for country i , we first need to calculate its dependence. To do that we use the formula:

$$\frac{\text{total trade}_{ij}}{GDP_i}$$

Thus a country's dependence on a trading relationship is the total amount of trade between those two countries divided by that country's GDP. This can easily be extended to a region, or the whole world. The total trade between the entities in question, divided by the GDP. So, as an example, if I wanted to calculate China's dependency on ASEAN, I would sum up all trade between China and ASEAN countries, and divide that total by China's GDP. As a result, dependence can increase within a country-pair, a region, and the world simultaneously, *if* trade with all those partners increases as a percentage of GDP. This, however, is trade *dependence*, to get trade *interdependence*, we are faced with a difficulty in how to calculate it. Within the literature, there are two main ways in which this is calculated (Min Gyu Koo 2010:50): the first option is the so-called 'weak link' method, which is to take the lowest level of dependence between a pair of countries as the level of interdependence. The logic is that the country which has the least at stake is essentially the one which determines how interdependent the pair is (ibid). The other option is to take a mean of the two values. And the geometric mean is what is used. So for countries *i* and *j* the level of interdependence between them would be:

$$\sqrt{\text{trade dependence}_i * \text{trade dependence}_j}$$

Both of these calculations would need to be modified to work on a regional or global scale, but for the purposes of this paper, those do not need to be calculated. The interdependency ratios in this paper will be calculated just between pairs of countries. As far as which to use in this paper, I will use and test both the 'weak link' and the geometric mean versions.

4.2.2 Intraindustry Trade

Fortunately, calculating intraindustry trade is more straightforward than creating a measure of interdependence. There are disagreements about how to calculate it, however, as it is simply a measure of how similar imports and exports are, there is not the same question of what exactly the concept is. Operationalization is far more straightforward.¹³ For this paper I will be using the most commonly used measure of intraindustry trade, the Grubel-Lloyd index, proposed by Grubel and Lloyd (1975). It is straightforward and makes intuitive sense.

To calculate the intraindustry trade level for a particular sector, one uses the following equation:

13 Intraindustry trade can be broken up into horizontal and vertical intraindustry trade - where horizontal intraindustry trade "refers to the simultaneous exports and imports of goods classified in the same sector and at the *same stage of processing*" and vertical intraindustry trade "refers to the simultaneous exports and imports of goods classified in the same sector and at *different stages of processing*" (Marrewijk 2008:2). This paper, however, does not make the differentiation.

$$GL_{\text{sector } i} = 1 - \left(\frac{|export_{\text{sector } i} - import_{\text{sector } i}|}{export_{\text{sector } i} + import_{\text{sector } i}} \right)$$

Thus, the level of intraindustry trade present in a particular economic sector is determined by dividing the absolute difference between exports and imports in that sector by the total amount of trade within that sector, and then subtracting that from one. As a result, the index ranges from zero, which represents complete *interindustry* trade, and one, which represents complete *intraindustry* trade.

The above equation provides a value for a particular sector. In order to calculate the level of intraindustry trade in total, the values for all sectors need to be averaged together. To be accurate, I calculated a weighted average in every instance. Moreover, when calculating intraindustry trade, one is faced with the issue of how narrow a sector one defines. This is done when picking the 'digit level' to be used. Goods are categorized into different groups, with higher digit levels holding ever more specific goods. As an example, for Standard International Trade Classification (SITC) revision 2, which is the classification system I used, code 7 includes all "Machinery and transport equipment", and code 71 includes "Power generating machinery and equipment, and code 711 includes "Steam boilers and auxiliary plant; and parts thereof". This particular classification system goes up to the 5th digit level, with each additional digit providing ever greater specificity. I chose to use data at the 2-digit level, primarily for two reasons. The first is that it is likely to be more accurate, as countries may categorize certain products differently, especially at higher levels. The second and more important reason, is to include goods which are traded at different stages of production, as the organic spread of production networks in Asia have been an essential component of regionalization (Munakata 2006). However, this research can easily be extended by comparing its results with results at greater digit-levels.

4.3 Empirical Plan

There are two major components to my thesis. The first includes descriptive statistics, and the second, inferential statistics. They are both important to making my argument.

4.3.1 Descriptive Statistics

As previously discussed, there is a major problem with looking at the region as a whole, attempting

to tie overall changes in interdependence (and in this case intraindustry trade) to changes in FTA construction. Individual countries have very different connections both to the region (that is, to each other) as to the world. While it could be the case that, as Ravenhill (2010) argues, interdependence has stagnated, it does not automatically follow from that that every country has faced the same stagnation. Hence, in my study I will calculate both dependency and intraindustry trade levels for each individual country, both with the region and the world. In the case of dependency ratios, I calculate the amount of dependency on the ASEAN countries, the three Northeast Asian countries, and the world, whereas for the intra-industry trade values, I calculate for just the entire region (APT) and the world.

By looking at individual countries and the changes they go through during the period of 1995-2010, I am able to do several things. First, I can see to what extent each country changes during this period. While we may analyze the overall trend for the region, it is important to note the distribution of those changes. Have the changes been uniform, or dominated by particular states? And second, how do the different countries differ in their overall values? Do the countries which have higher levels of intraindustry trade and dependence have higher FTA counts? While the rise of FTAs was a region-wide phenomenon, some countries signed drastically more FTAs than others.

4.3.2 Inferential Statistics

The major problem with the above is that it does not necessarily show the purpose of the FTAs - whether or not they have been constructed to manage complex economic relationships, as the neoliberal institutionalist argument states (Stein 2008; Hurrell 1995). Hamanaka (2012:14) explains the problem and provides a potential solution:

While one tends to assess whether or not the proliferation of FTAs in Asia can be explained by the overall development of trade interdependence in the region, such a general analysis does not reveal much about the relationship between *de facto* and *de jure* trade integration. Rather, we need to examine the level of economic interdependence of a particular set of Asian countries and consider whether this affects the modality of economic agreements among them.

Hamanaka continues that there are two possible hypotheses about the signing of these agreements. They could be signed to "formalize or institutionalize the management of increasingly complex and dense economic interdependencies within a region [...]" (ibid) or that the opposite chain of causality is actually possible: that FTAs are used to induce trade, and not manage existing trade (ibid:15).¹⁴

¹⁴ It is worth pointing out that Hamanaka (2012) focuses on FTAs within the region, and thus focuses on regional

While I agree with his analysis, and I think he has a good proposal to examine the levels of interdependence and types of agreements between just a small set of countries, I have decided to attempt to apply this argument to a large quantitative set. Specifically, I have conducted regression analyses on all bilateral¹⁵ East Asian FTAs (including FTAs between Asian and non-Asian countries) for which data is available from 2000 to 2013. My dependent variable is a measure of how complex the FTA is, and the independent variables are the two different measures of interdependence and the measure of intraindustry trade. These values were calculated for each pair of countries for the year the FTA was signed.

In order to measure the dependent variable, I have been inspired by work done by Kawai and Wignaraja (2009), wherein they categorized FTAs by how many WTO-plus provisions they have.¹⁶ Specifically, in Appendix 6, they analyze a number of FTAs and establish which provisions (WTO-plus and not) are covered by various FTAs. I have selected six of these provisions: Intellectual Property, Environment, Labor Standards/Movement of Natural Persons, Education/Human Resource Development, Investment, and Government Procurement. I selected these because they extended beyond standard goods and services coverage, and because they cover a range of issues. In order to assess whether a particular FTA covered a particular provision or not, I developed strict rules, as it was not always straightforward whether or not a provision was actually, meaningfully covered. These rules will allow my research to be replicated in the future.¹⁷

I classify an FTA as having a particular provision if any one of the four conditions is met:

- 1) There is a detailed description of the area in question, that is to say, the FTA specifically regulates behavior or cooperation in a particular issue area.
- 2) They state that they will cooperate on the issue. However, this is counted only if the issue is dealt with separately. It is not counted if it is part of a long list of areas for cooperation.
- 3) The issue is specifically discussed as a matter in arbitration, should there be a conflict.
- 4) The FTA points to another agreement signed between the states in question (i.e. not a WTO agreement) which specifically deals with the issue.

These rules could have been either more lenient or more strict, and subsequently would produce different results. I discuss later that, if anything, these rules ought to be more strict, perhaps even checking if cooperation took place or regulation was followed. This would increase the accuracy of

measures. While I have discussed the problems with this, his analysis here can apply to both regional and outside FTA construction.

