Government responses to global value chains: Understanding the national content policy of Export Credit Agencies

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ABSTRACT

Export credit agencies are government entities that support a country's exports through non-payment insurance policies. Traditionally, only high national content exports benefitted from their support. In recent years, most international trade involves global value chains and the export of intermediate goods with production in multiple jurisdictions, questioning the relevance of high national content policies.

Export credit agencies and their national content policies provide a unique setting to explore government policy response to global value chains. I expected a link between global value chains and national content policies. However, making use of binary logistics regression, the findings suggested only a minor link to global value chain participation and no link to value-adding activities. Furthermore, the wealth of a country appeared as a strong influencing factor. This anomaly was a surprise and triggered further analysis, making use of abduction.

The anomaly was confirmed by reviewing the export credit agencies' websites and questionnaire responses and by retesting the value-adding activities using research and development as an alternative variable. Next, unemployment and country competitiveness were explored as possible explanations. None of these produced confirming results and the wealth of the country continued to dominate, although wealth interacting with competitiveness also emerged as a contributor. The relevance of wealth was confirmed using an alternative country wealth variable. Furthermore; the importance of country ratings, influenced by wealth and which enhances country competitiveness, was highlighted by export credit agencies within their websites.

Determining the appropriate response to global value chains is a complex matter and the response of governments vary, with some embracing the concept and adjusting policies to support integration, while others remain circumspect, concerned by the effect on job creation. I conclude that the degree of wealth of an economy, especially when enhanced by competitiveness, facilitates the willingness of countries to devise a response. This places exporters and countries from smaller and less wealthy economies at a disadvantage. I

suggest that global institutions, such as the World Bank, implement policies to address this imbalance.

Key words: Country Competitiveness, Export Credit Agencies, Global Value Chains, Government Policy, National Content, National Interest, Unemployment, Wealth.

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Abbreviation	Meaning
BRIC	Brazil, Russia, India, China
ECGs	Export credit guarantees
ECAs	Export credit agencies
EDC	Export Development Canada
EU	European Union
GDP	Gross Domestic Product
GIN	Global Innovation Networks
GPNs	Global production networks
GVCs	Global value chains
NAFTA	North American Free Trade Agreement
OECD	Organisation for Economic Cooperation and Development
R&D	Research and Development
S&P	Standard and Poors
TiVA	Trade in Value-Added
UK	United Kingdom
USA	United States of America
US Exim	United States of America Export-Import Bank
WTO	World Trade Organisation

1 CHAPTER 1: INTRODUCTION

1.1 BACKGROUND

Official Export Credit Agencies (ECAs) have been established by governments to support international trade and therefore form an integral part of government policy, especially as it relates to trade and exports. It is generally recognised that exporting is beneficial for exporting firms and for the economic development of the exporting country (Blackmon, 2017; Brunner, 2015; Chan & Manova, 2015; Schöne-Alaluf et al., 2011). Therefore, there are strong national reasons for the existence of ECAs, including their ability to support the international competitiveness of a country's exporters and the associated contribution to job creation. In order to maximise these benefits, ECAs generally have a range of eligibility rules such as the percentage of the national content required in any transaction and whether they are able to support or not the supplies from suppliers not located in the country of the ECA, be that third party suppliers or subsidiaries of Multinational Corporations (Dinh et al., 2012). National content refers to the value of content sourced from within the exporting country.

To explain further, ECAs support exporters and project developers from their country. This support is based on the issuing of insurance policies or guarantees protecting exporters or a funding bank against the risk of non-payment by their customer. ECA support generally targets medium to long term transactions, which are transactions with repayment terms in excess of two years. The insurance policies or guarantees issued by ECAs are backed by the government and are issued either by a government entity or a private entity acting on behalf of their government (Badinger & Url, 2013; Baltensperger & Herger, 2009; Turguttopbas, 2013). The involvement of ECAs facilitates the raising of finance which then supports the desired trade and therefore ECAs can be considered a mechanism to support international trade, especially in relation to capital equipment exports and infrastructure projects (Badinger & Url, 2013; Blackmon, 2017; Turguttopbas, 2013).

ECAs have been established by governments to support national exports from their country by reducing the repayment uncertainties associated with exports. They do this by guaranteeing the repayment by the customers of exporters, a choice that is driven by the contribution that exporters make to employment and economic development within the

exporting country (Klasen, 2011). This support is premised on the fact that if the ECA is able to support, through an insurance policy or guarantee, the importer's ability to obtain extended credit or finance, then the importer is more likely to sign the supply contract with the ECA's exporter (del Carmen García-Alonso, Levine, & Morga, 2004). It is a product that is of particular interest when exporting to perceived higher risk economies (Abraham & Dewit, 2000; Blackmon, 2017; Klasen, 2011; Singh, 2010). The value that ECAs bring to exports and trade facilitation ensures that they form an integral part of government strategy (Abraham & Dewit, 2000; Blackmon, 2017).

However, the international trading environment has changed significantly from when ECAs were first established a century ago, with global value chains (GVCs) now influencing how the majority of international trade is conducted. This shifting environment is having an impact on how ECAs, as a government policy instrument, respond. The focus of this research is on how government policy, through the national content policy of ECAs, has reacted to the changed international trading environment and in particular GVCs.

1.1 PROBLEM STATEMENT

GVCs have become influential globally in determining how products are sourced and manufactured (De Backer & Miroudot, 2014; Gereffi & Fernandez-Stark, 2016). This revised means of conducting business brings into question the practicalities and benefits of exporters maximising content from within their country.

The development of GVCs is resulting in governments grappling with how to respond to GVCs and what strategies and policies to implement (De Marchi & Alford, 2021). GVCs challenge governments to consider whether they encourage participation within GVCs or resist participation by emphasising local procurement in order to preserve local jobs. Governments' response to GVCs often manifests itself in the national content policy requirements of ECAs; which can either be supportive, allowing exporters to benefit from GVCs, or cautionary, fearing the negative impact of job losses (Blackmon, 2017; Hopewell, 2017; Mulligan, 2007; Stephens 1999). ECAs are responding to changing production

patterns in a variety of ways including a number of ECAs adjusting their national content policies.

ECAs were established by governments to support exports, because of the positive contributions exports make to the exporting country, particularly job creation (Badinger & Url, 2013; Baltensperger & Herger, 2009; Blackmon, 2017; Brunner, 2015; Chan & Manova, 2015; Turguttopbas, 2013). Risks associated with exporting to challenging foreign markets and the information asymmetries attached to these markets, often limited the volume of exports and therefore governments felt it necessary to step in and create official ECAs to help curtail these risks (Agarwal & Wang, 2016; Allen, 2015; Ascari, 2007; Blackmon 2014; Dawar, 2020; Klasen, 2011; Stephens, 1999).

The government involvement in official ECAs necessitated the establishment of eligibility criteria which usually required the export contract to contain a high value of national content. This ensured that the exporting country achieved maximum benefit as a result of the ECA's involvement in the transaction, generally viewed in terms of employment (Bischoff, 2014; Klasen, 2011). Job creation in the exporting country and limited appetite for this business in the private insurance market were key rationales for the original establishment of ECAs (Agarwal & Wang, 2016; Allen, 2015; Ascari, 2007; Bischoff, 2014; Blackmon 2014; Drysdale, 2014; Dawar, 2020; Klasen, 2011; Stephens, 1999).

However, more recently there has been a shift from the original reasons why ECAs were established by governments, driven by the changing dynamics within the international trading environment. GVCs have become influential in the way products are produced causing production to involve numerous jurisdictions thereby disbursing job creation across these jurisdictions (Amador & Cabral, 2014; Baldwin, 2011; Beltramello, De Backer & Miroudot, 2014; De Backer, & Moussiegt, 2012; Gereffi, 2014; Gunnella et al., 2017; Timmer, Erumban, Los, Stehrer, & Vries, 2014). These changes and especially GVCs are challenging government policy, specifically in terms of the national content policies of ECAs.

1.2 PURPOSE STATEMENT

GVCs have become the dominant means by which products are sourced, manufactured, and traded; causing governments to consider the impact that this is having on their economies and to determine how best to respond in order to ensure maximum benefit for their country. The close association between ECAs and governments provides a unique, but extremely relevant setting, to explore the various government policy responses to GVCs as seen through the national content policies of ECAs.

A better understanding of government responses to GVCs provides us with valuable insights into how governments are supporting or inhibiting the production and sourcing choices of private companies and how governments are approaching country and firm competition in the changed global trading environment.

If GVCs are indeed influencing the national content policies of ECAs then it is reasonable to assume that there should be some relationship between the national content policies of ECAs and the extent or nature of GVCs within those countries. Firstly, this research aimed at developing an understanding of how the national content policies of ECAs have changed in response to GVCs and the extent of these changes. Secondly, this research aimed to determine whether the ECAs are influenced by the degree of a country's integration within GVCs and the country's positioning within the value-adding activities of GVCs. Finally, expanding on the above, the research aimed to understand whether a country's position within GVCs influence the national content policy decisions of ECAs. Exploring the national content policies of the various ECAs, revealed valuable insights into how governments and their policies are reacting to GVCs.

1.3 RESEARCH QUESTIONS

Given this background, my research question is:

- How have governments changed the national content policies of ECAs in response to GVCs?

The sub research questions are as follows:

- To what extent does the national content policy of ECAs reflect the degree of a country's integration within GVCs?
- To what extent does the national content policy of ECAs reflect a country's position within the value-adding activities of GVCs?
- What additional GVC related dynamics, if any, are at play that reflect the national content policy of ECAs?

A central consideration in responding to these questions has to do with the apparent conflicting approaches of "national content" verse "national interest". In the case of national content, the ECA supports foreign trade provided there is a stipulated minimum national content, with the expectation that it will support domestic economic activity. In contrast, national interest does away with the national content requirement, with the argument that support for global trade per se is what is key.

1.4 IMPORTANCE AND BENEFITS OF THE STUDY

The Berne Union is the leading association of the export credit and investment insurance industry and its membership includes ECAs, multilateral financial institutions and private credit insurers from 73 countries. In 2020 the Berne Union members provided US$2.5 trillion of non-payment risk protection to banks, exporters and investors which accounted for 13% of global cross border trade based on World Trade Organisation (WTO) statistics (https://www.berneunion.org/). Hopewell (2021) indicates that approximately 60 ECAs are now in operation worldwide providing more than US$ 300 billion in trade related finance

annually. She goes on to say that in certain countries as much as 20% of exports are backed by state export credits and that they can account for as much as 5% of Gross Domestic Product (GDP). Export Credit Guarantees (ECGs) play a significant role in supporting international trade and economic development, consequentially it is an area worthy of quality and current academic research.

Much of the ECA literature focuses on the traditional rationale, job creation, for establishing ECAs (Agarwal & Wang, 2016; Allen, 2015; Ascari, 2007; Blackmon 2014; Klasen, 2011; Stephens, 1999). However, since ECAs were first established, GVCs have become the dominant way in which international trade is conducted, bringing into question the relevance of the existing literature on ECAs. The GVC literature confirms that companies are adjusting the way they source products and that trade today is dominated by the trade in intermediate goods and services and that countries increasingly wish to participate in the higher value-adding activities (Cano-kollmann, Hannigan & Mudambi, 2018; Timmer, Dietzenbacher, Los, Stehrer, & J. de Vries, 2015; Yeung & Coe, 2015). Academic research on ECAs is limited and much of the research that does exist is outdated and does not consider the significant changes taking place within the international trade environment within which ECAs operate, suggesting that there is a need to bring the literature in line with these modern dynamics.

More recent literature has recognised that a number of ECAs are adjusting their national content policies in response to GVCs (Bischoff, 2014; Hunke, 2014; Klasen, 2011; Schipfer, 2017). However, the extant literature provides little insight into the actual national content policies of ECAs, how these have changed and the major factors influencing the determination of these policies and by association government policies. Furthermore, to the best of my knowledge, there is limited to no analytical research that comprehensively explores exactly how ECA national content policy has changed nor whether this policy has evolved in response to GVCs. As a starting point, this research wished to identify the national content policies of ECAs. It then wished to understand whether GVCs are in fact influencing the national content policy decisions of ECAs by exploring the linkages between national content policy, governments, GVC participation and a country's positioning in terms of value-adding activities.

This research contributes to the theoretical body of work on global trade by considering the roles of ECAs and GVCs jointly. The close association between ECAs and governments, ensures that the research goes beyond ECAs and in fact provides a useful insight into the policies of governments as it relates to GVCs. Much of the research to date on GVCs has been from the perspective of firms and how they organise themselves. The role of trade policy within GVCs, despite its relevance, has been a somewhat less researched area (Curran, Nadvi, & Campling, 2019). While there is an increasing focus in the literature on the role of governments within GVCs and how government policy should respond to the changing realities of business, little of that research is able to contextualise actual government policies to country specific trade data to the extent of this research. Gereffi (2019, p. 205) is of the view that "the GVC paradigm has managed to find a sweet spot of academic acceptance and policy relevance in the swirling controversies surrounding globalization and development". The national content policy of ECAs, not previously considered in the GVC literature, provides a unique setting for reviewing government policy. Examining how ECA national content policies are associated with a country's involvement within GVCs will shed light on the importance of GVCs as a mechanism for organising economic activity and as an influencer of the international trade policies of governments.

In addition to the academic value of the research, this research will benefit practitioners, specifically those involved in ECAs and within government responsible for international trade and ECAs. Hunke (2014) indicates that policymakers in a globalised world are responsible for amending the policies of ECAs in response to a changing export trade environment. He indicates that academia has a key role to play in identifying relevant trends and changes, arguing that it remains unclear as to how ECAs should respond to internationalisation and how rules relating to national content should be amended. Academic research can shed light on this, particularly if such research showed the various mechanisms at work (Hunke, 2014) . Bischoff (2014), in referencing Germany, concurs that reconsidering national content policy from a practical, competitive, and academic perspective is needed. There is therefore a need to update the ECA literature considering the current environment and in particular to consider ECGs from the perspective of national content policies.

1.5 STRUCTURE OF THE THESIS

The following chapter contains the literature review and commences with understanding ECAs; which includes a history of ECAs, the traditional rationale for establishing ECAs and the relevance of national content. The second part of the literature review covers GVCs and how these challenge the traditional rationale of ECAs. The various research questions are reiterated within this second part.

Chapter 3 addresses the research design and methodology and covers the research type, potential bias, validity and reliability and ends with ethical considerations. The research type utilised is abduction and the following chapters follow the abduction methodology. Chapter 4 highlights the intended population and sampling, the unit of analysis and the data collection methods. The chapter identifies the anomaly by analysing the national content policy and GVC data utilising binary logistics regression. Chapter 5 reconfirms the anomaly by verifying my assumptions through a review of the websites and questionnaire responses of the ECAs and by reconsidering the binary logistics regression analysis by utilising Research and Development (R&D) and two variables associated with value-added manufactures as alternative variables to the value-added services variables. Chapter 6 generates possible alternative explanations for the results and in particular considers job creation and country competitiveness. Chapter 7, confirms my hunch that country wealth ultimately facilitates the national content policy of ECAs and that it is particularly strong when interacting with country competitiveness. This confirmation is done be redoing the binary logistics regression analysis with an alternative wealth variable and in identifying within the websites of ECAs references to the importance of country rating.

The results of the research are then discussed in Chapter 8. The chapter discusses the key findings as they relate to GVCs, unemployment, country competitiveness and the size and wealth of countries. The chapter provides various recommendations and closes with commentary regarding the future of ECAs. The final chapter, Chapter 9, concludes the research with a summary of the contributions of the research, provides recommendations for future research and highlights the research limitations.

2 CHAPTER 2: LITERATURE REVIEW

This research focuses on how government policy has responded to GVCs and the changing dynamics of international trade. The setting that I have chosen to gain this insight into government policy is ECAs and their national content policies. In order to facilitate the understanding of this research, it is important to first understand what ECAs do and how they have evolved since they were originally established.