- 15 I did not include multilateral FTAs because this may present methodological and theoretical problems. Methodologically, how to measure interdependence becomes an issue and theoretically, if it is justified to compare multilateral and bilateral FTAs together, when their emergence may rely on different political conditions.
- 16 WTO-plus provisions are provisions which exceed the World Trade Organization (WTO) framework.
- 17 As I developed my rules I checked my results against the results from Kawai and Wignaraja (2009) and could not ever find a rule set which produced the same results as theirs. And they did not specify how they made their determinations. Hence, my results do not completely match theirs.

any analysis.

The number of provisions each FTA held was counted and became the dependent variable in each observation. Then five models were tested, one for each independent variable alone, and two with one measure of interdependence paired with the measure of intraindustry trade. If the neoliberal institutionalist hypothesis is correct - and assuming my operationalization is proper - we should see that higher levels of interdependence and intraindustry trade between pairs of countries in the years the FTAs are signed lead to more complex FTAs (FTAs with higher counts on the dependent variable). As I am using count data as the dependent variable, standard Ordinary Least Squares (OLS) regression is unsuitable, and instead a poisson model has been used (Kennedy 2008:246).

This approach should be contrasted with how other studies of FTA formation have handled the issue (Baldwin and Jaimovich 2012; Baier and Bergstrand 2004). In those cases, economic (and political) measures were used as predictors for FTA formation. However, even if certain economic variables predict FTA formation, this does not create a strong argument that the FTA was created to manage economic problems which emerged from the economic activity. They could have been created to increase trade further, or to bring the governments closer together, or because closer economic relationships establish closer identity-based ties, or other possibilities as well. My approach does not completely rule out other explanations, but it does provide for a stronger argument. It also needs to be mentioned that focusing solely on FTA creation presents certain methodological problems, namely what year to use. As the dataset would have to include country-pairs with and without FTAs, a year for the economic data needs to be picked. If, for example, a date is picked before an FTA had been signed, there is the possibility that between that year and the year the FTA was signed economic activity increased substantially. And if a year is picked after an FTA was signed, there is the problem that the FTA itself may have increased economic activity substantially, introducing endogeneity.

4.4 Data Sources and Scope

The scope of this paper will be the period of 1995 to 2013. This both due to issues of data availability and because this is the main period in question. The countries which I look at will include the five original ASEAN countries of Indonesia, Malaysia, the Philippines, Singapore, and Thailand, as well as the three northeast Asian countries of China, Japan, and Korea. With China, I

am including just data from mainland China, and am not using data from Hong Kong, Taiwan, or Macau. The other ASEAN countries were not included for two primary reasons: the data was not as consistently available, and by and large they were excluded from the FTA growth.¹⁸

To reiterate, while I have stated that this is a study which looks at economic interdependence, it is more accurately a study which looks at trade interdependence, as I am restricting my data to trade data (as was made clear previously). Thus, other forms of possible economic interactions, such as FDI, are not included.

Data on trade will come from the UN COMTRADE (2014) database. This is a database of bilateral trade data. It allows not just total trade levels to be analyzed, but also extremely nuanced breakdowns of specific items traded, which is needed to calculate intraindustry trade. General data on FTAs come from the Asian Development Bank's FTA database – compiled by the Asia Regional Integration Center (ARIC 2014). This is a database which compiles an up-to-date list of all the various FTAs in Asia, both signed and in development. It holds details on those FTAs including critical dates, and when available, organized texts of the actual agreements. My analysis of the texts of FTAs was done using that database, as well as the documents themselves, found on other websites – usually (but not exclusively) government websites. Within the works cited section of this thesis are the references for where all FTA texts can be retrieved. Data on GDP comes from the World Bank (2014). Lastly, both the GDP data and the COMTRADE data are in current US dollars, thus ensuring compatibility.

4.5 Limitations

While I hope that this study can prove to be a worthy contribution to the field, there are many limitations to its methodology that ought to be acknowledged and discussed.

Perhaps the first limitation which ought to be discussed is the fact that I have not been able to completely rule out alternative explanations. I have attempted to analyze the complexity of the FTAs to see if their complexity is correlated with the complexity of the economic relationships they are based on. This is an attempt to see if the FTAs are used to deal with economic problems, as a neoliberal institutionalist would assert. It is possible however that an alternative explanation is correct, for example, that close economic relationships have caused a change in identities and a

¹⁸ As members of ASEAN they are part of AFTA and ASEAN itself has signed agreements with other countries, but it is debatable what role they played.

desire to have closer political relationships as well. However, I do not believe that is likely, as approximately half of the FTAs studied are with non-Asian actors, where such a change would not be predicted.

This study is limited in its theory-testing ability, due in part to its theory-building side. I have provided arguments for the problems present in existing studies used for testing the theory – as well as the lack of methodological consideration given to how to test the theory, and as a result I have proposed certain measures which may be used, as well as a new methodological approach to testing the functional argument. These proposals, however, may be problematic themselves. While I have put a great deal of thought into the ways of operationalizing interdependence, it may be that there are other measures which are better. Moreover, it needs to be very clear that I am focusing solely on trade interdependence, while economic interdependence encompasses much more.¹⁹ It is quite possible that the empirical results would be different if these other economic angles were measured instead, or if intraindustry trade was measured at a different digit level.

Moreover, the decision with regards to how strict to be in qualifying an FTA provision is another limitation. Stricter rules for WTO-plus provisions could lead to different, and possibly more accurate, results. Therefore, for a much more thorough analysis, more provisions should be analyzed and the rules should be more strict, perhaps classifying a feature as present only if there are clear instructions for the management of that feature, or outside evidence that through the FTA cooperation actually took place. These measurement issues further illustrate that negative empirical results do not necessarily disprove the theory, as the problem may lie with the testing (Chalmers 1999:87).

Lastly, my study is correlational in nature and looks at the area at the system-level – thus it is limited by what it is not. No interviews were conducted, no speeches were analyzed, nor was process-tracing conducted on any FTAs. Thus, in order to measure causal mechanisms, other studies would be needed. It also does not hurt to reiterate the familiar statement that “correlation does not imply causation” (Aneshensel 2002:64). Relationships found through data-analysis do not necessarily indicate a direct causal relationship from the independent variables to the dependent variables. It is quite possible that third variables are affecting both sides of the equation. Further quantitative and qualitative analysis can help determine how the relationships actually work.

19 A strong argument can be made that, as my inferential section tests more comprehensive institutionalization, which covers more issues than simply trade, such as training, environmental regulation, investment, etc., that it is inappropriate to only use measures of trade. However, I am hoping that these measures can act as proxies for other forms of economic integration.

5 Empirical Results and Analysis

5.1 FTA Distribution

It is very important, before examining the levels of interdependence for these countries, to look at the distribution of FTAs, both how many are signed involving each country, as well as whether they are located within the APT region or outside of it. Thus when measures of interdependence and intraindustry trade are examined, it can be seen whether or not they correspond to the actual distribution of FTAs, and thus not a simple correlation of more interdependence and more FTAs.

Here in the table below I show the separation between FTAs signed within the region and outside of it for the eight countries I am examining.

[**Table 1:** FTAs within the region and outside it.]

	Asia Plus Three	Rest of World
China	6	8
Indonesia	5	4
Japan	8	5
Korea	2	9
Malaysia	5	8
Philippines	5	2
Singapore	7	14
Thailand	7	5

Source: ARIC (2014). Note: APT includes agreements signed with Hong Kong, Macau and Taiwan - all signed with China.

Looking at this chart, the degree of variation becomes obvious. Singapore, for example, has signed fourteen FTAs with the non-APT world, while the Philippines has signed only two. Both the volume and the regional degree varies with each country. In fact, no two countries have the same distribution. Moreover, two further things can be seen, which ought to be noted. First, there are indeed a great number of non APT agreements signed, as discussed earlier. Second, the agreements within the region seem quite numerous and do seem like the “Noodle bowl” discussed previously.

Both of these points deserve further reflection.

Regarding the non-regional FTAs, it must be noted that a great number of these are within what I will call “greater Asia”. The Asian Development Bank has designated 48 countries to be a part of the Asia-Pacific region. Slightly more than half of “Rest of World” agreements listed above are actually involving only (or mostly) countries in this Asia-Pacific region. Analyzing the different levels of interdependence with the “greater Asia” countries and the non-greater Asia countries would be quite important. This paper, however, has restricted itself to looking at only the difference between APT countries and the whole rest of the world. So, I have presented only the binary differentiation.

Secondly, it is worth looking more closely at this noodle bowl phenomenon. I believe this is deceptive. While there are a great number of agreements signed among the APT countries, there is also a great deal of double-counting due to AFTA, which includes all the ASEAN countries. Thus, it is listed above for all the ASEAN countries. Moreover, ASEAN has signed agreements with India, Japan, Korea, China and a combined agreement with Australia and New Zealand. Therefore, for all the ASEAN countries, all of those agreements are listed above, indicating an inflated amount of agreements signed.

Therefore, I would argue, it is important to look at the ASEAN countries specifically, and see how many agreements they have signed on their own, not as a part of ASEAN – as the ASEAN agreements may reflect not necessarily their own interdependence and economic motives, but the group's or the interests of powerful members.

[**Table 2:** Bilateral agreements signed by ASEAN countries.]

	Asia Plus Three	Rest of World
Indonesia	1	2
Malaysia	1	6
Philippines	1	0
Singapore	3	12
Thailand	3	3

Source: ARIC (2014)

The chart above shows the agreements signed by the individual ASEAN countries, not their ASEAN agreements, and not AFTA. The noodle bowl may still be present, arguably, but the

complexity of intra-Asian agreements has definitely decreased. However, what is very interesting here is that the differences present between different countries become even more stark. Only Singapore and Thailand have signed more than one additional agreement within the APT region. And Singapore and Malaysia have signed many more agreements with the rest of the world than the other countries.

Looking at the two charts above, one can make some tentative predictions. China, Korea, Malaysia and Singapore have signed the most number of agreements with the rest of the world, so one would expect their levels of interdependence and intraindustry with the rest of the world to be the highest. Japan would be somewhat lower, and Indonesia, the Philippines and Thailand would be lowest, with the Philippines being at the absolute bottom. Predictions about intra-Asian levels becomes more difficult, as it is less obvious how to approach the problem. While almost all the agreements with the rest of the world are bilateral in nature, and as there are so many countries in the rest of the world one can sign agreements with, it becomes clear that the number agreements is a worthy measure to look at. However, it is not the same when looking at the APT region. In that case there are only thirteen countries. Of those thirteen, ten are part of a free trade area. The other three countries have, moreover, all signed agreements with that area. While some countries have signed bilateral agreements with each other, it is unclear how that should be reflected in general changes in interdependence. After all, some countries may choose, despite high levels of interdependence, to put their efforts into extending and strengthening AFTA and its agreements. Hypothetically, if there was one very strong free trade area among all thirteen countries, all of those countries would only have one FTA within the region. That would not lead one to predict that the levels of interdependence ought to be lower than with non-regional actors.

While, the distribution of FTAs may indicate which countries should have higher levels of interdependence and intraindustry trade, we can argue that for all the countries generally, we should be seeing an increase in the measures both within the region and outside of it, which would correspond to the growth of these agreements. This is a growth in interdependence which other measures, such as regional trade shares, have ignored.

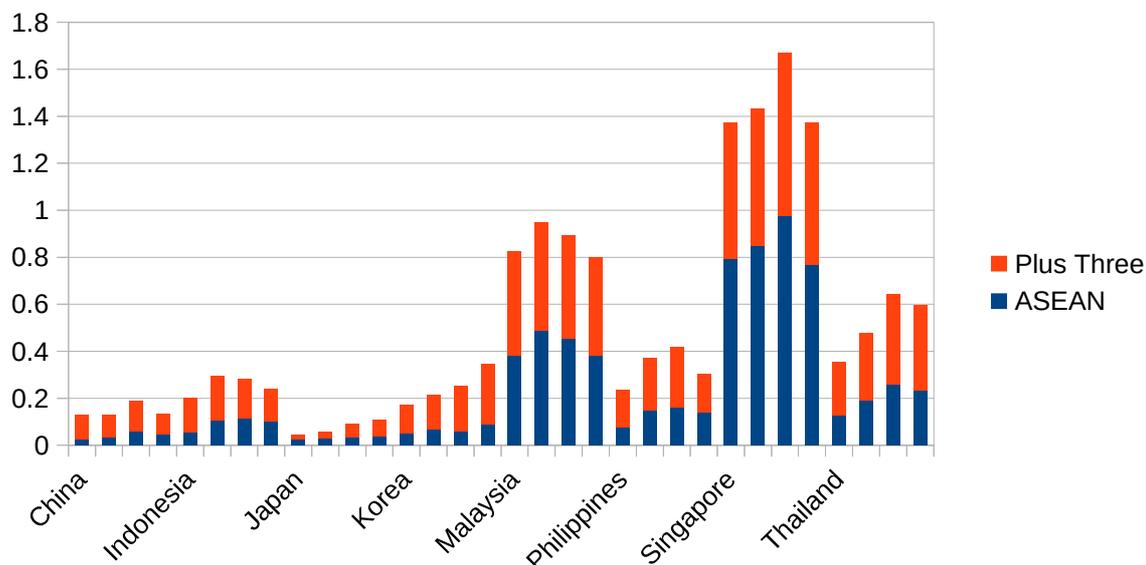
5.2 Interdependence

In this section I present data about relative dependence levels, calculated by dividing trade volumes by GDP levels. For the eight countries in question I calculated these ratios for the years 1995, 2000, 2005 and 2010, for both dependence on the ASEAN region, the APT region, and the rest of the

world as a whole.

The graph below shows the ratios in a stacked chart for ASEAN and the “plus three” countries.

[Graph 1: Regional dependency ratios.]



Source: COMTRADE (2014); World Bank (2014). Note: The ASEAN values include dependency on the other ASEAN countries: Brunei, Cambodia, Laos, Myanmar, and Vietnam.

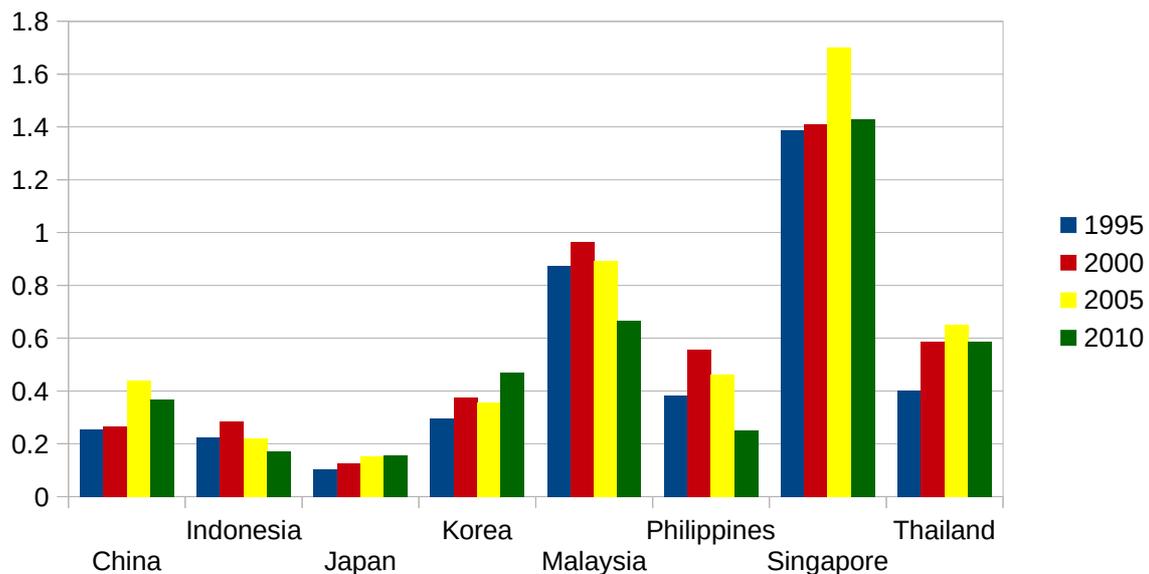
Here we can see several interesting things. First, the ASEAN countries are much more dependent on the region than the non-ASEAN countries. This includes dependency on both the ASEAN region and the “plus three” countries. There also seems to be a general trend toward increasing dependence, though the trend is more obvious with some countries than others. Also with many countries, the 2010 values are lower than the 2005 values, probably as a result of the 2008 economic crisis. It can also be seen that for most of the countries, the dependency on plus three countries is higher than the dependency on the ASEAN countries. Thus, one can state that while the ASEAN countries are in general very dependent on China, Japan and Korea, the dependence is not reciprocated. Chinese and Japanese dependence especially, both on the ASEAN region and the Northeast Asian economies is very low, although it has increased substantially percentage-wise - though this is quite difficult to see in the chart above, but will be returned to later in this section.²⁰

The higher levels of dependency from ASEAN countries, even from the first measurements

²⁰ Some readers may find it strange to see trade values exceeding GDP values, however this is due to the differences in how the two are calculated (Anderson 2007).

in 1995, can perhaps explain the creation of AFTA so much earlier than the other Asian FTAs. While those countries were very dependent on the region, the Northeast Asian countries were not. Thus the incentive to form these agreements was much lower for the Northeast Asian countries than with the Southeast Asian countries.