The opening section of this chapter clarifies the context of the research by providing background information on how ECAs operate, the evolution of ECAs since they were first established and the traditional rationale for establishing ECAs. The chapter then explains the relevance of the national content policies of ECAs and clarifies the current regulatory environment that seeks to ensure a level playing field within the export credit finance industry. The regulatory guidelines do not address national content, allowing ECAs to introduce national content policies at their own discretion.

The next part of the literature review addresses GVCs from a general perspective and how they are influencing the international trading environment. The review goes on to discuss how ECAs are responding to these changing dynamics and how GVCs are challenging the traditional rationale for their establishment. The chapter concludes with highlighting how the literature review helped frame the research questions that are addressed in the remainder of the thesis.

2.1 UNDERSTANDING EXPORT CREDIT AGENCIES

2.1.1 EXPORT CREDIT AGENCIES AND THE GUARANTEES THEY ISSUE

ECAs are government institutions or private companies operating on behalf of their governments, that provide support for a country's exports by issuing ECGs or insurance policies (Badinger & Url, 2013; Baltensperger & Herger, 2009; Blackmon, 2017; del Carmen García-Alonso, Levine, & Morga, 2004; Dinh & Hilmarsson, 2012; Mulligan, 2007; Schöne-Alaluf, Bittner, von Waldenfels, 2011; Stephens, 1999; Turguttopbas, 2013; Wright, 2011).

Generally ECAs focus on supporting medium to long term transactions by issuing an insurance policy or guarantee either to an exporter or to a bank, protecting them against the risk of payment default for either commercial or political risk reasons by an importer who is usually located in a developing country (Abraham & Dewit, 2000; Allen, 2015; Bischoff, 2014; Blackmon, 2017; Blackmon, 2014; Dinh & Hilmarsson, 2012; del Carmen García-Alonso, Levine, & Morga, 2004; Hunke, 2014; Klasen, 2014; Moser, Nestmann, & Wedow, 2008; Stephens, 1999; Turguttopbas, 2013). Commercial risk refers to the ability of the buyer or borrower to pay, while political risk covers events such as currency inconvertibility and the inability to transfer currency; confiscation, expropriation and nationalisation; war and civil war; breach of contract and cancellation of licenses (Allen, 2015; Blackmon, 2017; Blackmon, 2014; del Carmen García-Alonso, Levine, & Morga, 2004; Mayer, 2018; Stephens, 1999; Tan, 2015; Turguttopbas, 2013; Wang, Mansilla, Kikuchi, & Choudhury, 2005).

2.1.2 A HISTORY OF EXPORT CREDIT AGENCIES

2.1.2.1 *THE EARLY DAYS OF EXPORT CREDIT AGENCIES*

The first official ECA to be established was by the United Kingdom (UK) government in 1919, established in order to support UK exports to Russia following Russia's collapse during the First World War (Ascari, 2007; Short, 2001; Singh, 2010; Stephens, 1999; Tan, 2015; Venkataramany & Bhasin, 2014; Wang et al., 2005; Wright, 2011). This was followed by a few other countries establishing ECAs, such as Germany soon after in 1919 and the United States of America (USA) in 1933 (Ascari, 2007; Mulligan, 2007; Short, 2001; Stephens, 1999). The post Second World War period saw a plethora of countries establishing ECAs in order to support exports during the post war reconstruction period. By the 1980s most Organisation for Economic Cooperation and Development (OECD) countries had established ECAs (Ascari, 2007; Mulligan, 2007; Short, 2001; Singh, 2010; Wang et al., 2005; Wright, 2011).

The catalyst for the establishment of ECAs was often major global events such as the First World War, the Great Depression and the Second World War. The consequence of these

global events were that exports needed to be encouraged because of the perceived escalation of risk (Stephens, 1999). For example, Canada's ECA was established in 1944 in order to support the financing of exports to Europe after the Second World War (Kotowski, 2007). By establishing these ECAs to support exports, these countries wished to protect and create employment within the exporting country (Stephens, 1999).

Initially ECAs supported short term trade; but steadily the tenors increased, first to medium term tenors in the two to five year range and finally in excess of five years (Mulligan, 2007). Furthermore ECAs steadily expanded their product offering from political risk insurance to include commercial risk insurance and complex project finance structures (Short, 2001). Since the 1990s OECD ECAs have reduced their activity in the short term sector and the European Union (EU) has in fact restricted ECA activity in the short term sector at least as far as it relates to exports to EU and OECD countries, believing that these risks can be adequately covered by the private sector (Wang et al., 2005). Kotowski (2007), while discussing the Canadian ECA that covers both short term and medium to long term transactions, also believes that the private sector can adequately cover short-term trade.

2.1.2.2 *THE TRADITIONAL RATIONALE FOR ESTABLISHING EXPORT CREDIT AGENCIES*

The founding principle of ECAs was to facilitate a country's trade by supporting exports from within their domestic economy that would not have been done due to the perceived political and commercial non-payment risks associated with the trade. The general premise was that the involvement of an ECA facilitated the international competitiveness of exporters by enabling them to offer a funding solution to their foreign customers. ECAs removed the uncertainties and risks of trade away from exporters and banks, thereby enabling the export trade to take place and by so doing ensuring that jobs were preserved and created in the exporting country. Governments recognised that the enhancement of exports was important in a globally competitive trade environment. It was necessary for governments to support the establishment of ECAs because private insurance or finance was not available or too expensive (Agarwal & Wang, 2016; Allen, 2015; Ascari, 2007; Blackmon 2014; Dawar, 2020; Klasen, 2011; Stephens, 1999).

Other benefits that the exporting country sought to attract by establishing ECAs included the generation of financial revenues which would contribute to increased economic growth and improved balance of payments, developing a mechanism to support industrial policy and strategic industries, the fostering of improved diplomatic relationships between the two trading countries with the expectation that this would lead to further trade opportunities, the creation of an instrument to match other countries' export promotion programmes referred by some as creating a "war chest" for the international trade environment, assisting in helping the country diversify its export destinations especially to developing markets and stimulating the development of the manufacturing sector (Allen, 2015; Ascari, 2007; Badinger & Url, 2013; Fitzgerald and Monson, 1989; Klasen, 2011; Kotowski, 2007); Stephens, 1999).

2.1.2.3 *THE POSITIVE CONTRIBUTION OF EXPORT CREDIT AGENCIES TO INTERNATIONAL TRADE AND NATIONAL EXPORTS*

Authors in general agree that ECAs and the ECGs they issue make a positive contribution to exports. Auboin and Engemann (2014) analysed short term trade credit data from the Berne Union members between 2005 and 2011 and found a link between trade credit and trade, finding that a 1% increase in trade credit translates to a 0.4% increase in real imports. Badinger and Url (2013) in analysing Austrian exporters concluded that ECGs have a non-negligible effect on increasing a country's exports. Freund (2016) analysed United States of America Export-Import Bank (US Exim) financing and USA exports and concluded that for every US$1 of US Exim support there was US$1.35 in greater USA exports and US$1.80 greater exports when it came to Sub-Saharan Africa.

ECGs account for a significant portion of world trade, have a non-negligible effect on the integration of the world economy and can be particularly valuable during slumps in international trade where there is increased uncertainty and mistrust (Badinger & Url, 2013). The Berne Union is the leading global association for the export credit and investment insurance industry with membership that includes government backed official ECAs, multilateral financial institutions and private credit insurers from 73 countries (https://www.berneunion.org). In 2020 the members of the Berne Union provided US$ 2.5

trillion of payment risk protection to banks, exporters and investors accounting for approximately 13% of cross border trade.

2.1.2.4 *THE RISE OF EMERGING MARKET EXPORT CREDIT AGENCIES*

In recent years there has been a shift in export market share with emerging countries, especially China, increasing their market share of exports at the expense of more developed economies. This shift is not only in low technology production nor in only intermediate production, but also applies to medium to high technology products and to both intermediate and final goods (Beltramello et al., 2012). Gunnella et al. (2017) confirm that the international fragmentation of production has had a non-negligible effect on the shift of market share. Developing countries in 2015 accounted for 31.9% of global GDP up from 15% in 1970 and 21% in 2000, driven largely by east Asia and China in particular. They have also started playing a greater role in global trade with their share increasing from 30.3% in 2000 to 43.4% in 2015 (Horner & Nadvi, 2018).

Reference to the “south” or “global south” in trade terms tends to refer to emerging markets such as Latin America, Caribbean, Africa and developing Asia including China (Horner & Nadvi, 2018). Horner & Nadvi (2018) identify three modern trends which include that almost half of manufactured exports originate in the south, that consumption in the south is rapidly increasing (32% in 2010 and estimated to be slightly under 50% by 2025) and that the dominant trade flow is increasingly south–south and no longer north–north. South–south trade has grown from 11.4% in 1995 to 12.8% in 2000 to 25.3% in 2015, while north–north trade has reduced from just under 50% in 2000 to about one third in 2012 to 2015 (Horner & Nadvi, 2018). Gereffi and Sturgeon (2013) consider this a reorganisation of the global economy that is not only about changing global sourcing arrangements but also a shift in end markets towards developing countries. The growth in developing market participation in global trade and especially trade orientated towards other developing markets has contributed to the rise of emerging market ECAs, including ECAs from Brazil, Russia, India, China (BRIC), Turkey and South Korea (Dawar, 2020; Freund, 2016; Mulligan, 2007).

During the early days of ECAs, some emerging markets established ECAs, for example India in 1957. However, it was not until the 1990s that emerging markets really started

establishing ECAs (Fitzgerald & Monson, 1989; Mulligan, 2007; Tan, 2015; Venkataramany & Bhasin, 2014; Wang et al., 2005; Wright, 2011). Stephens (1998) in discussing the role of ECAs during the Asian financial crisis of 1997 indicated that of the ECAs existing in South East Asia, only South Korea was of any significance in size and that the remainder were relatively new, inexperienced and small. Sinosure, China's ECA, was established in 2001 (Wang et al., 2005).

However, nowadays, these newer ECA players are significantly expanding ECG backed financing to the extent that they now account for more than half of global export credit support (Dawar, 2020; Freund, 2016). ECAs from the BRIC countries; led by China, now the world's largest provider of ECGs, have grown their share of the global ECA business from 3% in 2000 to 40% (Hopewell, 2021; Hopewell, 2017). Although, in reality, this shift is very much dominated by China, with China accounting for 90% of BRIC country ECGs (Hopewell, 2021). Hopewell (2021) provides US EXIM data from a 2015 report that shows China being the largest ECA by a significant margin. Now that South Korea is considered a developed nation by UNCTAD, the next largest ECA from a developing country is India in ninth spot, followed by Brazil (ECA subsequently closed down) and Russia in 16th and 17th position respectively.

In fact, the rapid emergence of developing market ECAs and the global competition offered by exporters from these countries have resulted in many of the developed market ECAs crying foul in the international trade arena, believing that these ECAs are operating outside of the various regulatory arrangements and are providing unfair support for their exporters (Dawar, 2020; Hopewell, 2021). Offering preferential funding arrangements to customers of Chinese firms does indeed appear to be an important component of Chinese foreign policy (Dawar, 2020). Hopewell (2021) concurs that export credits have become a key part of China's developmental state toolkit and a means by which China deploys its financial power to give its firms a competitive advantage in global markets. Gereffi and Sturgeon (2013) are of the view that developing countries are now in a position to exert greater influence over the economic and political global order and therefore it is not surprising to see the growing influence of the activities of emerging market ECAs, nor is it surprising to see developed market ECAs expressing concern over these developments.

2.1.2.5 *THE RISING CAPABILITIES OF THE PRIVATE CREDIT AND POLITICAL RISK INSURERS*

A recurring theme amongst authors is that governments were required to establish ECAs due to the lack of ability or interest from the private financial and insurance markets to fulfil this role. ECAs were required to help address financial market distortions with the private insurance market being unable to offer adequate and reasonably priced insurance to cover the risks of non-payment (Ascari, 2007; Fitzgerald & Monson, 1989; Stephens, 1999).

In parallel to the emergence of emerging market ECAs has been the rise of the capabilities of the private credit and political risk insurance sector to offer comparable products to the public sector ECAs. Stephens (1999) as far back as 1999 identified the changing environment within which ECAs operated and made specific reference to the emergence of private insurance players and the perhaps contradictory requirement of ECAs being financially viable while remaining an insurer of last resort.

A key understanding when ECAs were set up was that they would complement the private sector and not compete with it (Allen, 2015; Stephens, 1999). ECAs in theory are only required when the private market fails and therefore ECAs are not supposed to compete with the private market, rather acting as an insurer of last resort stepping in when the repayment terms are long, the project values large or the risks associated with the customer and / or country high (Ascari, 2007; Blackmon, 2017; Herger & Lobsiger, 2010; Hunke, 2014; Felbermayr, Heiland, & Yalcin, 2014). Information asymmetries are a key reason for ECAs to step in and plug the gap in the private insurance market. However, technology enables much improved access to data and information which significantly improves the private sectors ability to make informed decisions regarding risk (Allen, 2015; Wang et al., 2005).

Private insurance companies are now able to offer similar products to those of the ECAs, bringing public sector ECAs into competition with the private insurance market (Berry, 2016; Berry, 2014; Stephens, 1999; Wang et al., 2005). Singh (2010) acknowledges that the private insurance market is expanding their products and that in addition to short term products they are also offering at least medium-term products. Allen (2015) notes that the private market is continually expanding and absorbing the market gap. Wang et al. (2005)

notes the rise of new, private sector players in the medium to long term political risk insurance sector and confirms that private insurers such as AIG, Sovereign and Zurich (no longer writing this business, but others have stepped in) are able to cover risks for durations as long as 15 years.

To clarify where ECAs are supposed to operate, risks have been divided into “marketable” and “non-marketable”, with the assumption being that “marketable” risks can be managed by the private sector and “non-marketable” risks by ECAs. Non-marketable risks are considered risks located in higher risk countries, usually emerging and developing markets, and where the payment terms are in excess of two years (Badinger & Url, 2013; Berry, 2016). Berry (2016) confirms that the private sector is able to adequately cover the “marketable” category but disputes the assertion that the private sector is unable to participate in the “non-marketable” category. He believes that the “marketable” / “non-marketable” classification is too simplistic. While there is some truly “non-marketable” risks where the values and the tenors are significant or the counter party risks simply too high, in the vast majority of cases there is at least some private market insurance available and therefore Berry (2016) proposes a third category which he refers to as “capacity constrained marketable risks”. Ascari (2007) had before suggested that the distinction between “marketable” and “non-marketable” was outdated.

Vinco David, Secretary General of the Berne Union, in the Berne Union Yearbook 2020 noted that in the last 20 years there has been an increasing degree of cooperation between ECAs and private insurers with ECAs reinsuring part of their business in the private market. David highlighted that a number of private insurers have developed appetite and capacity for supporting longer tenor, single risk ECA business. This cooperation has enabled ECAs to expand their capacity while private insurers benefit from additional sources of income and diversification of their portfolios.

However, despite the rising capabilities of the private insurance market, it is generally agreed that the private sector is not yet capable of replacing ECAs and that there continues to be a role for ECAs especially when the tenors are long, the projects very large, the transaction involves small-medium size private companies and in markets considered

relatively risky (Allen, 2015; Berry, 2016; Mayer, 2018; Wang et al., 2005). Furthermore, the relevance of ECAs is particularly prevalent in times of crises.

2.1.2.6 *EXPORT CREDIT AGENCIES IN TIMES OF CRISES*

As previously highlighted, ECAs tended to be established around the occurrence of major international catastrophic events such as the two world wars and the great depression of the 1930s. Exports and international trade are generally considered catalysts for economic growth and development. However, governments are required to step in during catastrophic times, because of an increased fear of risk. The valuable role and the countercyclical nature of ECAs in times of crises has again been brought to the forefront by more recent major international incidences.

In the years leading up to the 2008 global financial crises, interest in ECAs had waned. However, the global financial crisis triggered a renewed interest in the activities of ECAs. In the years during and immediately post the crisis, ECAs covered an increased portion of world trade (Asmundson, Dorsey, Khachatryan, Niculcea, & Saito, 2011; Badinger & Url, 2013; Dawar, 2020; Klasen, 2011; Singh, 2010). The waning interest in ECAs pre the crisis was largely as a result of the availability of excessive liquidity, greater involvement of private players and an increasing array of risk management products (Singh, 2010; Wang, Mansilla, Kikuchi, & Choudhury, 2005) .

A consequence of the financial crisis was the dramatic reduction in international trade with trade volumes declining by 12% in 2009 (Badinger & Url, 2013; Blackmon, 2016). It would seem that exports are particularly badly hit during a financial crisis influenced by rising concerns regarding risks such as exchange rate fluctuations, political risk and counterparty risk. Such risks are influenced by information asymmetries which are heightened during a financial crisis (Badinger & Url, 2013). The survival of export industries and in general the economic viability of most countries are dependent on international trade (Blackmon, 2017). This drop in international trade during the crisis was met by various fiscal stimulus packages and monetary easing policies including a G20 policy response to provide a US$ 250 billion stimulus package to support trade finance (Auboin, 2009; Badinger & Url, 2013; Klasen, 2011; Singh, 2010; Wright, 2011).

ECAs responded to the crisis by increasing their capacity to issue ECGs, offering higher percentages of cover and introducing new products including working capital support and special efforts for more vulnerable groups such as SMEs (Asmundson et al., 2011; Klasen, 2011; Morel, 2010). The financial crises highlighted the importance of ECAs, with ECAs stepping in to support trade and in particular replacing private players that curtailed their operations during this riskier period (Hopewell, 2017; Klasen, 2011; Morel, 2010; Singh, 2010; Turguttopbas, 2013). This was particularly prevalent in the short term (payment terms less than 2 years) export credit sector, where the private insurers dramatically cut back their operations, however, ECAs also increased their activity in the medium to long term sector (Blackmon, 2017; van der Veer, 2017). In fact in many circumstances banks would not support medium-long term transactions without the involvement of an ECA and therefore ECGs were critical to ensuring that bank liquidity remained available for medium-long term transactions during the crisis (Morel, 2010). Berne Union member ECAs covering medium-long term transactions grew their business by 25% in 2009, offering US$ 191 billion of new guarantees, at the time the highest value recorded by ECAs (Klasen, 2011; Morel, 2010).

Freund (2016) confirms that the USA's ECA, US Exim, financing in support of trade increased in 2009 in response to the plummeting trade and constrained credit environment. Blackmon (2017), analysing the export activity of the G7 countries, highlights that in 2008/2009 the export volumes of the G7 countries decreased however ECG volumes for medium to long term transactions from these countries increased by 43%. The ECAs stepped in during the financial crisis due to a withdrawal of participation by the private sector. Singh (2010) notes a similar pattern occurring during the 1997 Asian financial crisis with commercial banks and private insurers curtailing credit and trade finance and with ECAs and developmental financial institutions stepping in to try and stabilise the trade finance environment.

At the onset of the Covid-19 global pandemic in 2020, ECAs again stepped in to provide support to the private sector and their respective countries' economies in order to ensure that liquidity, credit lines and trade were maintained and not curtailed as a result of risk fears, thereby providing further evidence of the valuable role played by ECAs in times of crises (Report to the U.S. Congress on Global Export Credit Competition, June 2020). A Financial

Times article dated 26th October 2021 confirmed that ECAs stepped up their support during the pandemic and that their support was required to fill a gap necessary to avoid trade disruptions brought on by the pandemic. According to Ron, President of the Berne Union, Berne Union members during the period of the pandemic provided US$ 2.5 trillion of cover, an increase from 2019 to 2020 of 2.4%. In the same article Ron went on to say “that is the nature of this business – periods of economic uncertainty such as those we find ourselves in require more backstops” (Financial Times, 26 October 2021).

2.1.2.7 *EXPORT CREDIT AGENCIES IN THE 21ST CENTURY*

Since the large losses incurred by ECAs in the 1980s and early 1990s, ECAs in more recent years have made operational profits and have become strong cash generators regularly paying sizeable dividends to their governments (Ascari, 2007; Berry, 2016; Berry, 2014; Wang et al., 2005). The OECD in fact has implemented guidlenes that necessitate a financial sustainability approach by ECAs. Allen (2015), referring to the US Exim, makes note of declining default rates to historic lows whereas the UK ECAs mission, refers to a *“*no net cost to the taxpayer*”*. The profitibaility of ECAs and the valuable role played by ECAs in the various recent crises ensures a favourable future for ECAs.

In more recent years, ECAs have found themselves at a crossroad, given the changing global environment and the increasing role of private sector players. This requires ECAs to reconsider whether they wish to continue in their traditional role as a lender of last resort which would give them a marginal but well protected role or whether they wish to transform themselves into global financial players supporting economic growth and trade more holistically (Allen, 2015; Ascari, 2007). Indeed, different ECAs adopt different philosophies which influence how they operate. Some ECAs continue to operate as a lender of last resort, for example the US Exim who limit the extent of their support only to USA content. Other ECAs adopt a more commercial approach operating in what is referred to as “market window”, supporting transactions regardless of national content, emphasising a national interest philosophy, for example Canada’s EDC (Blackmon, 2017; Hopewell, 2017; Mulligan, 2007; Stephens 1999). According to Singh (2010) changes in the ECA landscape have contributed to ECAs considering more flexible content policies and new products including

direct lending schemes and working capital loan guarantees. He goes on to say that ECA operations and structures will change as global trade and financial systems develop.

2.2 ECA POLICY - A REFLECTION OF GOVERNMENT POLICY AND A WINDOW INTO UNDERSTANDING GOVERNMENT RESPONSES TO INTERNATIONAL TRADE DYNAMICS

The premise of this research is that policies associated with government-backed ECAs can provide insights into how governments address and develop policies based on the economic conditions within which they find themselves. As already highlighted, ECAs are government owned agencies or are operating on behalf of their governments and therefore it is already reasonable to surmise that the policy decisions of ECAs are reflective of government policy priorities and decisions.

The value of this setting for government policy is particularly relevant when trying to understand how governments are responding to international trade dynamics. ECAs have been established to support international trade, specifically exports, and therefore framing my research within the context of ECAs and their policies brings to the forefront government responses to changing international trade dynamics, and particularly the emergence of GVCs.

In sum, ECAs and the ECGs they issue contribute to a country's exports and international trade competitiveness. ECAs were first established approximately 100 years ago, and their numbers have steadily increased since then, with in more recent times emerging market ECAs growing in importance. Despite an increase in the capabilities of the private market, ECAs remain relevant and their relevance tends to come to the forefront during periods of crises. However, the way international trade is currently conducted has evolved considerably since ECAs were first established. Governments are responding to these changing dynamics in a variety of ways. This research was designed to better understand how governments are responding and ECAs provide an excellent window into this government response. The following sections addresses in more detail how GVCs have become the

dominant form in which product is sourced and produced and how ECAs and by association their governments are responding.

2.3 JOB CREATION, HISTORICALLY A KEY PRIORITY FOR EXPORT CREDIT AGENCIES

The dominant view in the original literature was that the main incentive for governments to establish ECAs was the contribution that exports make towards job creation in the exporting country. Drysdale (2014) confirms that ECAs seek to maximise national benefit and that this is usually considered by linking exports to local employment. Bischoff (2014, p. 23) specifically states that "the overall aim of state-backed export credit insurance is to secure employment in the respective home country…". Klasen (2011) believes that the main purpose of ECAs is to cover transactions that support domestic exporters operating in international markets and to safeguard jobs in the domestic economy.

2.4 THE RELEVANCE OF NATIONAL CONTENT

To ensure the exporting country was able to maximise benefits from the involvement of the ECA, ECA eligibility criteria were established such as the amount of national content required in the export contract (Bischoff, 2014; Drysdale, 2014; Singh, 2010; Klasen, 2011). Originally ECAs limited their cover to the content of goods and services produced in their domestic economy, considered a "national content" approach. Bischoff (2014) clarifies the point by saying that traditionally ECAs associated national exports with the national origin of the goods exported and that in the case of the German ECA, amendments to policies regarding the origin of the goods exported were only first considered in 2008. Klasen (2011) is of the view that most ECAs followed a national content approach and provided cover only for goods manufactured in and services provided from the exporting country.

Recent decades have seen a significant shift in the way organisations operate and compete in the global economy, spurred on by the liberalisation and deregulation of international trade and the rapid development of information and communication technologies (Kano, Tsang, & Yeung, 2020). This has resulted in the international fragmentation and disbursement of

operations and the rise of GVCs as the dominant means by which trade is conducted (Kano et al., 2020; Van Assche & Gangnes, 2019). GVCs make it easy for companies to source products globally, which is a game changer for many organisations allowing firms that previously had input cost disadvantages, to improve their competitiveness. This improved competitiveness is clearly beneficial for the exporting company and their likelihood of securing foreign contracts. This is placing pressure on ECAs to support their exporting companies by adjusting their national content rules (Bischoff, 2014; Hunke, 2014).

The original intention of ECAs was to support exports from the exporting country due to their ability to support job creation in the exporting country and that this was supported by a national content approach where eligible transactions required the sourcing of product from within the exporting country. However, much has changed since ECAs were established and since the original rationales for establishing ECAs were identified (Ascari, 2007). In particular the emergence of GVCs has resulted in the fragmentation of production with products being sourced globally. This brings into question the relevance of ECAs given the traditional rationale for their establishment and highlights the challenges facing ECAs and their governments as a result of GVCs (Yalcin, 2014).

2.5 EXPORT CREDIT AGENCY COMPETITION AND ENSURING A LEVEL PLAYING FIELD IN THE INTERNATIONAL TRADE ARENA

Regulatory bodies have realised that ECGs can facilitate the awarding of export contracts resulting in the exporting country benefiting from the success of their exporters. The concern is that governments, through their ECAs, provide unfair support, in effect a subsidy to their exporters, distorting the competitive landscape (Dawar, 2020; Schöne-Alaluf et al., 2011; Wright, 2011;). In the 1980s and early 1990s many ECAs recorded significant losses, which raised fears that the involvement of governments in issuing ECGs were distorting the markets, allowing for ECAs and countries to influence competition within the international trade arena. (Abraham & Dewit, 2000; Ascari, 2007, Moser et al., 2008). The general view was that the ECGs being issued were tantamount to a state subsidy with premium rates being charged at below market rates and were not commensurate of the risk (Abraham & Dewit, 2000).

Subsequent to this period of losses, various regulatory bodies implemented policies and guidelines to try and ensure a level playing field that necessitated that ECAs at least break even over a period of time (Ascari, 2007). These included the WTO's "Agreement on Subsidies and Countervailing Measures" to monitor the use of export subsidies, the "OECD Arrangement on Guidelines for Officially Supported Export Credits" and European Union (EU) regulation limiting ECA activity to non-marketable risks as opposed to marketable risks (Blackmon, 2017; Dawar, 2020; Herger & Lobsiger, 2010; Hopewell, 2021; Jennekens & Klasen, 2022; Moser et al., 2008; Schöne-Alaluf et al., 2011; Wang et al., 2005). Much of this regulation is aimed at ensuring a "level playing field" and addresses issues such as financial sustainability of the ECA, minimum pricing, minimum interest rates, maximum repayment terms, environmental issues and bribery prevention (Ascari, 2007; Jennekens & Klasen, 2022; Klasen, 2011; Mulligan, 2007; Stephens, 1999; Wang et al., 2005). The "level playing field" objective aims to encourage competition amongst exporters based on the quality and price of goods and services to be exported and not based on the most favourable financing terms and conditions that can be offered by governments through their ECAs (Dawar, 2020; Hopewell, 2021; Mulligan, 2007).

The OECD Arrangements, which only applies to OECD members, although non-members often use it as a guideline, limit the amount of local content (content sourced within the importing country) that can be included in an ECG to 30% of the export contract value. This percentage is in the process of being increased (to 50%) allowing for a greater percentage of local content. There is, however, no specification as to the amount of national content (content from the ECA country) that should be included in the determination of the value of the ECG nor on the amount of foreign content (content from a third country – country other than the country of the ECA or importer) that can be included. For example, if an exporter from Canada was exporting to Brazil, in order to comply with the OECD Arrangements, only 30% of the export contract value could be sourced within Brazil to qualify for ECA support. However, 100% of the content could be sourced from outside of Canada and Brazil and would not be in breach of the OECD Arrangements, because the Canadian national content policy is flexible enough to allow this. ECAs are therefore free to determine the amount of national content at their own discretion, which enables ECAs to adapt their policies, if they so wish, in line with changing production patterns (Dawar, 2020).

Therefore, ECAs and their governments are free to determine their own approach to national and foreign content (Dawar, 2020; Mulligan, 2007; Xcred Secretariat, Export Credits Division, Trade and Agriculture Directorate, 2018; Yalcin et al., 2014). This non-prescription of national and foreign content, in principle, provides ECAs and their governments with the flexibility to adopt different strategies towards national benefit (Dawar, 2020; Mulligan, 2007). In other words, ECAs are entitled to determine their own eligibility policies with regards to the percentage of national content that is required in an exporting contract that they are prepared to support. These policies can range from requiring 100% of national content to no national content requirement at all and provide a window into the policy decisions governments make based on their perceptions of what will maximise the wellbeing of their countries.

An ECAs policy regarding national content is very pertinent because the percentage of national content required influences whether exporters that are seeking their ECA's support to secure a contract are able to tap into GVCs and if so, to what extent. This unregulated scope of ECA activity opens up a fresh angle for competition amongst the ECAs.

The growing importance of non-OECD ECAs who fall outside of the OECD Arrangements, raises concerns regarding the relevance of the OECD Arrangements and whether there is in fact a level playing field, although many non-OECD ECAs purport to provide support in line with the general guidelines of the OECD Arrangements (Dawar, 2020; Mulligan, 2007). Dawar (2020) believes that greater co-operation amongst ECAs and their governments is required within international bodies such as the WTO, OECD and the International Working Group on Export Credit Support. These bodies need to more appropriately define the activities of ECAs and the parameters within which they may operate in order to ensure fair competition and a level playing field. Jennekens and Klasen (2022) concur that reform of the regulatory framework for officially supported exports is required and propose that the WTO is the appropriate body to take on this responsibility. Recent attempts to broaden the scope of the OECD Arrangements to include non-OECD members have failed. In fact, the International Working Group, which was tasked with this objective, have currently suspended negotiations (Jennekens & Klasen, 2022). For now, the lack of regulation regarding national content policy across the full spectrum of ECAs, including OECD ECAs, ensures that this facet of ECA activity can be utilised as a policy instrument by governments

to respond to changing production patterns and as a means of influencing country competitiveness.

2.6 GLOBAL VALUE CHAINS AS A CHALLENGE TO THE TRADITONAL RATIONALE OF EXPORT CREDIT AGENCIES

ECAs are a policy instrument that has long been used by governments to facilitate international trade. However, international trade has been transformed by GVCs, requiring a review of GVCs before further exploring government responses to GVCs.

2.6.1 GLOBAL VALUE CHAINS

Value chains are the sequence of activities required to bring a product from conception to end use and beyond (De Backer & Miroudot, 2014; Gereffi & Fernandez-Stark, 2016; Kaplinsky & Morris, 2001). The activities may include R&D, design, inputs, production, marketing, distribution, sales and support to the end customer, and can include tangible and intangible activities and includes goods and services (De Backer & Miroudot, 2014; Gereffi & Fernandez-Stark, 2016). Globalisation has resulted in these activities taking place across multiple countries, hence the reference to GVCs. The notion of internationally fragmented production is also sometimes referred to as global production networks (GPNs) or offshoring (Baldwin & Venables, 2013; De Backer & Miroudot, 2014; Ernst & Kim, 2002; Gereffi & Fernandez-Stark, 2016; Schmeisser, 2013).