[**Graph 2:** Global dependency ratios.]



Source: COMTRADE (2014); World Bank (2014).

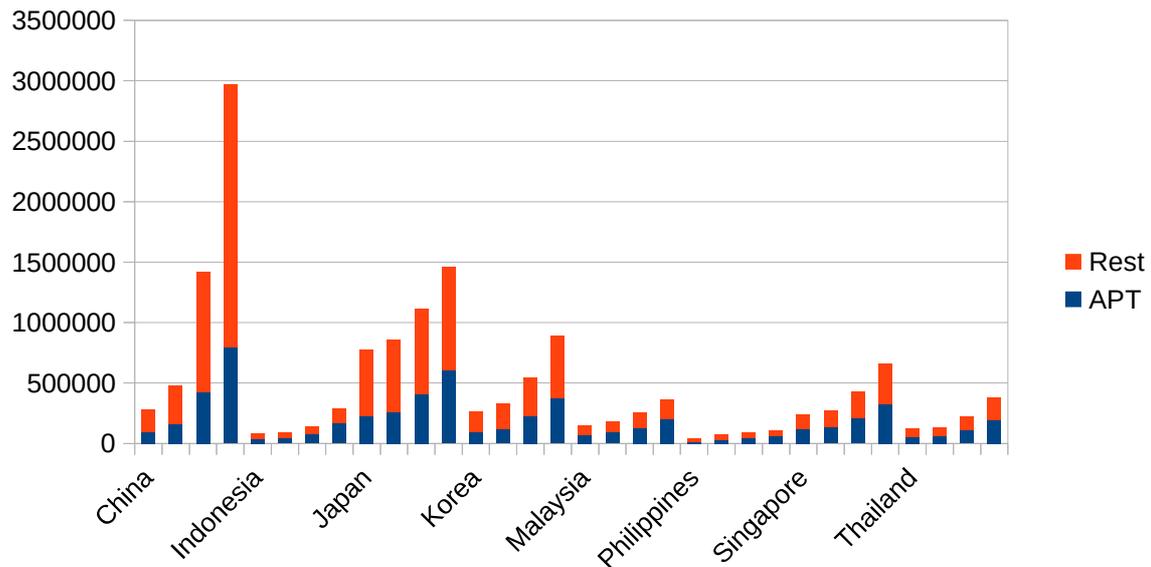
The graph above shows much the same thing as the previous one, except with values for the rest of the world. Note that it does not differentiate between “greater Asia” and non-Asian countries. Here again there seems to be a general trend toward more dependency, though the degree of change again varies by country. The trend is also more evident with some countries than others. And once again the values for 2010 are in almost all cases lower than the values for 2005. It is important to note here, that if one compares the dependency ratios with those from the previous graph, one notes that while the values for the rest of the world are fairly similar to the values for the combined APT region for ASEAN countries, the world values are considerably higher for China, Japan and Korea. Thus, while the ASEAN countries are approximately as dependent on the APT region as they are to the rest of the world, the plus three countries are more dependent on rest of the world.

Again Malaysia and Singapore have substantially higher dependency ratios than the other countries, which corresponds to the higher level of FTAs signed by those two countries. The other individualized predictions are less confirmatory. While China, Japan and Korea are predicted to

have higher levels than Indonesia, the Philippines and Thailand, this is not the case. The Philippines (aside from in year 2010) and Thailand have, generally higher levels than all three, while Japan has the lowest ratios of all.

It is important to note here, that while we are analyzing these dependency ratios, it is useful to look at total trade values, which I have presented below.

[**Graph 3:** Total trade with region and rest of the world.]



Source: COMTRADE (2014).

This chart presents a different angle to the preceding ones. Here we can see total trade values (in millions of dollars) for all the countries, broken into the APT trade and the rest of the world. Here we see a much clearer pattern. All the countries show increasing values as the years go by. It can also be seen that the three Northeast Asian countries have much higher values than the others. Also, while the previous graphs showed a decrease in the ratios for 2010, we see that trade continued to increase substantially for all the countries over the 2005 values. This indicates that while trade increased quite a bit during that five year period, it did not increase as much as the GDP did.

Looking at this graph, we are presented with a theoretical problem. If it is our hypothesis that the increased complexity of trade should lead to the creation of institutions to manage the emerging problems the complexity brings about, should we ignore total trade volumes? After all, while Malaysia and Singapore's dependency values far outstripped those of China and Japan, the latter's trade totals were substantially higher than the former's. This could perhaps explain the

difference in FTA creation rates. Malaysia and Singapore had both higher dependency ratios and higher total trade than the other ASEAN countries, while also signing far more FTAs. Meanwhile, the Northeast countries had lower dependency ratios, with far greater total trade. However, I do not wish to argue that total trade is what ought to be considered, as that brings about other theoretical problems. Total trade biases toward larger countries with more trade in general, as well as richer countries. It does not indicate relative significance on its own. After all, if China has a high volume of trade with a small country, giving low levels of dependence from China's perspective and high from the smaller country, one ought not ignore that and treat the significance as the same, just because the total trade is the same. From the perspective of China, trade with the smaller country may be fairly inconsequential and not worth the effort it would take to manage the trade. For the smaller country, they may be utterly dependent on China, and management may be much more important. The issue though remains problematic.

While I have discussed in some depth the individual differences in volume between the countries, what needs to be discussed are the overall changes in dependency. After all, we are considering a change in policy. Before 2000 only there were only a handful of FTAs signed by Asian countries. We are still presented with the issue of why there was a change. Hence in the chart below, I have presented the percentage changes between 1995 and 2010 in dependency ratios. Note that the values from 2005 were mostly higher than the ones from 2010, so this decrease at the end is still present in the percentage changes.

[Table 3: Dependency ratio changes from 1995 to 2010.]

	ASEAN	Plus Three	Rest of World
China	76.44	-16.75	43.59
Indonesia	91.75	-6.15	-23.04
Japan	64.27	258.68	52.19
Korea	76.44	116.84	58.25
Malaysia	0.57	-5.86	-23.63
Philippines	81.44	1.04	-34.79
Singapore	-3.36	4.37	3.03
Thailand	81.29	59.90	46.45

Source: COMTRADE (2014); World Bank (2014).

If we look at the ASEAN-directed dependency ratios, we see that, aside from Singapore, all the countries under this fifteen year period show an increase in dependency. And aside from Malaysia, those increases are quite substantial. The Northeast Asian countries, which had very low levels of dependency on the ASEAN countries, while still having low levels, have had very high increases –

both Korea and China show 76.44% increases in dependency. The two countries which showed no substantial change – Malaysia and Singapore – were already at extremely high levels of integration, which could indicate that at some point increased dependence may plateau.

Integration with the Northeast countries is less clear cut. This in itself is interesting. One may hypothesize that countries in Asia have become more dependent on China, as China has risen so meteorically. However this is not quite clear here. Most of the ASEAN countries, aside from Thailand, are dependent on the Northeast Asian countries approximately as much as they were fifteen years prior. However, Japan and Korea are much more dependent on the other respective Northeast Asian countries than they were – Japan is an astounding 259 percent more dependent on Korea and China than they were fifteen years earlier. One can assume that much of this change is due to the meteoric rise of China during this period. And this is confirmed by my research. Japan's dependence on China increases by 406.41 percent. In contrast, China has decreased its dependence on Japan by 36.40 percent. Thus one can say of China that, while it has substantially increased its trade with the ASEAN countries relative to its GDP, the same cannot be said of its relationship to the Northeast Asian countries.

With regard to dependence on the rest of the world, we see that all the countries aside from Indonesia, Malaysia, and the Philippines have increased their dependence. However, for both Malaysia and the Philippines, the 2005 values would show an increase, and for Indonesia the value is essentially unchanged.