The growth in GVCs is interlinked with the expansion of international trade. GVCs have caused the production process to become fragmented with different elements of the final product being produced in different countries. This results in a sizeable portion of a country's export being made up of the import of various intermediate goods. There is therefore a shift from localised production within a country to production systems that are internationally dispersed (Amador & Cabral, 2014; Baldwin, 2011; Beltramello, De Backer & Miroudot, 2014; De Backer, & Moussiegt, 2012; Gereffi, 2015; Gereffi, 2014; Gunnella et al., 2017; Pietrobelli, Rabellotti, & Van Assche, 2021 ; Timmer, Erumban, Los, Stehrer, & Vries, 2014; Van Assche & Gangnes, 2019).

Authors in general agree that improvements in transportation and telecommunications infrastructure, a significant decrease in trade costs, the reduction in trade barriers, technological advancement and the desire of firms to seek the most competitive inputs necessary to improve competitiveness have facilitated the growth in GVCs (De Backer & Miroudot, 2014; Gereffi & Fernandez-Stark, 2016; Gunnella, Fidora, & Schmitz, 2017; Manova & Yu, 2016; Van Assche & Gangnes, 2019). Improved data gathering techniques associated with input-output tables allow for a more granular assessment of the domestic and foreign content in exports. This analysis has revealed a larger than previously estimated amount of foreign content in exports, including in China (Gereffi 2014; Gunnella et al., 2017; Koopman, Wang, & Wei, 2012).

De Backer and Miroudot (2014) indicate that more than half the world's import of manufactured goods are intermediate goods and more than 70% of the world's import of services is intermediate services. Gunnella et al. (2017) confirm the substantial increase in trade of intermediate goods and services suggesting that around 60% of world trade is in intermediate goods. The World Investment Report 2013 concurs that about 60% of global trade comprises of trade in intermediate goods and services (UNCTAD, 2013b). This represents a shift from "trade-in-goods" to "trade-in-tasks", "trade-in-activities", "trade-in-value added" or "trade-in-capabilities", resulting in the majority of today's trade being in intermediate goods or services and not final goods or services (Cano-kollmann, Hannigan & Mudambi, 2018; Gereffi, 2014; Mayer, Phillips, & Posthuma, 2017; Timmer, Dietzenbacher, Los, Stehrer, & J. de Vries, 2015; Van Assche & Gangnes, 2019; Yeung & Coe, 2015).

GVCs make it extremely difficult to determine the exact origin of goods and services with often the final export product being a combination of foreign value added and domestic value added. This results in the final value of the export being much greater than the value of the domestic contribution (Amador & Cabral, 2014; Baldwin, 2011; Johnson, 2014; Koopman, Wang, & Wei, 2012). Indeed, James (2011) believes that the concept of domestic content in export promotion programmes is pointless given the global nature of supply chains. Exports are often made up of intermediate goods sourced from abroad making it difficult to determine the real contribution that the export has made to the exporting economy, whether in terms of income or job creation (Aaditya, Wang, & Wei, 2013).

2.6.2 THE POSITIVE EFFECTS OF GLOBAL VALUE CHAINS

A country's level of productivity is key in determining its competitiveness. Costinot and Rodríguez-Clare (2013), studying the import of intermediate goods, confirm that trade liberalisation and intermediate goods imports has a positive impact on reduced costs and stimulated domestic production, which ensures that the country's gains from trade in terms of welfare and real income is high. This is due to the fact that imported intermediate goods that are then used in domestic production have an increased effect on wealth gains resulting from the positive effect of lower costs while still having value-added domestic production. The effect is that real income increases by more as a result of this international trade. Gunnella et al. (2017) have similar views, indicating that the net effect of imported inputs is positively related to external competitiveness and that there are positive wealth implications for economies participating in GVCs. If an economy moves from importing intermediate goods to no importing of intermediate goods, then total exports for that economy declines (Kasahara & Lapham, 2013). Kasahara and Lapham (2013) conclude that policies that prohibit the import of foreign materials have a negative impact on the export of final goods and that import protection can in fact have a destructive effect on a country's exports.

Exporting firms are generally considered more productive and efficient (Bernard, Redding, & Schott, 2007; Manova, 2013). De Backer and Miroudot (2014) are of the view that the international fragmentation of production increases firm efficiency and competitiveness. Research conducted by Kasahara and Lapham (2013) confirms previous research that the use of foreign intermediate goods is associated with higher plant productivity. Firms that import or export have higher productivity, partly because firms with higher productivity tend to import or export but also because importing increases productivity. There are complementarities for import and export fixed and sunk costs which incentivise firms to simultaneously import and export (Kasahara & Lapham, 2013). Koopman, Wang and Wei (2012) agree that segmenting production processes across countries facilitates the reduction of production costs and allows for a more efficient use of resources.

Gereffi and Fernandez-Stark (2016) are of the view that the evolution of GVCs has significant implications for global trade, production and employment and how countries integrate into the global economy. A country's ability to integrate into GVCs, especially

countries in emerging markets, is key for economic development (Gereffi & Fernandez-Stark, 2016). Cano-kollmann et al. (2018) concur with this view, suggesting that the rise of emerging markets and their importance in the global economy is largely as a result of their integration into GVCs. The integration of Asian firms into GVCs has been a key stimulant of industrial development in Asia (Ernst, 2006). In fact there seems to be a positive correlation between participation in GVCs and GDP per capita growth rates (UNCTAD, 2013a)

2.6.3 VALUE CREATION WITHIN GLOBAL VALUE CHAINS

GVCs are increasingly being viewed from the perspective of value creation. Value creation is shifting from the creation of tangible to intangible assets. Intangible assets, often called intellectual assets, can be considered from the perspective of creativity and knowledge and include items such as R&D, patents, copyrights, brands, customer service, software and training (Cano-Kollmann et al., 2018; Mudambi, 2008; Timmer et al., 2014). Value chain activities comprise upstream activities (inputs), downstream activities (outputs) and middle activities. Upstream activities include R&D, patents, software, and training; while downstream activities include advertising, marketing, brand management, trademarks, and after-sales services. In contrast the “middle” includes manufacturing and standardised services; in effect repetitive processes, often the production process itself, that can be developed on a mass scale (Cano-Kollmann et al., 2018; Mudambi, 2008).

Developed countries typically focus on the higher value activities, both upstream and downstream, such as R&D, design, services and marketing with developing countries concentrating on the middle activities like purchasing, production and distribution (Gereffi & Fernandez-Stark, 2016; World Bank, 2017). Spence suggests that a large component of manufacturing value chains is made up of services and that services make up a significant portion of the value-added component (World Bank, 2017). Furthermore the share of services in exports is higher for developed countries (World Bank, 2017). Timmer et al. (2014) agrees that the number of services jobs related to manufacturing is increasing. UNCTAD (2013b) concur, suggesting that almost half of value-added in exports is contributed to the services sector, considering that most manufacturing exports require services for their production.

Mudambi (2008) confirms that GVCs are characterised by high value-adding activities being performed in advanced economies and lower value-adding activities taking place in emerging markets, although emerging market firms are trying to catch up by developing competencies in higher value-adding activities. Increasingly, large emerging economies are moving up the value chain to include pre and post production services (Gereffi, 2014). Interest in participating in the lower value-adding activities is diminishing, due to increased capital investment which reduces the required levels of employment and the inclination of firms to relocate factories to the next low cost producing area as soon as employment costs start to rise (Ernst, 2006).

Considering GVCs from the perspective of value creation encourages firms to consider which activities they need to control and where such activities should be located (Mudambi, 2008). Increasingly firms are seeking to obtain a competitive advantage by positioning activities in locations where cost benefits can be obtained, be those activities under their direct control or outsourced activities to third parties (Mudambi, 2008). Firms seeking to maximise value creation from knowledge need to consider two key aspects, namely control and location (Mudambi, 2008). In other words, firms need to decide which activities they need to control and where activities should be located.

Firms from developed countries often outsource the low value activities to lower cost emerging markets, while retaining the value creation activities in their home countries (Baldwin, Ito, & Sato, 2014; Neilson, Pritchard, & Yeung, 2014). Timmer et al. (2014), studying input-output tables, confirm the view that mature economies relocate the unskilled labour-intensive activities to lower wage countries, while maintaining the strategic and higher value-adding activities at home where skilled labour and intangible capital are more available.

Analysing value-added activities has given rise to the “smile curve” or “smiling curve” which suggests that the largest value-added activities are the pre and post manufacturing activities i.e., the activities at the input end and at the output end of the value chain. Standardised manufacturing processes are in the middle of the curve and reflect low value-adding activities (Baldwin et al., 2014; Gereffi & Fernandez-Stark, 2016; Mudambi, 2008). Burger, Jindra, Marek and Rojec (2018) studying the subsidiaries of MNEs in Central and Eastern

Europe confirm that firms that shift their activities to the pre and post production stages do indeed capture greater value. Baldwin et al. (2014) studying a group of Asian firms also confirm the existence of the smile curve.

Advanced economies and their firms increasingly are looking to capture the value of the input and output activities, while developing countries that have integrated themselves into GVCs and are positioned in the middle, low value-adding activities often see this as a means to upgrade later to the more value-adding activities (Cano-kollmann et al., 2018; Mudambi, 2008). Governments and their firms are not always aligned in their strategy. High value-adding activities such as R&D and innovation are considered critical to economic growth, competitiveness and welfare, but this does not mean that a firm will always locate these activities in the home country (Ernst, 2006). Innovation and R&D are increasingly also outsourced, often offshore to Asia. This phenomenon is referred to by Ernst (2006) as Global Innovation Networks (GIN), although for now the more advanced regions of North America, Europe and Japan remain dominant in terms of R&D, innovation and technology leadership (Ernst, 2006). However, Ernst (2006) suggests that these advanced economies need to implement active strategies in order to retain market dominance in the high value activities in order to ensure that the “hollowing out” that has occurred in basic manufacturing is not extended to the more value-added activities of R&D.

A 9th April 2020 article appearing on the website of the Swedish ECA, EKN, comments on the smiling curve, value-adding activities and GVCs. The article highlights the growing relevance of capturing the value-adding activities like R&D and marketing and design, noting that Swedish companies are increasingly outsourcing manufacturing to other countries while retaining the value-adding activities of the production process within Sweden. The article emphasises that transactions may be eligible for Swedish ECA support if certain value-adding activities are conducted within Sweden while other production activities take place abroad. Sweden’s ECA acknowledges the relevance of GVCs and the participation within these GVCs by Swedish exporters that may require ECA support, providing further confirmation of the relevance of exploring government policy towards GVCs through the lens of the national content policies of ECAs.

2.6.4 GLOBAL VALUE CHAINS AND THE CHALLENGE FOR EMERGING MARKETS

While there are clear positives associated with GVCs, emerging markets face challenges firstly to integrate themselves within GVCs and thereafter to upgrade their capabilities to benefit from higher value-adding activities (Kaplinsky & Morris, 2008). The general shift in activities from tangible assets to intangible assets creates a new set of barriers to entry which add challenges to emerging markets wishing to upgrade (Kaplinsky & Morris, 2001). In order to gain value from participation within GVCs, upgrading is important for emerging markets. Increasingly production processes have become standardised and success generally driven by meeting minimum quality standards at a low cost, squeezing margins in the production stage. This often results in automation and less manual work, negating the potential upside effects that integration within GVCs may have on job creation (Pahl, Timmer, Gouma, & Woltjer, 2019).

Kaplinsky and Morris (2008) describe four types of "rents" that can act as barriers of entry to accessing value chains, namely:

- Monopoly rents – when actors are able to utilise their political power to limit access.
- Resource rents – access to resources which are unique or extracted at a lower cost.
- Endogenous rents – generated by individual firms such as new technologies, skills, design and marketing etc.
- Exogenous rents – outside of the firm and include legal frameworks, effective policy and government, infrastructure, property rights etc.

Emerging markets are generally faced with greater challenges to overcome these various barriers. Gereffi and Fernandez-Stark (2016) acknowledge that a country's successful involvement within GVCs can be influenced by economic conditions and the availability of key inputs such as labour costs, available infrastructure, and access to resources such as finance, labour and skills.

The consequences of barriers of entry are that not all have benefitted from GVCs. Even within developed countries, that overall have benefitted from GVCs, there very often is a disproportionate benefit towards skilled workers at the expense of unskilled workers (Kaplinsky & Morris, 2001). Certainly, many of the poorer countries have failed to benefit from GVCs. The world's least developed countries generally have minimal participation

within world trade and lag behind in terms of integration within GVCs (Antimiani & Cernat, 2021). Many of these poorer developing countries struggle to gain access to GVCs beyond natural resource exports (UNCTAD, 2013b). Gereffi and Sturgeon (2013) acknowledge that the large emerging markets have more options to upgrade than the smaller countries.

For many emerging markets, especially the lower income countries, the emersion into GVCs and the ability to capture gains within GVCs is essential for economic development (Gereffi & Fernandez-Stark, 2016). In fact the World Investment Report states that there is a positive correlation between participation within GVCs and GDP per capita growth (UNCTAD, 2013b). Kaplinsky and Morris (2008) encourage governments and firms within developing countries to overcome their constraints and expand their capabilities, by acting collaboratively and strategically in order to access value chains and to enhance their country and firm competitiveness within these value chains. Antimiani and Cernat (2021) go further, calling for multilateral initiatives to help provide impetus for enhanced involvement of the least developed countries within international trade and GVCs, including value-added activities.

2.6.5 GOVERNMENT POLICY AND GLOBAL VALUE CHAINS

The development and sophistication of GVCs has largely evolved as a consequence of the actions of companies. Typically, decisions regarding offshoring and outsourcing are made by the managers that run these companies. Large multinational firms, often referred to as global lead firms have been at the forefront of driving the development of GVCs and have been influential as to where goods are produced and how they are procured. However, these decisions are not made in isolation and are made within the context of the policies and programmes of countries and multilateral institutions. In that way, the state has increasingly become an important actor within the development of GVCs and GPNs (De Marchi & Alford, 2021; Gereffi, 2015; Gereffi & Sturgeon, 2013; Horner, 2017). Firms, in so much as they have flexibility in locational choices, will seek to take advantage of regulatory differences; while states will seek to minimise the potential for this regulatory arbitrage (Horner, 2017). The salience of GVCs is impacting on the activities of public institutions responsible for determining trade policy. GVCs are impacting on how companies operate and government

policies are changing in response (Van Assche & Gangnes, 2019). Countries need to understand the positive and negatives of GVC participation and weigh up the costs and benefits of implementing policies that facilitate the integration of their companies within GVCs. In this process some countries may decide whether to actively promote GVC participation, while other countries may not. Although, some countries may have limited choice. For many smaller developing nations it is less about whether to participate but rather how to participate (UNCTAD, 2013b).

GVC research has begun exploring the role of the state within GVCs and there is an increasing reference to the "state" in the GVC literature. The state's role within GVCs can vary quite considerably. The state can both shape GVCs and be shaped by GVCs. On the one hand, the state can act as a facilitator, introducing business friendly policies that support the initiatives of organisations within GVCs while on the other hand, the state can be a regulator trying to restrict and shape the activities of organisations. Other roles of the state recognised within the GVC literature include the state acting as a producer and as a buyer (Alford & Phillips, 2018; De Marchi & Alford, 2021; Horner, 2017; Mayer & Phillips, 2017). Mayer & Phillips (2017) recognise that GVCs have become the dominant global economic structure for production and trade which means that all states must actively engage with GVCs.

Gereffi (2015) identifies a number of considerations required when governments consider policy in relation to GVCs, including that GVCs tend to focus on suppliers and not lead firms and that GVCs revolve around global sourcing and therefore government policy needs to consider linkages within GVCs as opposed to establishing vertically integrated domestic industries. Ernst and Kim (2002) are of the view that suppliers can exploit the opportunities of GPNs but only if appropriate policies and institutions are in place. Similarly, a World Bank (2017) report on the measuring and analysing of the impact of GVCs on economic development emphasise the importance of policy makers understanding GVCs when developing trade policy, especially as it relates to employment, productivity and income growth.

A number of the large and more advanced emerging markets have started using industrial policy to influence the competitiveness of their companies. The implementation of industrial

policy by governments as well as the monitoring of industrial policy by institutions like the WTO is complicated, given the global fragmentation of industries within GVCs. Historically organisations and countries stood alone and competed at arm's length. However, in today's trading environment industries have become interconnected globally through complex networks driven by GVCs (Gereffi & Sturgeon, 2013). A key priority of industrial policy within the context of GVCs is to facilitate the upgrading of activities to the more value-added activities. However, governments often do not have the ability to fully control this, given that the outsourcing of activities is generally driven by the choices made by global lead firms (Gereffi & Sturgeon, 2013).

The World Investment Report (UNCTAD, 2013b) proposes a policy framework for GVCs and development. This framework identifies five key elements that policy makers can consider when wishing to enhance a country's involvement within GVCs. These include:

- Incorporating GVCs within industrial policy through the setting of policy objectives;
- Creating and maintaining a conducive environment for trade and investment that enables participation within GVCs, such us putting in place infrastructure that facilitates GVC participation;
- Build domestic capabilities that support skills and enterprise development;
- Develop frameworks that address regulation and standards in order to minimise the risks of GVC participation;
- Ensure a coherent and synergised approach across all trade and investment policies.

The starting point to addressing this is to understand exactly where the country stands in relation to GVCs.

This review has highlighted the positive effects of GVCs and there remains a strong view in the literature that this remains the case. Van Assche and Gangnes (2019) confirm the view that restrictive trade policies reduce welfare at the aggregate level and that the overall gains from trade offset losses at the national level. Despite this, policy responses to GVCs remain varied with not all countries embracing the general principles of GVCs, preferring to resist it or at least not actively facilitating their development. This varying response and lack of clarity as to how and why governments are reacting to GVCs forms a key part of this research.

2.6.6 MEASURING TRADE, GLOBAL VALUE CHAINS AND VALUE-ADDED

GVCs and fragmented production impact country competitiveness and has the potential for an unequal distribution of income. Naturally, this is of significant interest to policy makers and developmental institutions and therefore appropriate measure are required to accurately understand GVCs (Timmer, Los, Stehrer, & De Vries, 2013). However; measuring trade, GVCs and value-added is not without its challenges. With production being globally fragmented and exports being made up of a variety of intermediate goods, the risk of double accounting is high (UNCTAD, 2013b). The historical measures that focused on gross estimates often overstated the competitiveness of countries that relied on imported intermediaries (Timmer et al., 2013). These factors have contributed to improved techniques to measure international trade.

The development of input-output tables seeks to address some of the shortcoming in the data. Input-output tables collate data that explicitly reflects the origins and destinations of imports and exports. These tables focus on the value-added in production by country rather than the gross output value of a country's exports (Sturgeon, 2013; Timmer et al., 2015; Timmer, Los, Stehrer, & De Vries, 2013). Analysing GVCs through input-output tables has significantly facilitated the understanding of GVCs and have been enlightening in terms of understanding where value is created. However gaps remain in the measurements especially when it comes to understanding services within GVCs (Sturgeon, 2013; Timmer et al., 2013).

Timmer, Miroudot, and De Vries (2019), while acknowledging the important strides made in understanding international trade thanks to data derived from input-output tables, describe the data as second generation. They are of the view that a new third generation of trade statistics are required that considers not only the value-added but also the characteristics of the activity. They propose tracking functional specialisation in trade by capturing the value-added within the tasks of fabrication, R&D, marketing and management. This has been prompted by the growing 'servicification of manufacturing' (Timmer et al., 2019). The concern is that the incorrect data of value-added and services could translate into incorrect policies. Timmer et al. (2019), in their functional specialisation analysis identified a positive correlation between GDP per capita and R&D and a negative correlation between GDP per

capita and fabrication. Despite some shortcomings, the measurements and data available today significantly enhances our understanding of GVCs and international trade and in particular our understanding of country competitiveness.

2.6.7 GLOBAL VALUE CHAINS AND THE COVID-19 PANDEMIC

The Covid-19 pandemic has triggered a fresh debate regarding the future of GVCs, including how governments should respond. The pandemic created supply chain disruptions stemming from an interruption in trade and restrictions on the movement of people and brought to the forefront the vulnerability of firms integrated within complex GVCs. These disruptions highlighted risks associated with relying on inputs from foreign countries. This has resulted in calls to make production more resilient by diversifying production supply and shortening supply chains, either through greater domestic or at least more regional production, a value chain shift from global towards domestic and regional (Gölgeci, Yildiz, & Andersson, 2020; Miroudot, 2020; Zhan, Bolwijn, Santos-Paulino, & Tüselmann, 2020).

ECAs also responded quickly to the pandemic by implementing an array of support measures, with a strong focus on domestic support despite the intended export focus of ECAs, re-enforcing governments strong desire to ensure stability and resilience within their domestic economies (Berne Union Yearbook 2021).

The response to the pandemic and establishing resilience may be considered by both firms and policy makers. Well-run, risk management focused organisations will look to implement more resilient processes that can better withstand shocks like the pandemic while still trying to balance the positive efficiency brought on by GVCs. The current thinking is that their needs to be a balance between resilience and efficiency (Enderwick & Buckley, 2020; Gölgeci et al., 2020). Policy makers, no doubt, are also feeling the need to show a response to GVCs and the pandemic (Miroudot, 2020). A number of countries have introduced reshoring policies in order to bring back manufacturing to their countries, especially healthcare related manufacturing (Elia, Fratocchi, Barbieri, Boffelli, & Kalchschmidt, 2021). However, concerns have been raised as to whether government intervention is truly about supply chain resilience or a guise for protectionism (Enderwick & Buckley, 2020; Gereffi,

2020). While it is generally accepted that some reorganisation of GVCs is required, a complete de-globalisation is not viable (Gereffi, 2020). Too drastic a reorganisation of GVCs will result in welfare losses and may have negative consequences for emerging markets, who have utilised GVCs to develop their economies by developing manufacturing capabilities and also upskilling themselves into more value-added activities. The general view is that a more regional adjustment, near shoring, would be a better outcome reaching a balance between national and international interests (Elia, Fratocchi, Barbieri, Boffelli, & Kalchschmidt, 2021; Enderwick & Buckley, 2020; Gereffi, 2020; Gölgeci et al., 2020; Miroudot, 2020).

It is also anticipated that international trade will rebound quickly post the pandemic and ECAs are already noting indications of recovery. The short-term committee of the Berne Union notes that the upturn in merchandise trade experienced in the first half of 2021 moved beyond the pre-pandemic peak. The medium-term committee of the Berne Union did not note the same level of recovery, but they did recognise that the first signs of growth were being experienced (Berne Union Yearbook, 2021). These early signs would indicate that international trade will indeed resume to previous levels and beyond. In light of this, Gereffi (2020) proposes that policy actions in the midst of the pandemic should be distinguished from sustainable policies post the pandemic.

2.6.8 GOVERNMENTS' RESPOND TO GLOBAL VALUE CHAINS THROUGH THEIR EXPORT CREDIT AGENCIES

The public-sector nature of ECAs and their historical stated purpose to support exports and job creation in their domestic market is a key consideration of ECAs when establishing eligibility criteria for the transactions that can attract their support. Traditionally, ECAs have tried to ensure a high value of national content and many still do. It is clear that with this approach the key benefit that the ECA country wishes to attract is job creation. However, GVCs and internationalisation make it difficult for exporters to always ensure high national content in their export contracts (Bischoff, 2014). Exporters, to improve cost competitiveness, look to source product from lower cost producers, while internationalisation encourages exporters to set up operations in the target country and then to source locally

within the importing country. Klasen (2011) recognises that ECAs are facing new challenges including determining appropriate levels of eligibility. He goes on to suggest that increased multi-sourcing of production and the declining manufacturing of capital goods in many industrialised countries requires ECAs to reconsider their policies.

2.6.8.1 *EXPORT CREDIT AGENCIES ADOPT A MORE FLEXIBLE APPROACH TO NATIONAL CONTENT*

Various ECAs in recent times have departed from the traditional ECA approach of necessitating high national content in export contracts to instead allowing for more flexibility in terms of where product is produced and sourced, more of a “national interest” approach (Dawar, 2020; Klasen, 2011). Schipfer (2017) views it as shifting from a “made in” concept to a “made by” concept and finally to a “made for” concept. Indeed, Antras (World Bank, 2017) suggests that “made in” labels are archaic and that they should be replaced by a “made in the world” label. De Backer and Miroudot (2014) also refer to the “made in the world” label and believe that understanding GVCs is important to close the gap between government policy and the reality of business. A key driver of this change is the increased multi-sourcing of production and the decline in manufacturing of capital goods in industrialised countries.

Van Assche and Gangnes (2019) in their article on GVCs and the fragmentation of trade policy coalitions make use of a case study involving the Canadian ECA, namely Export Development Canada (EDC), and in the introductory paragraph of the case study, they bring to our attention that GVC production is affecting the practices of public institutions tasked with establishing trade policy. Van Assche and Gangnes (2019) note that EDC has adjusted its determination of Canadian benefit in order to take into account the growing role of GVCs. The Canadian ECA’s eligibility to support a transaction is more about determining the economic benefit for Canada as opposed to the actual content of Canadian exports.

Exporters from countries with ECAs that have adopted flexible content rules are considered to have a competitive advantage over exporters whose ECA is less flexible (Bischoff, 2014). Indeed, US Exim believes that these changes are having a negative effect on USA exporters and believes that the changes being made by their rival ECAs around the world, especially

China, are aggressive and are being implemented with the objective of fulfilling the geopolitical aspirations of the country (Export - Import Bank of the United States, 2020).

It is clear that certain countries are supporting their exporters by expanding their product offering with more flexible content requirements (Freund, 2016). The degree to which ECAs are amending their content requirements varies quite considerably. Common themes identified in the literature that influence ECA policy include factors such as economic size, diversification of the economy, philosophy and culture (Bischoff, 2014; Drysdale, 2014; Hunke, 2014). Schipfer (2017) believes that criteria that should be considered when amending content rules include the size of the economy and the location of the country. Small economies tend to be less vertically integrated, making it difficult for companies to source all their inputs from within the country, while land locked countries have additional cost disadvantages compared to maritime economies like the USA and Australia and therefore cannot afford to be too prescriptive on content. GVCs enable such countries to overcome their disadvantages by facilitating their competitiveness in the international trade environment.

Germany and USA are considered ECAs that have strict content rules regarding the amount of foreign content emphasising the national origin of goods. James (2011) in his anti US Exim article notes that supporters of US Exim have proposed a lowering of the domestic content requirements of the US Exim. While the German ECA is viewed as an ECA with strict content requirements, it has made some amendments and Bischoff (2014) believes that this is in response to changing global production patterns. In contrast, ECAs such as Belgium, Netherlands, Scandinavian countries, Switzerland and Canada are considered very flexible and apply the “national interest” approach (Drysdale, 2014; Hunke, 2014; Schipfer, 2017). While exporters would clearly benefit from ECAs that have relaxed content requirements, it remains unclear how different content rules impact the economy of the exporter (Hunke, 2014) and what factors should be considered when determining the appropriate level of national content.

GVCs and the global fragmentation of production highlight the type of content eligibility decisions that ECAs need to consider. Hunke (2014) in discussing the German ECA states that *“*of particular concern is the question of how to account for increasingly global value

chains. Ongoing internationalisation, the increasing necessity of having a local presence, growing international competition and the pressure on exporters to cut costs, and growing demand by foreign buyers to source locally (which is even required by national law in certain countries) all put pressure on export credit agencies to respond to these changes*"* (p. 20).

Traditionally, ECAs would be comfortable including the domestically produced content whether produced by the exporting firm itself or outsourced to another domestic firm. However, as firms integrate themselves into GVCs, ECAs must consider whether to accept foreign content, be that content produced by subsidiaries located abroad or uncontrolled foreign suppliers - and if they are prepared to accept this content, to what extent. Moreover, the final export product is increasingly likely to comprise a combination of locally produced and foreign produced content, and therefore ECAs need to determine what percentage of foreign content they are prepared to accept. Bischoff (2014) acknowledges the impact that GVCs are having on ECAs by commenting that "in recent decades almost all ECAs in OECD countries have substantially enlarged foreign content acceptance, including the German ECA Hermes. With ongoing and deepening globalisation in production and trade, it has become more difficult to quantify the true national value added in an export project" (p. 25).

Given that the use of imported intermediate inputs improves productivity and facilitates exports and that a country's integration into GVCs supports economic development, then it would not be surprising to see ECAs reducing their national content requirements. A lower national content requirement will allow for the value of imported intermediate goods to be included in the determination of the eligibility of the ECA's cover, thereby supporting the integration of the country's economy into GVCs. ECAs that allow for foreign inputs by reducing national content requirements, ensure that their exporters remain internationally competitive, increasing their ability to secure foreign contracts. This then should contribute to the wealth gains of the exporting country and should in theory contribute positively to international trade. However, despite the apparent benefits of lower national content the actual policy responses of governments seem to remain inconsistent.

The changing global environment and the increasing role of private sector players place ECAs at a crossroad. ECAs need to reconsider whether they wish to continue in their traditional role as a lender of last resort which would give them a marginal but well protected

role or whether they wish to transform themselves into global financial players supporting economic growth and trade more holistically (Allen, 2015; Ascari, 2007). Indeed, different ECAs adopt different philosophies which influence how they operate. Some ECAs continue to operate as a lender of last resort, for example the US Exim who limit the extent of their support only to USA content. Other ECAs adopt a more commercial approach operating in what is referred to as “market window”, supporting transactions regardless of national content, emphasising a national interest philosophy, for example Canada’s EDC (Blackmon, 2017; Hopewell, 2017; Mulligan, 2007; Stephens 1999).

A new phenomena appearing in the literature is that certain ECAs, in accepting the existence of GVCs, view GVCs as an opportunity to try and facilitate access by its companies into global supply chains. Van Assche and Gangnes (2019) use EDC’s support of a loan to Volkswagen in Germany as an example of the recognition and relevance that ECAs are now placing on GVCs and the role that they can play in facilitating GVCs. The loan was provided unrelated to a specific Canadian export and without Volkswagen having any manufacturing presence in Canada, but merely as an incentive to encourage Volkswagen to do business with Canadian automobile part manufacturers. The purpose of such loans from the ECA is to try and facilitate the integration of Canadian companies into GVCs (Van Assche & Gangnes, 2019).

Dawar (2020) highlights a similar approach being adopted by the UK government. The UK ECA can consider increasing the level of their support based on greater future benefits for the UK such as increased production within the UK, increased use of UK supply chains or increased UK job creation. In other words, the UK ECA can provide export finance support to a non-UK entity and unrelated to any UK exports, if they believe that there can be a future benefit for the UK economy. A motivator for the greater flexibility being shown by the UK government is the anticipation of increased involvement of UK companies within supply chains. Dawar (2020) references another example of an ECA showing large flexibility, with the Italian ECA being prepared to fund an entire export from Boeing, a USA company, despite the Italian content only being 14%.