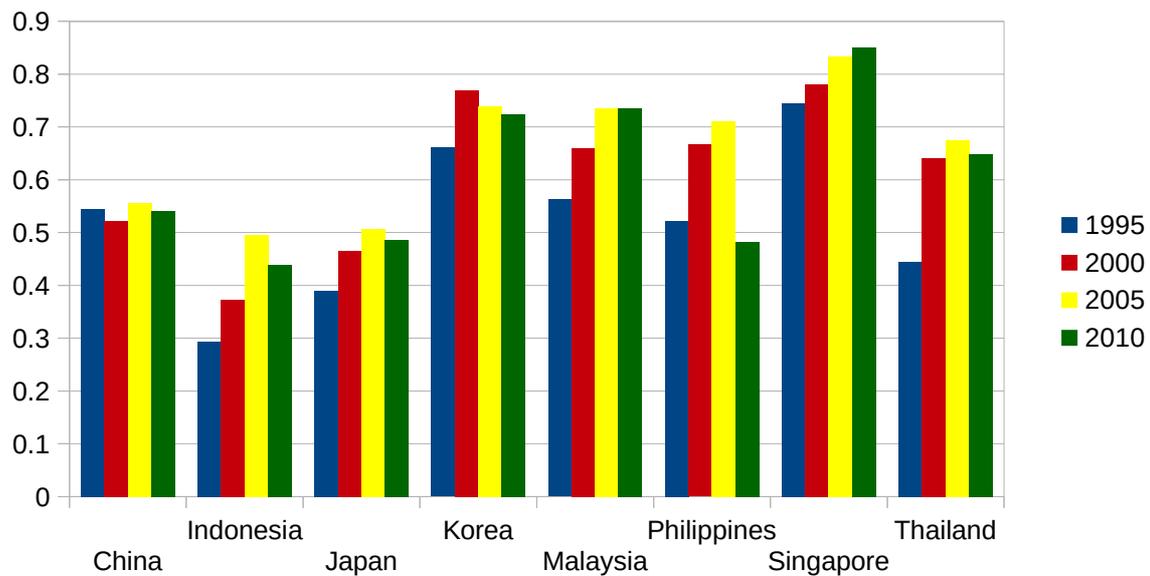
Thus, despite the arguments that interdependence has been mostly unchanged during this period, we see that in fact dependence on both the region and the world has, in general, increased, though the changes vary considerably between countries. While the Southeast Asian countries had their FTA rates reflected by their dependency ratios, this was not the case with the Northeast Asian countries. For them, the rates of dependency were in general lower than those of the Southeast Asian countries, despite also signing many agreements. Moreover, while we do see large percentage changes in dependency, it is unclear how one may interpret them if the initial levels are quite low. For instance, Japan may have increased its dependency on the ASEAN countries by 64.27%, but they started out at the low level of 0.02 (2%).

5.3 Intraindustry Trade

In this section I look at the different levels of intraindustry trade. Once again I track the changes over a fifteen year period. It would be possible to look at the level of intra-industry trade for the

whole region, but again, that would collapse the individual differences. I also show the different levels between the APT region and the whole world. Unlike in the previous section, I am showing just the graphs for the APT region (which includes both ASEAN and the North East Asian countries) and the world.

[**Graph 4:** Intraindustry trade within the APT region.]



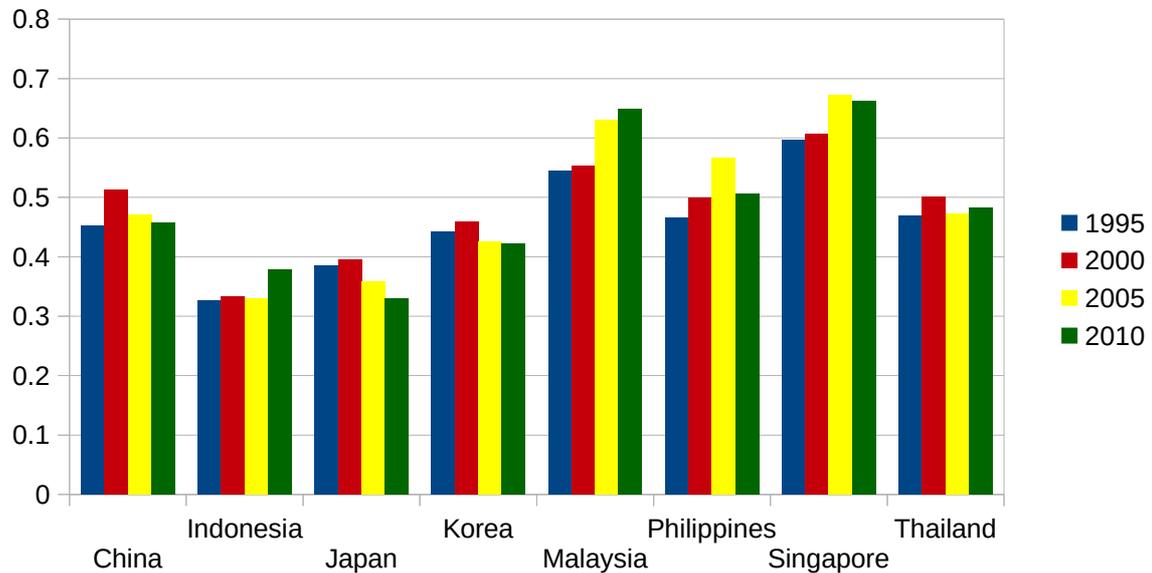
Source: COMTRADE (2014). Note: Unlike with the dependency values, the excluded ASEAN countries were not used in these calculations, as their inclusion would be largely inconsequential due to comparatively low levels of trade and similar intraindustry trade values.

This graph shows intraindustry trade levels for the eight countries with the APT region. Here we can see that there is mostly an increasing trend over time, though again with many countries having a drop-off in 2010. This indicates that countries are trading more similar products with each other and are likely increasing their production integration. Singapore again has the highest levels of all the countries, but this time with many other countries close in values. This makes sense when considering what this indicator measures. Unlike the indicator used in the previous section, this one is equal between partners. That is to say, if country X has a certain level of intraindustry trade with country Y, country Y has the same level. The values are not based on separate individual characteristics to the same degree, so the variation in the case of this region should be lower.

We can see again that China and Japan score comparatively low, with Indonesia joining them, but unlike with the previous measure, Korea is among the highest, in fact, second highest. While in general the Southeast Asian countries score higher, the difference is much more slight than

the previous measure.

[**Graph 5:** Intraindustry trade with the rest of the world.]



Source: COMTRADE (2014).

This graph shows levels of intraindustry trade toward the rest of the world. In this case, Malaysia and Singapore again score highest. Korea this time is significantly lower, and China is higher, relative to the others, compared with the previous graph. Japan and Indonesia are at the bottom. For several countries there seems to be an increase in intraindustry trade, but the pattern is not at all as clear. And critical to note is that the levels of intraindustry trade are much lower than in the previous graph. The difference, in percentage, can be seen here:

[**Table 4:** Difference between regional and non-regional intraindustry trade.]

	APT	World	% Difference
China	0.54	0.46	18.50
Indonesia	0.44	0.38	16.08
Japan	0.49	0.33	47.38
Korea	0.72	0.42	71.38
Malaysia	0.73	0.65	13.18
Philippines	0.48	0.51	-4.81
Singapore	0.85	0.66	28.57
Thailand	0.65	0.48	34.41

Source: COMTRADE (2014).

Here we can see that, aside from the Philippines,²¹ all countries have higher levels of intraindustry trade at the regional level. This indicates that, if intraindustry trade is a good measure of interdependence, and if interdependence leads to more institutions to manage that interdependence, there will be more of an economic incentive for such institutionalization at the regional level. Aside from the Philippines, the lowest difference is 13%. Both Korea and Japan though, have much higher levels, with Korea having 71% higher levels of intraindustry trade at the regional rather than global level.

The graph below shows the changes from 1995 to 2010 in intraindustry trade at both the regional and global levels. Again, as the 2010 levels were generally not the maximum, this chart is conservative.

[**Table 5:** Intraindustry trade changes between 1995 and 2010.]