Mayer, Phillips, and Posthuma (2017) note the importance of private sector power and the ability of lead firms to determine who produces what, where and at what price, thereby

influencing global production patterns. Pahl, Timmer, Gouma, and Woltjer (2019) hold a similar view. The above examples would seem to suggest that various governments through the actions of their ECAs recognise the power of these global organisations and are prepared to adapt their policies in order to woo these organisation. Mayer, Phillips, and Posthuma (2017) refer to the interplay between economic and political power that contributes to the shaping of the global political economy. The examples of Canada, UK and Italy highlight the willingness of certain ECAs to negate the relevance of national content preferring to support key international players with the intention of ensuring their countries' participation in GVCs, what ECAs refer to as a national interest approach.

According to Singh (2010), changes in the ECA landscape have contributed to ECAs considering more flexible content policies and new products including direct lending schemes and working capital loan guarantees. He goes on to say that ECA operations and structures will change as global trade and financial systems develop.

Various authors agree that over time the original intentions and objectives of governments in setting up ECAs have become blurred and that it is becoming increasingly complex and difficult to define the role of ECAs, especially in light of the rising capabilities of the private insurance market (Allen, 2015; Stephens, 1999).

It is generally acknowledged that many ECAs are recognising the impact of GVCs and in response are revising their national content requirements. Schipfer, the Managing Director of the Austrian ECA, in the Berne Union's August 2017 newsletter acknowledges that "as globalisation progresses and international production sharing is deepening the share of foreign inputs in exports increases all over the world" (p. 4). He goes on to confirm that this had a direct bearing on Austria's decision to revise its national content rules stating that *"*as a consequence we changed our policy in mid-2016. Under the new rules a lower minimum national content may be required: to benefit from OeKB's unrestricted cover, a project's Austrian value added only needs to exceed 25% of the total export contract value, instead of 50% previously" (p. 4).

However, not all ECAs have responded to GVCs by significantly revising their national content policies, although, Hunke (2014) believes that the more conservative ECAs such as

USA and Germany tend to be the exception. Alternatively, if ECAs have responded, not all ECAs have responded to the same extent with the national content policy of ECAs now being quite varied.

This lack of clarity regarding how ECAs and by association their governments are responding to GVCs in terms of their national content policies has influenced the basis of my primary research question of:

- How have governments changed the national content policies of ECAs in response to GVCs?

By responding to this research question, I wished to develop an understanding of how the national content policies of ECAs have changed in response to GVCs and the extent of these responses.

It would seem that the primary reason for ECAs not fully embracing GVCs is the concern by governments of the impact that GVCs are having on job creation. The extant literature confirms that GVCs and the import of intermediate goods have become the dominant form of international trade and that the import of intermediate goods and a country's integration into GVCs contribute positively to firms and countries. Therefore, it is reasonable for ECAs to respond to GVCs by reviewing their national content policies. However, it is also plausible that reduced national content policies may further encourage domestic firms to look abroad for intermediate goods thereby having a negative impact on domestic jobs.

If GVCs are indeed influencing the national content policies of ECAs then it is reasonable to assume that there should be some relationship between the national content policies of ECAs and the extent or nature of GVCs within those countries.

This forms the basis of my sub research questions:

- To what extent is the national content policy response of ECAs related to the degree of a country's integration within GVCs?

- To what extent is the national content policy response of ECAs related to a country's position within the value-adding activities within GVCs?
- What additional GVC related dynamics, if any, are at play that are influencing the ECA national content response?

This research wishes to determine whether the national content response from ECAs is influenced by the degree of a country's integration within GVCs and the country's positioning within the value-adding activities of GVCs. The literature review suggests that ECAs from developed countries positioned in the high value activities should be comfortable adjusting their policies to allow their firms to outsource the low value-adding activities while encouraging them to focus on the value-added activities. On the other hand, while countries currently positioned within the low value-adding activities are likely to aspire to the high value-adding activities, they will in all likelihood wish to protect their current exports by insisting on high national content. However, it remains unclear as to whether this is actually the response. By exploring the national content policies of the various ECAs, I will be gaining valuable insights into how government policies have reacted to GVCs.

2.7 LITERATURE CLOSING

The literature review commenced with understanding ECAs that included a history of ECAs and the traditional rationale for establishing ECAs. The relevance of national content policy and how this was utilised as a means to secure maximum job creation in the exporting country was explained. The chapter went on to explain the regulatory environment aimed at trying to ensure a level playing field within the ECA industry, highlighting that this regulatory environment does not address national content, providing ECAs with the freedom to adopt national content policies as they deem fit. The literature review then addressed GVCs and how the global trading environment has changed since ECAs were first established. This changing environment is causing ECAs and their governments to reconsider their role and response. The literature review closed with my various research questions and how these were defined by the literature review.

3 CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

In this chapter I outline the methods used to gather the data necessary to answer my primary research question and the sub research questions. The chapter recaps the primary research question and the sub research questions, highlighting the key data required to answer these questions. The chapter discusses the research method and the strategy utilised to gather the data required to measure the variables highlighted as key to answering the research questions.

The study yielded surprising results. The extensive referral to GVCs on the websites of ECAs and within the literature created the impression that most ECAs were relaxing their national content requirements in acknowledgement of the greater participation by their exporters in GVCs, even if such decisions somewhat contradicted the historical goal of ensuring local job creation. But the analysis of information obtained about choices on national content and national interest criteria from the ECAs, using questionnaires and publicly available data, did not support the expected results. As a result, I decided to revisit the evidence using abduction as my chosen design.

Abduction (Dubois & Gadde, 2002; Sætre & Van De Ven, 2021; Timmermans & Tavory, 2012) is recommended as a strategy when empirical results represent a “surprise” or anomaly. The design involves both deductive and inductive elements, and the steps are in sequence a) recognising and then b) confirming the anomaly, before c) generating and finally d) evaluating “hunches”. The benefit of abduction is that it continues probing beyond the initial surprising empirical results, and given that my initial assumptions were disproven, I decided to opt for this approach. In this chapter, I explain each step.

3.2 RESEARCH QUESTIONS

The primary purpose of the data gathering process was to gather sufficient data to answer the following primary and sub research questions:

- How have governments changed the national content policies of ECAs in response to GVCs?
    - To what extent does the national content policy of ECAs reflect the degree of a country's integration within GVCs?
    - To what extent does the national content policy of ECAs reflect a country's position within the value-adding activities of GVCs?
    - What additional GVC related dynamics, if any, are at play that reflect the national content policy of ECAs?

3.3 ABDUCTION AS A RESEARCH DESIGN

Abduction is often not the first choice of a research design, and instead is used when the results obtained represent an anomaly or empirical surprise (Timmermans & Tavory, 2012). I had commenced the research project expecting to find linkages between the national content policy of ECAs and the degree of country participation within GVCs. Utilising quantitative statistical techniques, I reviewed the descriptive statistics and the results from binary logistics regression. My analysis produced results contrary to my expectations, what authors describing the process of abduction call a surprise or anomaly (Sætre & Van De Ven, 2021; Timmermans & Tavory, 2012). Although such an anomaly can be identified before the project starts and be a trigger for the project, in most cases (e.g., Dubois & Gadde, 2002), it is the identification of the anomaly that happens during data analysis that triggers the abduction approach.

According to Sætre and Van De Ven (2021) the starting point of abduction is identifying an anomaly. This identification can come from data analysis and the analysis itself can be quantitative or qualitative. An anomaly is considered a deviance from expectations.

The second step in abduction is to confirm that the anomaly exists (Sætre & Van De Ven, 2021). Therefore, having identified this anomaly, I set about testing whether I was correct in being surprised with my results and that it was indeed an anomaly. First, I reviewed the websites of ECAs and my questionnaires in order to reconfirm that the dominant espoused view was that GVCs were influencing national content policies. Next, I rechecked my results considering interaction effects and I utilised alternative value-adding variables to my original variables. This verification process reconfirmed my view and therefore I was comfortable that I had identified an anomaly.

The third phase of my research required me to generate ideas that made sense of the anomaly. Having determined an anomaly, the abduction process enters into a creative process that requires the researcher to try and make sense of what the research is saying. This is a phase of sensemaking and trying to develop hunches and can be an iterative process requiring one to go back into the data to try and obtain alternative explanations. Given the centrality of job creation in historical ECAs (Agarwal & Wang, 2016; Allen, 2015; Ascari, 2007; Bischoff, 2014; Blackmon 2014; Drysdale, 2014;Klasen, 2011; Stephens, 1999), it appeared plausible that the level of joblessness in a country would be an important driver for the adoption or not of national interest / national content policies. I therefore reworked the analysis with this addition. During the review of the websites, I also identified repeated referencing to competitiveness and therefore I added a country's degree of competitiveness to the analysis.

Once again, there was one clearly significant variable: the wealth of a country. Although, wealth interacting with competitiveness also produced very good results. Regardless of the level of joblessness, there is a tendency for the rich countries to adopt national interest or low national content policies, and poor countries to not do so. The final phase of my research required an evaluation of my hunch and a reflection on the clear albeit unexpected result, that the wealth of the country was critical in facilitating the decisions of the ECAs.

Because abduction involves a series of sequential analyses, the structure according to which data and analyses are reported is different to the norm. For each step (identification of the anomaly, confirmation of the anomaly, generation of alternatives and confirmation)

the entire analytic process, from data gathering to analysis, is reported. The next four chapters provide each step.

3.4 POTENTIAL BIAS

The vast majority of the ECAs on whom I had national content policy data are from OECD countries. Of the 31 ECAs on whom I gathered national content policies only five countries (Russia, Croatia, China, South Africa and India) were from non-OECD countries. Countries in my database not considered high income economies, according to the World Bank, only totalled six (Mexico, Russia, China, South Africa, India, Turkey). Seventeen countries in my database are members of the European Union with an additional three countries (United Kingdom, Norway and Switzerland) being fairly similar in terms of European identity and proximity, bringing the total up to 20. All three members of the North American Free Trade Agreement (NAFTA) were part of my dataset.

This is not unexpected, the mere membership of the ECA community tends to naturally already have this bias given that the majority of ECAs are from developed countries and few from developing countries. Therefore, there are definitely some similarities with the countries on whom I obtained information including geographical location; degree of wealth; political and economic associations. It is therefore plausible that there could be some degree of bias in terms of the research. However, within my dataset, I still received a diverse set of responses and my split between high (15) and low (16) national content policies was fairly even.

Of the population of 49, I received completed questionnaires or e-mail responses from 22 ECAs, and a further three formally declined to respond stating confidentiality concerns. Therefore, as part of the questionnaire gathering process, in total I received informative responses from 45% of the population. These countries account for 50% of global exports based on the World Bank's representation of 2019 International Monetary Fund data. Of these 22 ECAs 19 were from OECD countries, representing 86% of responses. Of the 27 non responses and declines, 13 were from OECD countries representing 48% of responses. Based on the World Bank's list of high-income countries, 18 responses were received from

high income countries, accounting for 82% of the responses. High income countries were represented by 16 of the non-responses and declines, accounting for 59% of the non-responses and declines. Therefore, a greater portion of the responses received were from OECD countries and high-income countries when compared to their portion of the non-responses and declines. This is likely to result in some bias with regards to the responses received via the questionnaires. However, again it should be noted that most ECAs are from the OECD and higher income countries and that a relatively diverse set of responses were still received within my response group.

3.5 VALIDITY AND RELIABILITY

3.5.1 MEASUREMENT VALIDITY

The national content policies of ECAs form a critical part of the research. To ensure the data obtained on national content policies are valid, three sources have been used to verify the national content data, namely the websites of ECAs, an Agency Finance Handbook 2018 developed by CC Solutions (http://www.blurb.com/b/8768368-the-cc-solutions-finpliance-agency-finance-handboo) and the responses received from a questionnaire that was sent to all ECAs. For ten countries I was able to verify the national content policy from all three sources and in another nine countries I verified the national content policy from at least two sources. For the remaining twelve countries, the national content policy was determined from one source. Where multiple sources were used, the national content policies across the various sources were consistent, creating a high degree of confidence in the accuracy of the national content policy data and thus allaying fears about bias introduced by how the data were gathered.

The close association between governments and their ECAs implies that the use of national content policy as an indicator of government policy is valid. A review of information provided by the ECAs in the data gathering process, together with a review of the websites of the ECAs, reconfirmed that the setting of national content policies by governments is an important consideration in the determination of government policy, supporting my view that

the setting of national content policies for ECAs is a valid setting for the consideration of government policy.

The country data relating to GVC integration and the value-added components within GVCs are based on data provided by the OECD and WTO, two respected international bodies monitoring international trade, GVCs and government policy and therefore the data provided from these organisations can also be considered valid. Furthermore input-output tables are considered the primary data tool for understanding international trade and GVCs. The OECD Inter-Country Input-Output (ICIO) tables that forms the basis of much of the data I utilised are considered one of the main sets of input-output tables and therefore I am confident that there is validity in the GVC integration and GVC value-adding data being used.

3.5.2 INTERNAL VALIDITY

My initial research suggested that the national content policies of ECAs would have a relationship with GVC participation and the value-adding activities within GVCs. I then utilised statistical analysis to test this. The results of this analysis were that I was unable to find a statistical relationship. My value-adding variable focused on services. However, to further test the validity of this outcome, I then utilised different value-adding variables. Firstly, I used R&D as an alternative measure to value-adding services. Next, I used two variables associated with value-added manufactures (domestic value added within manufactures and foreign value-added within manufactures), in case my focus on services favoured a certain type of economic structure. However, despite considering these alternative variables I was still not able to confirm a statistical relationship between GVC participation / value-adding activities and with national content.

However, the statistical analysis suggested a strong relationship between national content policies of ECAs and GDP per capita (a measurement of wealth) and to some extent GDP (size). To test for internal validity, I then utilised an alternative measure for wealth. Utilising this different measure for wealth, again confirmed a relationship between national content policies and the wealth of countries. Testing the non-relationship between national content and GVCs and value-adding activities from various perspectives and reconfirming the

relationship between national content and wealth, utilising two different measures gave me a reasonable degree of confidence that my results were accurate and that I had achieved internal validity.

3.5.3 EXTERNAL VALIDITY

External validity refers to the generalisability of my findings. The overriding conclusion of my research was that the national content policy was less about GVC participation and the value-adding activities within GVCs and more about the wealth of a country. It is of course possible that the relationship between my variables was more complex; that there were feedback loops and even that the level and type of national content policies drove GVC participation. Because I used regression, I make claims about correlation but not causation, and future research could be done to make sense of my unexpected findings.

However, as highlighted in the measurement validity and internal validity sections above, I believe that I have utilised appropriate measures to conduct my research and through a robust statistical analysis utilising at times different measurements of similar variables, I was able to verify my results. I believe that this supports the potential for replicating my results.

Furthermore, reviewing commentary from ECAs about their enhanced or detracted competitiveness linked to their financial strength, provides me with a degree of confidence that country wealth matters, and that such a conclusion is indeed generalisable. Concluding that country wealth matters may appear self-evident, but in the context of international trade where private sector players intertwined with public sector support are competing with each other it is an important outcome.

3.5.4 RELIABILITY

Reliability refers to replication and consistency. The clarity with which I explain my data selection process, the objective nature of the data and the detail provided about my analytic approach all contribute to reliability. The choice of abduction as a methodology also significantly enhanced the reliability of the research. This methodology, which covered four

distinct steps: a) identifying the anomaly, b) confirming the anomaly c) generation of hunches, d) confirmation of the hunch, ensured a rigorous and transparent methodological approach to the research.

Guided by the literature, I analysed data comparing the national content policy of ECAs to various GVC participation and value-adding activity variables, expecting to find a strong relationship. When the results did not produce the results as expected i.e., the results suggested a stronger connection between country wealth and national content policy as opposed to GVC participation and national content policy, I reconfirmed that my original expectations were not unreasonable by systematically reviewing the websites of ECAs and the questionnaire responses of the ECAs. In addition, I reprocessed the analysis substituting the value-adding variables with alternative value-adding measures, R&D and two variables associated with value-added manufactures, and produced similar results.