	APT	Rest of World
China	-0.47	1.19
Indonesia	49.66	15.80
Japan	25.09	-14.26
Korea	9.61	-4.40
Malaysia	30.53	19.17
Philippines	-7.58	8.92
Singapore	14.25	10.84
Thailand	46.05	2.80

Source: COMTRADE (2014). Note: These are percentage changes, not percentage point changes.

Here we note a clear trend toward higher levels of intraindustry trade, with the most dramatic

²¹ I have reason to believe that the Philippines APT 2010 results are in error. There was a very large number of exports classified as "Special transactions, commodity not classified according to class" (code 93) and zero imports under the same classification. This lack of classification of exports may be the reason for the strange results.

increases occurring on the regional level. There are two large decreases, Japan's world intraindustry trade level, and Philippines regional change. Aside from those, we see many large increases across the board and only minimal decreases in a few locations. If intraindustry trade is a factor in institutional growth, we should see a growing emphasis being placed on regional institutions.

5.4 Inferential Statistics

The data presented above show some possible evidence for a connection between economic interdependence and the development of free trade agreements. However, it does not show that the agreements are developed in order to solve coordination problems. In order to test that, I have attempted to find whether or not there is a relationship between the degree of economic interdependence and intraindustry trade between two countries who have signed an FTA and the complexity of the free trade agreement they come to (measured by number of WTO-plus features in the agreement).

Presented below are five models for all of the bilateral FTAs in my set. Model 1 tests just the mean measure of interdependence, model 2 tests just the "weak link" measure of interdependence, model 3 tests just the measure of intraindustry trade, model 4 tests the mean measure of interdependence and the measure of intraindustry trade, and model 5 tests the "weak link" measure of interdependence combined with the measure of intraindustry trade. These are all done using a poisson regression.

[Table 6: Poisson regressions for bilateral FTAs signed with all eight countries.]

<i>N</i> = 44	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>		<i>Model 4</i>		<i>Model 5</i>	
	<i>IRR</i>	<i>Sig.</i>								
<i>Mean Inter.</i>	610.2	.210					14.75	.699		
<i>Weak Inter.</i>			172425	.487					.171	.933
<i>Intraind. tr.</i>					1.77	.145	1.55	.405	1.813	.205
<i>GOF (Pearson Chi-Square)</i>	.724		.729		.709		.731		.725	

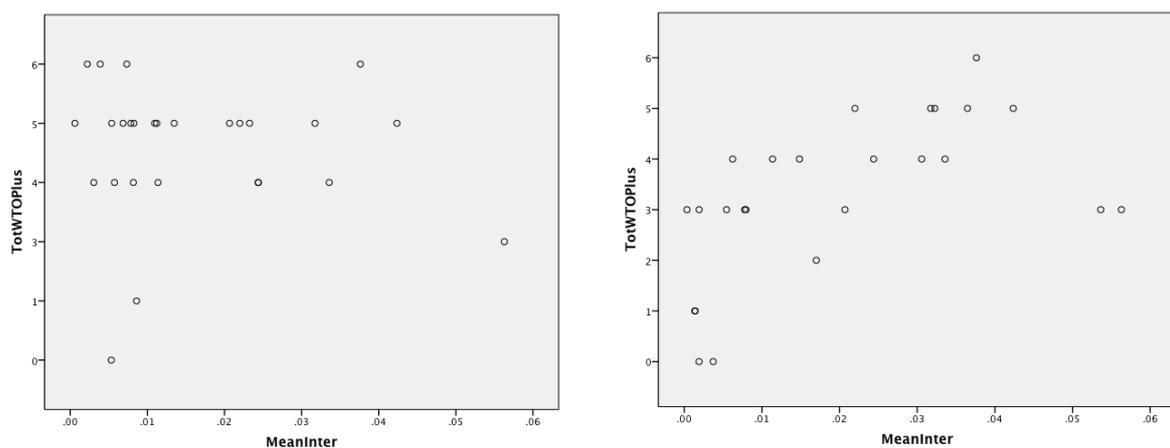
As can be seen, none of the five models show any statistically significant variables.²² This would seem to suggest that the three measures I have selected do not lead to the construction of more

²² How to interpret the coefficients, here represented as Incident Rate Ratios (IRR), as well as the Goodness of Fit measurement, the Pearson Chi-Square, will be discussed later in this section.

complex FTAs, developed to manage more complex trading relationships and solve more complex problems. I think, however, that this interpretation is, at least partially, incorrect. As can be seen from the chart I developed (Appendix 1), the FTAs signed by the three “plus three” countries, demonstrate very little variability in how many WTO-plus elements are present. Almost all of them have between four and six. However, the FTAs signed by the ASEAN countries seem to show much greater variability. Moreover, the previous two sections of this paper has shown that while in general all countries have increased dependency and intraindustry trade during the period in question, only among the ASEAN countries do we see the most interdependent countries (measured through both dependency ratios and intraindustry trade ratios) having the highest number of FTAs. This relationship did not extend to the Northeast Asian countries. They showed low levels of interdependence paired with high levels of FTA creation. Thus, it may be worth breaking this data into Northeast Asian FTAs and Southeast Asian countries, in order to see if a differing relationship applies. Some may argue here that such a split is inappropriate, perhaps that I am selecting on the dependent variable. However, I assert that such a split is justified due to the strong differences between the two groups of countries on these measures, as well as the conceptual understanding that they are in very different positions and are likely to follow different strategies.²³

In order to begin to examine if there is a difference in the relationships, I created scatterplots for both the Northeast and Southeast Asian countries, for both measures, plotted against number of FTA provisions.

[**Graph 6:** Scatterplots of FTA provisions against mean interdependence. Northeast countries (left) and Southeast countries (right).]

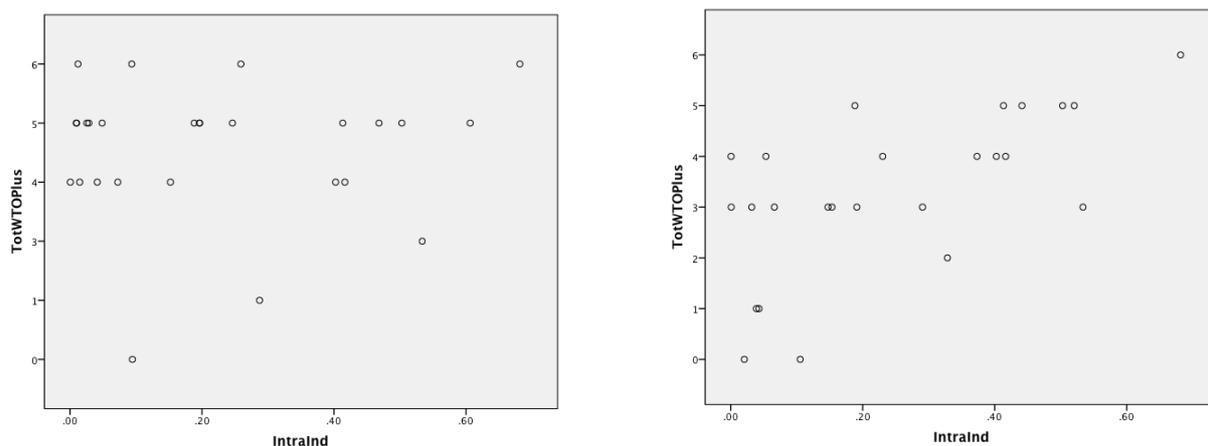


23 There is a question then of what to do about FTAs signed between Northeast and Southeast Asian countries. I have decided to count them under both sets, mainly due to a lack of observations.

Shown above are plots of the mean interdependency against number of WTO-plus elements.²⁴ Right away a difference can be seen. In the Northeast Asian countries, there appears to be no relationship. Aside from only three cases, all the FTAs have four through six features, despite a large difference in interdependence. However, it could still be possible that a relationship persisted if we saw a trend within those three values – however none is present. In fact, we seem to see a cluster of many values in the upper left corner, indicating low interdependence and high FTA complexity. In contrast, the Southeast Asian country FTAs show what seems to be a clear pattern. As the relationships get more complex, the number of complex features in the FTAs increase. There are some outliers, but the relationship seems quite clear.

Now we can examine plots created with measures of intraindustry trade, to see if the same pattern (or difference of pattern) is present.

[**Graph 7:** Scatterplots of FTA provisions against intraindustry trade. Northeast countries (left) and Southeast countries (right).]