Next, I considered why countries may not have changed their national content policies in response to the rise of GVC. I replicated the process by systematically reviewing the websites of the ECAs and conducting binary logistics regression with unemployment and country competitiveness as additional explanatory variables. Again, wealth emerged as the key influencer. However, when considering interaction variables, wealth interacting with country competitiveness also emerged as important. Finally, I reprocessed the analysis utilising an alternate wealth variable, but it again produced a similar result to my original analysis confirming the relevance of wealth. Furthermore, I scrutinised the websites in order to identify the ECA referencing to country ratings (influenced by country wealth) to confirm that ECAs themselves do in fact recognise the relevance of wealth to their performance. I believe that the methodology adopted was thorough and reconsiders the findings from multiple angles, ensuring reliability of the results.

3.6 ETHICAL CONSIDERATIONS

Prior to proceeding with the questionnaires, I obtained the necessary ethical clearance from GIBS. The questionnaires were submitted to participants clearly informing them of:

- the purpose of the study;
- that their responses would be treated confidentially;
- that they were free to withdraw from the process at any time;
- my supervisors and my contact details and encouraging participants to contact either myself or my supervisors in the event that they had any queries regarding the questionnaire and the process.

These points were highlighted in a covering note that formed the introductory portion of the questionnaire and can be viewed in Appendix D. Furthermore, much of the data utilised are publicly available data.

3.6.1 DATA GATHERING CHALLENGES

It should be noted that to some extent the data gathering process was frustrated by the coronavirus pandemic. I had hoped that during the data gathering process to have attended some ECA related conferences where I would have been able to meet representatives of ECAs and to discuss my research with them. However, these conferences did not take place due to the pandemic. ECAs were not only struggling to come to terms with remote working and reduced employee access, but many of the ECAs were requested by their governments to step up and propose solutions to assist the global economy and trading environment during the pandemic. Thus, many ECAs entered into a particularly busy period with greater priorities limiting their ability to discuss their activities with me, or to complete research questionnaires. Fortunately, because they are government-backed entities, much of the evidence on their work was publicly available, allowing me to construct a usable dataset. The use of such data also provides some comfort that my research is based on objective and replicable data.

4 CHAPTER 4: IDENTIFICATION OF THE ANOMALY

The choice of abduction was motivated by the discovery that the choice of opting for national interest and low as opposed to high national content seemed to have less to do with GVC participation and more to do with the wealth of the country. That was the first outcome of the analysis, and in the next section I describe the steps I took to get to that discovery.

My key objective of this research was to better understand how government policy, through the national content policies of ECAs, is connected to GVCs. I anticipated that insights into this will be obtained by determining whether there is a relationship between the national content policies of ECAs and the degree of their country's' integration within GVCs; and to determine whether there is a relationship between the national content policies of ECAs and their country's position within GVCs in terms of high or low value-adding activities.

In order to explore the various research questions further I needed to gather more systematic data on the national content policy of ECAs, the degree of country integration within GVCs and the positioning of countries within GVCs in terms of high and low value-adding activities. I adopted a quantitative research methodology and gathered data utilising a combination of archival data and questionnaires. This data were then quantitatively analysed using descriptive and binary logistics regression techniques.

4.1 POPULATION AND SAMPLING

The Berne Union is an international not for profit trade association, representing the global export credit and investment industry. The membership includes government backed ECAs, private credit and political risk insurers and multilateral institutions. At the time this research commenced, the total membership of the Berne Union was 83, however my research focused only on the government associated ECAs, which reduced the number of eligible entities for the research to 63.

This research hones in on ECAs that support the funding of specifically medium to long term transactions, as this is the primary area of ECAs that require the consideration of a national

content policy. In the event that ECAs have multiple national content policies, the research has utilised the policy as it relates to medium to long term buyer credit policies that support the export of goods and services. The medium to long term nature of the support is associated with the export of goods and services that generally require this longer-term support such as capital goods and infrastructure projects as opposed to consumer related goods and services.

Of the 63 Berne Union government backed agencies, not all offer a medium to long term product that necessitates a national content policy and therefore these entities were not considered part of my population. The data utilised to measure GVC integration and the value-added component of GVCs were based on data provided by the WTO and cover 64 countries. The Berne Union lists 15 ECAs on whom I did not have the WTO data. These 15 have also not been included in my population. This was not considered an impediment to the research as the economies of these countries are quite small, with the largest excluded country in terms of global exports only ranking 40th.

There are 49 countries that have an ECA that fits the definition and on whom the WTO has the necessary GVC data and therefore my population is 49 countries. According to 2019 data provided by the World Bank, as identified by the International Monetary Fund, these 49 countries accounted for 78% of global exports in 2019 and comprised 35 of the world's 40 largest exporting countries. The total population of 49 countries, while meaningful in terms of global exports, is relatively small and therefore the data gathering process targeted all of these countries, resulting in a census approach.

4.2 UNIT OF ANALYSIS

Because I am interested in how government policy, through the national content policy of ECAs, reflects country participation within GVCs, the unit of analysis of my research is publicly owned ECAs or privately owned ECAs operating on behalf of their governments. I specifically focused on ECAs that support medium to long term transactions because it is in this area that the setting of national content policies is contemplated. The public nature of the ECAs and the setting of national content policies provide a unique setting for

understanding government policy. The emphasis of ECAs on exports provides relevance for exploring GVCs within this setting. The use of ECAs as the unit of analysis to understand GVCs and government policy allows me to bring a fresh perspective to the GVC and government policy literature.

4.3 DATA COLLECTION METHODS

The research required establishing the national content policies of ECAs in order to determine the dependent variable. It then required the gathering of various data relating to GVC integration and the value-added components within GVCs, the independent variables. The following section describes how these data were obtained.

4.3.1 NATIONAL CONTENT POLICIES

The starting point of the research was to develop a comprehensive list of ECA national content policies. ECA national content policy is the key variable in answering my research questions and therefore identifying these policies was critical to the analysis. Three sources were utilised to gather the necessary data. The websites of ECAs were studied and further national content details were obtained from a relevant industry association publication, the Agency Finance Handbook 2018 (developed by CC Solutions, http://www.blurb.com/b/8768368-the-cc-solutions-finpliance-agency-finance-handboo). Finally, a questionnaire was sent to all ECAs.

Questionnaires were e-mailed to the ECAs making use of the Berne Union contact list. In addition, where I had my own contact details at ECAs, the questionnaire was sent to these contacts. Further contact details were obtained via Linked In. In support of the research, the Berne Union agreed to send the questionnaire to all their members and a follow up reminder was sent by the Berne Union.

By collating data from the three sources, I was able to construct the national content policy of 31 ECAs from the population of 49. It is these ECAs and their associated countries that forms the basis of this research. These 31 countries account for 63% of the population of

ECAs and their countries represent 65% of global exports, a non-trivial portion of global exports, ensuring an acceptable number of ECAs to enable the research findings to be relevant.

4.3.2 DEGREE OF COUNTRY INTEGRATION INTO GLOBAL VALUE CHAINS

GVC participation indices and value-adding statistics derived from input-output tables have become widely recognised variables in trying to understand GVCs, international trade and in influencing government policy initiatives. Data emanating from these input-output tables breaks down trade according to the origins of value-added, which facilitates the analysis of GVC patterns by countries with a degree of granuality not previously possible (Casella, Bolwijn, Moran, & Kanemoto, 2019). These statistics can be broken down further into forward and backward linkages, and domestic and foreign value-added components (Aslam et al., 2017; Koopman et al., 2012;Timmer et al., 2015).

The first sub question explores the connection between the national content policy of ECAs and a country's degree of integration within GVCs. There was an expectation that countries that are well integrated into GVCs would have low national content policies. To analyse this question, I needed data on the degree of country integration into GVCs.

Using data from input-output tables enables one to measure the extent of a country's participation in GVCs, which can be used as a measure for the degree of integration into GVCs. The larger the ratio, the greater the degree of a country's involvement in GVCs (Aslam et al., 2017; De Backer & Miroudot, 2014). Firms can connect into GVCs in two ways. One way involves importing intermediate goods for further production and export, called backward integration. The other way involves exporting intermediate goods for further production in a foreign country, an input for further export, called forward integration (Van Assche & Gangnes, 2019). Input-output tables allow for the analysis of data that reflect the value-added by each country within GVCs, thereby providing a much clearer picture of the trade flows associated with a country's activities within GVCs (Aslam et al., 2017; De Backer & Miroudot, 2014).

Various input-output tables are available, including the Eora Multi-Region Input-Output (MRIO) database, the OECD Inter-Country Input-Output (ICIO) tables, the World Input-Output Database (WIOD) and Global Trade Analysis Project (GTAP) (Aslam et al., 2017; UNCTAD, 2013; Casella, Bolwijn, Moran, & Kanemoto, 2019).

This research relies on the WTO's Trade in Value-Added (TiVA) Database and the Global Value Chain Indicators Database. The TiVA database is a joint initiative by the OECD and the WTO. This database provides information on the value-added components of gross exports and the level of GVC participation. The TiVA database derives its information from the ICIO tables. The WTO presents this data in the form of country profiles that provide a range of statistics per country, including total, forward and backward GVC participation (De Backer & Miroudot, 2014; Van Assche & Gangnes, 2019). I utilised the latest ICIO figures available which relate to 2018.

Various researchers have conducted research using the TiVA database (Miroudot, 2019). De Backer and Miroudot (2014) are of the view that the ICIO database accounts for more than 95% of world output and allows for the analysis of GVCs from a truly global perspective. I felt the utilisation of a widely government recognised database the most appropriate, given that I am trying to identify linkages between ECA national content policies, government policy and GVCs and that many of the ECAs fall within the OECD. Gereffi (2019); in noting the valuable collaboration taking place between international development institutions such World Bank, OECD and UNCTAD and academics in advancing the research into GVCs; also references the TiVA database. Similarly, Van Assche and Gangnes (2019) in their research that looked at GVCs, trade policy, forward and backward integration and used an ECA as part of a case study, utilised the TiVA database.

The value of this dataset is confirmed even by scholars using some of the other databases. For example, Aslam et al. (2017) favoured the Eora MRIO due to it covering more countries. In order to ensure reliability of their findings Aslam et al. (2017) compared their findings from the Eora database to those of the TiVA database and concluded that the findings were comparable. They chose the TiVA database as the comparable database, stating that they believed it to be the most reliable government approved source. Similarly, Casella et al., (2019) concluded that there was a consistency of results when comparing statistics deriving

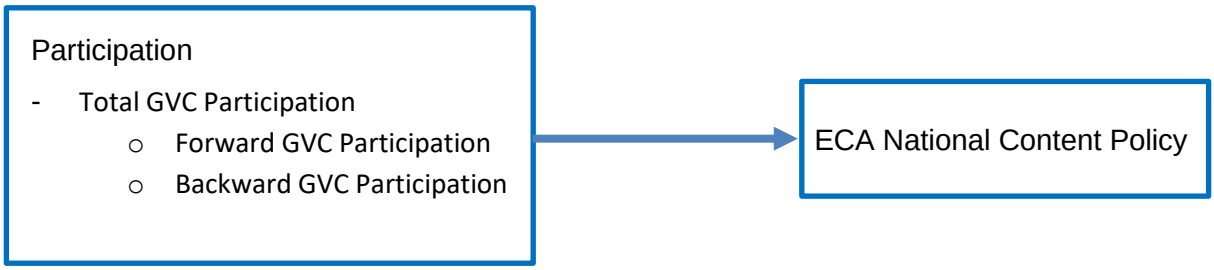
from the Eora and OECD-WTO TiVA databases. I believe that the TiVA database is sufficient for my research, given that the population is relatively small and adequately covered by the country data available from the TiVA database.

4.3.3 GLOBAL VALUE CHAIN PARTICIPATION INDICES

To conduct my analysis, I utilised the following information provided in the WTO country profiles:

- Participation in GVCs:
    - Total GVC participation.
    - Forward participation (domestic value-added sent to third economies)
    - Backward participation (foreign value-added content of exports).

Combining the data gathered on the national content policies of ECAs and the country GVC participation, enabled me to investigate the sub research question of how the national content policy of ECAs is related to the degree of country participation within GVCs.



The use of these variables and data is in line with the variables and data utilised by other researchers of GVCs. Hummels, Ishii and Yi (2001)**,** working with the OECD input-output tables, first proposed using the imported value of inputs utilised in exports, as a measure of international integration. There are two components to these inputs. One component involves the foreign value-added content of exports, which refers to the value of intermediates imported from third countries. These intermediate inputs then form part of goods and goods in progress which are then re-exported. The other component is a country's export of intermediates to third countries. These intermediate exports are then used as inputs by those third countries in goods and goods in progress that in turn are exported.

GVC participation indexes aim to capture the nature of a county's participation in GVC's and indicate the extent of a country's involvement within fragmented production processes. Koopman, Powers, Wang, and Wei (2010) explain that input-output tables enable one to determine a country's position within GVCs. Countries upstream within GVCs focus on producing inputs for other countries, while countries downstream within GVCs have a larger portion of imported intermediates utilised in the final export product. To understand GVC participation Koopman et al., (2010) consider these two variables, domestic value-added shares in exports and foreign value-added content of exports, which correlate to my selected variables of forward and backward GVC participation.

4.3.4 VALUE-ADDED CONTENT OF EXPORTS

The literature review identified that GVCs are increasingly being viewed from the perspective of value creation. My second sub research question queries whether there is a connection between the national content policies of ECAs and a country's position within the value-adding activities of GVCs. Countries positioning within the value-adding activities can vary between the higher and lower value-adding activities and therefore this question should be considered from both perspectives. My initial assumption was that countries that have a higher proportion of value creation activities will have lower national content policies and conversely, that countries with a lower proportion of value creation activities will have a higher national content policy.

To respond to this question, I needed data on country participation in value-adding activities. The WTO TiVA database provides the following country statistics regarding value-added components within gross exports:

- Domestic value-added sent to consumer economy;
- Domestic value-added sent to third economies;
- Domestic value-added re-imported in the economy;
- Foreign value-added content of exports;
- Foreign services value-added contribution to total exports;
- Indirect domestic services value-added contribution to total exports;
- Direct domestic services value-added contribution to total exports;
- Foreign services value-added contribution to exports of manufactures;

- Indirect domestic services value-added contribution to exports of manufactures.

The measures related to services are anticipated to be the most relevant to this question. Services include:

- R&D;
- professional and management consulting services including legal, accounting and public relation services, advertising and market research;
- technical and trade related services such as architectural and engineering;
- information and communications technology services.

In the literature review, many of these service-related activities were considered the higher value creation activities and I therefore anticipated that countries that were well integrated into GVCs would be less concerned with the low value-added, manufacturing processes and more concerned with capturing the higher value, service focused activities.

Van Assch (2020) refers to intangible assets and considers them to be an increasing area of importance given their ability to capture the higher value within GVCs. Intangibles tend to occur at the pre and post production stages, the start and end areas within the smile curve referenced in the literature review. Van Assche (2020) goes on to say that intangibles include processes such as R&D, management, supply chain management (often encompassing information and communication technologies) and marketing and sales activities.

Alsamawi, Cadestin, Jaax, Guilhoto, Miroudot and Zürcher (2020) acknowledge that there are numerous challenges in the measurement of intangible assets. They confirm that data from the ICIO tables that utilise the data of the OECD Trade in Value-Added (TiVA) database are the appropriate data for analysing GVCs. In trying to determine appropriate measures, these authors first consider value-adding activities in general as highlighted by the TiVA database. However, they also place specific emphasis on intangible assets and on the services sectors. R&D receives specific reference, as this is considered a key component of value-added arising from services or intangible assets. Conversely these authors reference labour share in manufacturing as the converse to value-added services.

The required inputs to address my second question are national content policies and the high / low value-adding activities. My expectation was that countries with a focus on the high

domestic value-added indicators would be concentrating on the higher value-adding activities and that countries with high foreign value-added indicators would be focusing on the low value-adding activities.