In these two plots a similar pattern emerges. For the Northeast Asian countries there is again no apparent relationship, however with less clustering in the top left corner. For the Southeast Asian countries, there is again a fairly clear pattern, more intraindustry trade is associated with more complex FTAs, though perhaps this pattern is slightly less obvious than with the previous measure.

In order to test these patterns for the Southeast Asian countries, a Poisson regression was again employed, using the same models, and the results are presented below.

²⁴ I have chosen here to not show the weak versions of interdependency, however, the results are quite similar.

[Table 7: Poisson regression for bilateral FTAs signed with Southeast countries.]

<i>N</i> = 25	Model 1		Model 2		Model 3		Model 4		Model 5	
	IRR	Sig.	IRR	Sig.	IRR	Sig.	IRR	Sig.	IRR	Sig.
Mean Inter:	2848895	.017					1222.88	.427		
Weak Inter:			1.970E+17	.058					4602885	.567
Intraind. Tr.					4.161	.008	2.753	.169	3.368	.059
GOF (Pearson Chi-Square)	.606		.691		.569		.575		.593	

Here we confirm that, alone, all three measures show statistically significant values. If we look at model 4 we see no significant values, however the significance of intraindustry trade is far greater than with mean interdependence. Model 5 shows intraindustry trade significant at the .1 level, with the weak measure of interdependence not at all significant. The correlation between intraindustry trade and interdependence is much higher for the mean version of interdependence than the weak version, at .679, compared to .515, which could explain why intraindustry trade remained significant only in the model with the weak variant. The same trend is present in model 4 as well, and I would argue that the insignificance there of intraindustry trade should not necessarily be trusted.

The number of observations (25) is low and the model does not appear to be a very strong fit. All five of these models show signs of *underdispersion*. Poisson distributions make the assumption that the mean will be equal to the variance. In these cases, we see that the true variance is smaller than the mean, resulting in Pearson chi-square value/df ratios much less than 1 - which is the expectation. This underdispersion would result in an overestimation of standard errors, thus underestimating the significance of the independent variables (Kennedy 2008:246). However, it is impossible to conclude without adjusting the model exactly what the effect would be.

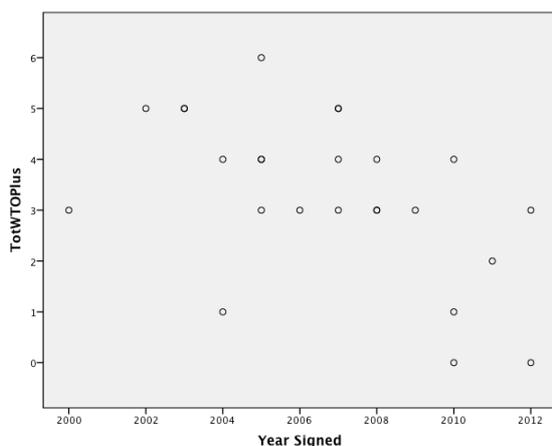
One may wonder how we can interpret the coefficients in these models. This is actually quite difficult to do. I have exponentiated the coefficients, so that the numbers we have are incidence rate ratios (IRR).²⁵ If we first look at model 1, the IRR for the interdependence measure is 2848894.78 (including the decimals). That means moving from 0% mean interdependence to 100% mean interdependence would correspond to a 284889378% expected increase in the number of WTO-plus provisions. While that is an inconceivably large increase, it is critical to point out that the highest level of mean interdependence out of all of these country pairs is 5.63%, which was

25 For a detailed explanation on how to interpret incidence rate ratios for count models, for different types of independent variables see (Hilbe 2008).

between China and Singapore in 2008. If we calculate $2848894.78^{(1/100)}$, we get 1.16, which indicates that to increase interdependence by 1% results in a 16% expected increase in the number of features. If we look at intraindustry trade in model 5, we see that the IRR is 3.37, which corresponds to a 237% expected increase in provisions if we move from 0% intraindustry trade to 100% intraindustry trade. By calculating $3.37^{(1/10)}$, we get 1.13. This means that a 10% increase in intraindustry trade results in a 13% expected increase in these provisions.

Before this section is concluded, one concern must be addressed. As indicated in the previous research section, there is evidence that over time the FTAs have become more complex, with more coverage. I also demonstrated in this chapter that there has been a general tendency during this period for these measures to increase – thus, what I could be picking up is just the effect of time. This would imply that the individual FTAs being tested here are showing a relationship to the measures of interdependence due to fact that those measures are correlated with the year – and something else is actually related to their growing complexity – perhaps some form of institutional learning, or an ideational shift in what FTAs should do. So to test that I have below a scatterplot of the FTAs against the year.

[Graph 8: Scatterplot of FTA provisions against year signed for Southeast Asian countries.]



As can be seen, there does not at all appear to be a connection between later FTAs demonstrating more complexity. In fact, there appears to be a trend in the opposite direction. This was later confirmed by a regression, which showed a significance of .032 and an exponentiated beta of .927 – thus indicating an expected 7.3% decrease in WTO-plus features with each yearly increase. This confirms that the relationships shown above act independently of the year. Moreover, it raises the question of why I am showing a decrease in FTA complexity with time, while Kawai and Wignaraja

(2013) showed the opposite. There are two possibilities. Either this relationship above would not persist if all FTAs were included, including the multilateral ones, or that this is a result of the methodological choices in how to count WTO-features, as discussed in the methodological section. It is important to point out that their analysis, showing the increase, did not break down the actual complexity of WTO-plus agreements, but instead classified the agreements on a binary scale. Thus, it is possible that all or most of these would be considered WTO-plus, to them. Moreover, the fact that almost all the Northeast Asian countries' FTAs would be considered high on my scale of complexity would indicate that it is likely all of them would at least be considered as WTO-plus to them. Thus, the issue can perhaps be reduced to the fact that we are measuring different things. As to why there is a statistically significant decrease here, that could perhaps be due to the possibility that FTAs which are more crucial, and more economically motivated were signed first.

5.5 Discussion

Unlike Ravenhill (2010), by tying trade to GDP, we mostly see large increases in dependence both towards the region and the rest of the world. This pattern is present especially if we look between 1995 and 2005. A similar increase is present for intraindustry trade, both toward the region and the rest of the world, with larger increases happening at the regional level. These large increases can be, unfortunately, difficult to interpret if the original levels are already quite low.

The major benefit to using these individualized measures is that the different rates of FTA creation can be compared to the different levels in these measures. There we see that Singapore and Malaysia, which have very high levels of FTA creation, also have high levels of dependence and intraindustry trade. The Northeast Asian countries meanwhile have high levels of FTAs, with relatively low levels of dependence and intraindustry trade. A pattern possibly emerges in which within the ASEAN countries, high levels of dependence and intraindustry trade corresponds to higher FTA creation rates, whereas this does not extend to the Northeast countries.

This division was further found when looking at the complexity of the FTAs, and whether interdependence of intraindustry trade can act as predictors of that complexity. There we see that there is no relationship present at all among the Northeast countries. In fact, it seems as though they have the tendency to include many provisions in their FTAs as routine. For the ASEAN countries, we see a greater variability in the number of provisions in their FTAs, and we see that intraindustry trade acts as a statistically significant predictor. As I discussed in the methodology section, the system by which provisions are counted is likely to have a large effect. If the system were more

strict, it could end up that the Northeast countries would demonstrate the same relationship. It is possible their FTAs have much greater coverage within the text, despite lacking the intention to actually utilize these provisions.

The fact that the statistically significant relationship between interdependence and provisions disappeared when intraindustry trade was brought in, for the Southeast countries, is very interesting.²⁶ The difference between the measures may in fact reflect the predictions of neoliberal institutionalist theory. The theory would predict that institutions are developed to manage collective action problems, which emerge due to complex relationships between countries (Stein 2008; Hurrell 1995; Keohane 1984). While Keohane and Nye (2012) stated that these problems may emerge due to interdependence, it is likely that interdependence itself is not the cause. This could explain the results from the Southeast Asian regression. Alone, increases in interdependence (and it did not matter whether it was the weak link version or the mean version) were correlated with more comprehensive FTAs. However, once controlling for intraindustry trade, that relationship disappeared. Thus, the relationship was not actually between interdependence and comprehensiveness, but we can hypothesize that it was instead likely that increases in interdependence were correlated with increases in intraindustry trade, which was in fact the true predictor of the provisions.

If more accurate measures are to be found, perhaps it is best to move away from interdependence, and more toward indicators which actually measure the problems themselves. Interdependence may increase these problems, but it is also likely that they can emerge in situations with low levels of interdependence, and situations may exist in which high levels of interdependence are largely absent the problems which institutionalization is meant to solve. This issue *may* explain the higher levels of FTAs among Northeast Asian countries. While they have lower levels of interdependence and intraindustry trade, they have much higher trade levels in total - which could make problems more likely to emerge. However, that is merely a possibility, and nothing in my study can indicate that such a situation is actually the case.

The division between Northeast and Southeast countries may, on the contrary, point to other concerns behind FTA creation, perhaps especially present among the Northeast countries. Asia has been described as "realist" and the competition between especially Japan and China has been stressed (Corning 2011). This could be part of the reason for the difference in my results between Northeast and Southeast Asia. This competition could explain an extra likeliness to sign FTAs on their part, even if not economically necessary, as well as a reluctance to sign one with each other,

²⁶ It is possible that interdependence could retain its significance in a better fitting model. This cannot be completely discounted.

despite very high levels of complex trade. Hence, I could say that this study has found some evidence for the neoliberal institutionalist argument, but also evidence that it is not the complete story.

What do these results say with regard to regionalism? We see that there are, in general, fairly large increases in both dependency and intraindustry trade toward the region, from both the ASEAN countries as well as among the Northeast countries. We also see that intraindustry trade, which for the ASEAN countries was shown to be a statistically significant predictor of FTA complexity, is significantly higher for the regional measures than for the global ones. This is a relationship which was not found for the dependency values. Thus, if intraindustry trade plays a role in FTA creation or FTA complexity, we may expect more comprehensive institutional coverage within the region than outside of it. The growth of FTAs with non-regional partners may be a continuation of "open regionalism" (Bergsten 1997) which may still operate within Asia, or it may be a form of regionalism which is a response to globalization (Moon 2011). Asia's development has been largely export-led (Park 2002), and we can see that throughout the period of this study, Asian countries increased their trade dependence on the rest of the world as well as increased the degree in which that trade is intraindustry - which may signify a more complex form of trade. Therefore, even if there is a higher need to form regional institutions (due to higher levels of intraindustry trade), there has also been present an increasing need for those institutions outside of the region as well.

6 Conclusion

The explosion of FTAs in Asia since 2000 has prompted much speculation. However, there have been very few studies which have directly evaluated the neoliberal institutionalist argument, that they were created to help manage growing trade complexities and problems. Moreover, whether the economic argument was accepted or not, the regional nature of the FTAs was stressed. What this study has attempted to do is to utilize a measure of interdependence which is not zero-sum, as one based on trade-shares is, and a measure of intraindustry trade, to see how trade complexity and interdependence has changed over a fifteen year period, both within the Asian region, and between Asian and non-Asian trading partners. Moreover, I have used these measures as potential predictors for FTA comprehensiveness.

The major findings of this study have been that dependency on and intraindustry trade with both the region and the world has generally increased. Based on comparative levels between the countries, the Southeast Asian countries have their FTA numbers reflected by their intraindustry trade and dependency values, but the Northeast Asian countries, with low levels of intraindustry trade and dependency have signed more FTAs than would be predicted (if this relationship is to hold across the region). Moreover, a similar split was found concerning FTA comprehensiveness. The Northeast countries have very comprehensive agreements, regardless of how complex the trading relationship is. The Southeast countries, on the contrary, demonstrate that intraindustry trade is a statistically significant predictor of FTA comprehensiveness. This is a fairly strong finding in favor of the neoliberal institutionalist argument. However, the division between Northeast and Southeast countries could be problematic for the theory. The success of this methodology for the Southeast countries indicates it could be a useful method for future use. The finding that intraindustry trade is significant but interdependence is not, when used in the same equation together, points toward how better measures can be developed in the future - by focusing specifically on the problems, and not interdependence.

This study has hopefully contributed to our knowledge of FTA growth within the Asian sphere. There has been a dearth of research into the possible 'functional' nature of FTAs, but this study shows that there appears to be some evidence that it is a factor. Moreover, FTA creation has remained understudied on a global level, and so this study can perhaps add to our knowledge of FTA creation generally. Mostly, I hope that this study has contributed through its methodological considerations. The problematic nature of using trade-shares as a potential predictor of FTA growth ought not be understated. As this phenomenon encompasses both Asian partners as well as non-

Asian ones, using trade-shares is hard to justify. Moreover, the success in quantifying FTA comprehensiveness and using it within a regression can be applied more thoroughly and generally, and can become a strong tool to better analyze the reasons for FTA creation.

There are many areas for future research which ought to be considered. Better indicators can be developed to more accurately assess the degree in which trade has led to problems which require institutionalization to manage. Assessing the comprehensiveness of the FTAs can be repeated with more detailed and strict procedures. This method moreover, can be applied to other regions, or even to different issue areas. The division found between Northeast and Southeast countries can also be studied in much greater detail. Furthermore, as was discussed in the methodological chapter, this study is purely correlational in nature, and cannot say anything of causal mechanisms. Thus, there is still a great need to study those mechanism within Asia. If the private sector has not pushed for the establishment of FTAs, why were they developed? Who are the major actors? Studying those questions can provide great clues to the possibilities of further institutionalization and regional development. These findings can both help us understand the Asian region better, as well as develop theories which, while originally focused on Europe, can be of great use around the world, if the non-European experiences are factored in.

7 References

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7.1 Free Trade Agreements

Through the following databases, all the FTA texts can be found:

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8 Appendix 1

Bilateral FTA Agreement	Year Signed	WTO+ Intellectual Property	Environment	Labor st. / Movement	Education / HRD	Investment	Government Procurement	Total
Brunei – Japan	2007	0	0	1	1	0	0	4
China – Iceland	2013	0	0	0	0	0	1	5
China – Switzerland	2013	0	0	0	1	0	0	4
China – New Zealand	2008	0	0	0	1	0	0	4
China – Chile	2005	0	0	0	0	0	1	5
China – Costa Rica	2010	0	0	0	1	0	0	4
China – Pakistan	2006	1	0	1	1	0	0	1
China – Peru	2009	0	0	0	0	0	1	5
China – Singapore	2008	1	1	0	0	0	0	3
Indonesia – Pakistan	2012	1	0	1	1	0	0	0
Indonesia – Japan	2007	0	0	0	1	0	0	5
Japan – Chile	2007	0	0	0	1	0	0	5
Japan – India	2011	0	0	0	1	0	0	5
Japan – Malaysia	2005	0	0	0	0	0	1	4
Japan – Mexico	2004	0	0	0	0	0	0	6
Japan – Peru	2011	0	1	0	1	0	0	4
Japan – Philippines	2006	0	0	0	1	0	0	5
Japan – Singapore	2002	0	1	0	0	0	0	5
Japan – Switzerland	2009	0	0	0	1	0	0	5
Japan – Thailand	2007	0	0	0	1	0	0	5
Japan – Vietnam	2008	0	1	0	1	0	0	4
Korea – Colombia	2013	0	0	0	0	0	0	6
Korea – India	2009	0	0	0	1	0	0	5
Korea – Chile	2003	0	0	0	1	0	0	5
Korea – Peru	2011	0	0	0	0	0	0	6
Korea – Singapore	2005	0	0	0	0	0	0	6
Korea – Turkey	2012	1	1	1	1	1	0	0
Korea – USA	2007	0	0	0	1	0	0	5
Malaysia – Australia	2012	0	1	1	1	1	0	3
Malaysia – Chile	2010	1	1	1	1	0	0	1
Malaysia – India	2011	1	1	0	0	0	0	2
Malaysia – New Zealand	2009	0	1	1	1	0	0	3
Malaysia – Pakistan	2007	0	1	1	1	0	0	3
Singapore – India	2005	0	1	1	0	0	0	4
Singapore – New Zealand	2000	1	1	1	1	0	0	3
Singapore – Australia	2003	0	1	1	0	0	0	5
Singapore – Costa Rica	2010	0	1	1	1	0	0	4
Singapore – Jordan	2004	1	1	1	1	0	1	1
Singapore – Panama	2006	1	1	0	1	0	0	3
Singapore – Peru	2008	1	1	0	1	0	0	3
Singapore – USA	2003	0	1	1	1	0	0	5
Thailand – Australia	2004	0	1	1	1	0	0	4
Thailand – New Zealand	2005	0	1	1	1	0	0	3
Thailand – Peru	2010	1	1	1	1	0	0	0