The national content policies of ECAs gathered, together with the value-added services component of exports obtained from the WTO TiVA database enabled me to investigate this sub research question. Initially, I considered utilising all the domestic and foreign value-adding activities, however, there is significant overlap between these variables and the GVC participation variables and therefore I utilised only the domestic and foreign value-adding activities as they relate to services. I was comfortable with this selection given the strong emphasis by authors on services and intangible assets. In conclusion my analysis associated with the value-adding activities of countries within GVCs focused on the following:

- Foreign services value-added contribution to total exports;
- Indirect domestic services value-added contribution to total exports;
- Direct domestic services value-added contribution to total exports;
- Foreign services value-added contribution to exports of manufactures;
- Domestic services value-added contribution to exports of manufactures.

4.3.5 CONTROL VARIABLES

As part of the analysis, it was necessary to include various control variables. Nielsen and Raswant (2018) highlight the importance of including control variables in regression analysis and indicate that inadequate usage of control variables can cause errors in the research findings. I focussed on two key variables.

The control variables I used were:

- the size of the economy, measured in terms of GDP;
- the wealth of an economy, measured in terms of GDP per capita;

I considered utilising other variables; including free trade agreements, trade regimes, political preferences etc. However, given the small number of ECAs. I decided to preserve degrees of freedom and use a limited number of controls.

The control variables selected were chosen as they were deemed to have a possible relationship with national content policies. Larger economies are more likely to be able to source products from within their economy and therefore it is possible that these countries will be less willing or have less need to reduce their national content policies. On the other hand, small economies tend to be less vertically integrated, making it difficult for companies to source all their inputs from within the country. The literature review confirmed that factors such as the size of the economy can influence the national content policy of ECAs (Bischoff, 2014; Drysdale, 2014; Hunke, 2014; Schipfer, 2017). There is a possibility that the larger economies will tend to have higher national content policies. The wealth of the economy was also included and it was anticipated that wealthier countries may be more flexible in terms of their national content policies. Dima, Begu, Vasilescu and Maassen (2018) believes that GDP per capita is an indication of accumulated productivity of a country and is a measure of material prosperity, well-being and development. Aiginger (2006) confirms that welfare or living standards can be proxied by per capita income measured as GDP per capita.

In multi-country studies GDP and GDP per capita are commonly used control variables and therefore my use of them as control variables is in line with other research (Duanmu, 2014; Nielsen & Raswant, 2018; Rose & Ito, 2008). Data provided by the World Bank for the year 2020 on GDP and GDP per capita were utilised in my research.

4.4 DATA ANALYSIS

The data analysis involved two phases. The first involved describing the descriptive statistics related to the data. The second phase involved analysing the data by means of binary logistic regression.

A key challenge in the data analysis was the treatment of the various national content policies, which vary quite considerably. On the one extreme some countries such as the USA and Turkey insist on 100% national content to attract the support of the ECA. At the other end of the spectrum countries like Denmark, Netherlands and the United Kingdom have a low national content policy of 20%. Most ECAs specify a particular percentage, However, there are a number that have a flexible approach referring to the importance of national interest or economic benefit, for example Luxembourg, Italy and Canada. In these countries, the discretion to support the export is in the hands of the ECA who can assess the merits of each enquiry on a case-by-case basis. It is reasonable to assume that such countries would accept low national content requirements, although this may not always be the case. One country, Estonia, has a policy requiring “majority” which also allows for some flexibility, although their approach is more conservative leaning towards a much higher percentage of national content.

In order to accommodate statistical analysis, I first gave “national interest” a measure of “10” percent and “majority” a measure of “100” percent, enabling me to consider national content policy as a continuous variable. However, this is to some extent a random decision as “national interest” is not necessarily “10” and “majority” is not necessarily “100”. An alternative to considering national content as a continuous variable, is to consider it as a categorical variable, either “high” or “low”, with “majority” clearly falling into the “high” category and “national interest” clearly falling into the “low” category. Separating the dependent variable of national content policies into two categories, either “high or “low”, enabled me to analyse the data utilising binary logistic regression. “High” was considered 40% national content or higher and “majority”; and “low” was considered national content less than 40% and “national interest”.

4.4.1 DESCRIPTIVE STATISTICS

The descriptive phase of the data analysis involved Pearson correlation, used to describe the strength and direction of the linear relationship between variables. I was particularly interested in understanding the results of Pearson correlation as it was a method utilised by Timmer, et al. (2019), who looked to identify relationships between the various functional

tasks within GVCs undertaken by 40 countries and the degree of advancement of each country measured by GDP per capita. This research was considered an appropriate benchmark given the authors expertise in utilising data from input-output tables, the similarity in the variables and the comparable population sizes.

The descriptive statistics involved comparing the national content dependent variable to the control variables and the independent variables of GVC participation and the role of services value-added in exports in order to determine the extent and direction of the relationships. The dependent variable was a binary measure of national content policy, with high national content policy being coded as one and low national content policy coded as zero. The control and independent variables were all continuous variables. Table 4-1 shows the results of the descriptive statistics and Table 4-2, the correlation matrix.

Table 4-1 Descriptive statistics for the main variables

Dependent variable: high / low national content

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low (0)	15	48.4	48.4	48.4
	High (1)	16	51.6	51.6	100.0
	Total	31	100.0	100.0	

Control and independent variables

	N	Minimum	Maximum	Mean	Std. Deviation
Control variables					
GDP in US$ millions	31	36,263	22,996,100	2,342,094	4,974,905
GDP per Capita in US$	31	2,277	135,683	43,024	29,516
Independent variables					
Total GVC Participation	31	27.40	78.60	47.12	10.14539
Forward GVC Participation	31	10.50	39.00	20.75	6.32871
Backward GVC Participation	31	8.60	66.40	26.38	11.68
Foreign Services VA of Total Exports	31	4.10	60.20	14.36	10.09
Foreign Services VA of Export of Manufactures	31	5.90	39.70	16.12	7.14
Indirect Domestic Services VA of Total Exports	31	1.50	21.80	12.23	4.47
Direct Domestic Services of Total Exports	31	13.00	54.00	31.26	10.23
Indirect Domestic Services VA of Export of Manufactures	31	10.20	31.20	21.91	4.98
Valid N (listwise)	31				

VA – Value-Added

Table 4-2 Correlation matrix

Correlation matrix (1)

	High / Low National Content	GDP in US$ millions	GDP per Capita in US$	Total GVC Participation	Forward GVC Participation	Backward GVC Participation
High / Low National Content	1					
GDP in US$ millions	.251	1				
GDP per Capita in US$	-.419*	-.012	1			
Total GVC Participation	-.081	-.352	.373*	1		
Forward GVC Participation	-.155	.135	.114	.052	1	
Backward GVC Participation	.013	-.380*	.263	.842**	-.495**	1
Foreign Services VA of Total Exports	-.158	-.310	.531**	.830**	-.370*	.922**
Foreign Services VA of Export of Manufactures	-.108	-.424*	.411*	.878**	-.332	.943**
Indirect Domestic Services VA of Total Exports	.084	.316	-.422*	-.553**	.141	-.557**
Direct Domestic Services of Total Exports	-.031	.039	.166	-.294	-.162	-.168
Indirect Domestic Services VA of Export of Manufactures	-.038	.268	-.052	-.567**	.328	-.670**

Correlation matrix (2)

	Foreign Services VA of Total Exports	Foreign Services VA of Export of Manufactures	Indirect Domestic Services VA of Total Exports	Direct Domestic Services of Total Exports	Indirect Domestic Services VA of Export of Manufactures
High / Low National Content					
GDP in US$ millions					
GDP per Capita in US$					
Total GVC Participation					
Forward GVC Participation					
Backward GVC Participation					
Foreign Services VA of Total Exports	1				
Foreign Services VA of Export of Manufactures	.914**	1			
Indirect Domestic Services VA of Total Exports	-.613**	-.657**	1		
Direct Domestic Services of Total Exports	-.069	-.084	-.424*	1	
Indirect Domestic Services VA of Export of Manufactures	-.556**	-.648**	.695**	-.055	1

n = 31; * Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

The analysis of the dependent variable of national content policies and the various independent and control variables comprised 31 countries (n = 31). 52% of the ECAs have a high national content policy and 48% low. The mean national content policy across the 31 ECAs was 44.42% and the median 40% (determined by representing “national interest” as 10%). This median of 40% was used as the cut-off point to differentiate between the high and low national content policy categories.

The key focus of the analysis was to understand which variables were correlated with the dependent variable of high / low national content. Contrary to my expectations none of the independent variables of GVC participation and the value-adding services were correlated to high / low national content policy.

The control variables of GDP and GDP per capita fared better. The GDP correlation to national content was 0.251, and although not significant (significance score of 0.174), the variable reflected a higher correlation than any of the independent variables. The positive sign indicates that the higher the total GDP of a country (i.e., the larger the size of the economy), the higher the national content policy of the country. The correlation of GDP per capita to national content was -0.419 and was considered significant at the 0.05 level (significance score of 0.019), the only variable that exhibited a significant correlation with high / low national content. The negative sign associated with the correlation indicates that the larger the GDP per capita, the lower the national content policy, suggesting that wealthier countries as measured by GDP per capita are more likely to adopt low national content policies.

The correlation results highlight that several of the independent variables were significantly correlated with each other, raising multicollinearity concerns. Graham (2003) highlights the bias in results caused by multicollinearity in regression analysis and therefore it was important that I address this. I tested for multicollinearity using variance inflation factors (VIF) to determine multicollinearity. Multicollinearity was considered a problem if the VIF score for a variable was in excess of 10. A number of multicollinearity concerns were identified. Unsurprisingly, total GVC participation was a concern, due to it being made up by the combination of forward and backward participation. In addition, multicollinearity was identified between backward participation and the two foreign services variables. The

independent variables identified in Table 4.3 were removed from the regression analysis models due to their conceptual similarity and thus their VIF score being more than 10.

Table 4-3 Variables removed due to multicollinearity

		Collinearity Statistics	
		Tolerance	VIF
	(Constant)		
	Total GVC Participation	.032	30.926
	Foreign Services VA of Total Exports	.054	18.549
	Foreign Services VA of Export of Manufactures	.054	18.473

Once these variables had been removed, the multicollinearity tests were redone and the remaining variables exhibited no further multicollinearity concerns.

4.4.2 BINARY LOGISTIC REGRESSION

Binary logistic regression was utilised to analyse the data to help me address the sub research questions of whether the national content policy of ECAs reflects the degree of a country's integration within GVCs and whether the national content policy of ECAs reflects a country's positioning with regards to the value-adding activities within GVC. Binary logistic regression analysis enables one to assess the impact of one or more independent predictor variables on a dependent variable that has only two, binary, outcomes (Fagerland & Hosmer, 2012).

The key variable in the analysis is my dependent variable of national content policy. While in the majority of cases a percentage is allocated to national content, a number of ECAs simply adopt a "national interest" approach not specifying a percentage. On the other hand, certain ECAs require a high quantity of national content but refer to the need for "majority" national content. Utilising binary logistic regression enabled me to test the relationship between models comprising of various predictor variables and the categorical outcomes of either "high" or "low" national content policy. In my binary logistics regression models low national content policy takes the value of "0" and a high national content policy, the value of "1". The intention of the regression analysis was to determine whether certain blocks of independent variables could explain whether the national content policy of an ECA was likely to be high or low.

The median of the national content policy of the 31 ECAs was 40% and this was therefore utilised as the cut off point for determining which ECAs fall into the low and high categories. ECAs having a national content policy of national interest or less than 40% were categorised as low, while ECAs having a national content policy of majority or 40% and higher were categorised as high national content policy ECAs. In total, 16 of the countries are classified as having high national content policies and 15 as having low. I wished to understand the influence of different blocks of variables on national content and therefore entered various groupings of variables sequentially starting first with the control variables, then adding the GVC participation variables, and next adding the value-adding services activity variables. In total I estimated three models:

- Model 1 contained only the control variables.
    - Control variables:
        - GDP.
        - GDP per capita.
- Model 2 contained the control variables and the independent variables associated with GVC participation.
    - Control variables:
        - GDP.
        - GDP per capita.
    - Participation in GVCs:
        - Forward participation.
        - Backward participation.
- Model 3 contained the control variables, the independent variables associated with GVC participation and the independent variables associated with the value-adding services activities within GVCs.
    - Control variables:
        - GDP.
        - GDP per capita.
    - Participation in GVCs:
        - Forward participation.
        - Backward participation.
    - Role of services value-added in exports.
        - Indirect domestic services value-added content of total exports.
        - Direct domestic services value-added content of total exports
        - Indirect domestic services value-added content of exports of manufactures.

Model fit was established by considering the Omnibus Tests of Model Coefficients and Hosmer-Lemeshow Goodness of Fit Test, models frequently used in testing for model fit in binary logistic regression (Fagerland & Hosmer, 2012).

The first model is depicted in Table 4.4 and considers the two control variables. Due to the large values of the two control variables, they were adjusted in order to facilitate a more meaningful interpretation. GDP was revised to be depicted in trillions and GDP per capita revised to be depicted in 10,000s.

Based on the Omnibus Tests of Model Coefficients, the model 1 was statistically significant, X^2 (2, N = 31) = 9.071, p < 0.05. The chi-square value was 9.071 with 2 degrees of freedom and a significance value of 0.011, below 0.05 confirming that the model is a good fit. The chi-square value for the Hosmer-Lemeshow Goodness of Fit Test is 11.055 with a significance level of 0.199. The significance value is larger than 0.05, which therefore also indicates support for our model. Both tests confirm a goodness of fit for the model. The model overall explains between 25.4% (Cox and Snell R square) and 33.8% (Nagelkerke R squared) of the variance in national content policy. The model correctly classifies 80.6% of cases, an improvement from the null model (51.6%). 87.5% of cases were correctly predicted as having high national content policies while 73.3% of cases were correctly predicted as having low national content policies. GDP per capita was significant (0.033). The odd ratio of 0.651 for GDP per capita was less than 1 indicating that the higher the GDP per capita the less likely the country is to adopt a high national content policy.

Table 4-4 Binary logistics regression results for model 1

								95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	GDP Adjusted in US$	.185	.165	1.252	1	.263	1.203	.870	1.664
	GDP per Capita Adjusted in US$	-.430	.202	4.538	1	.033	.651	.438	.966
	Constant	1.492	.898	2.760	1	.097	4.444		

a. Variable(s) entered on step 1: GDP Adjusted in US$, GDP per Capita Adjusted in US$.

In summary, model 1 performed well with the two control variables acting as strong predicters of national content policy. GDP per capita was particularly strong, with the variable being significant. Next, I expanded model 1 to include the GVC participation variables.

Model 2 built on model 1 by adding the GVC participation variables of forward and backward GVC participation. Based on the Omnibus Tests of Model Coefficients, the model 2 was statistically significant, X^2 (4, N = 31) = 11.325. p > 0.05. The chi-square value was 11.325 with 4 degrees of freedom and a significance value of 0.023, below 0.05 confirming that the model is a good fit. The chi-square value for the Hosmer-Lemeshow Goodness of Fit Test is 14.411 with a significance level of 0.072. The significance value is larger than 0.05, which therefore indicates support for our model. The model on the whole explains between 30.6% (Cox and Snell R square) and 40.8% (Nagelkerke R squared) of the variance in national content policy. The model correctly classifies 87.1% of cases, an improvement from the null model (51.6%). 87.5% of cases were correctly predicted as having high national content policies while 86.7% of cases were correctly predicted as having low national content policies. The model reflected a predictive improvement from model 1 (80.6%). The only variable that was significant (0.020) was the control variable of GDP per capita, which was negatively related to high national content and had an odds ratio of 0.627.

Table 4-5 Binary logistic regression results for model 2

								95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	GDP Adjusted in US$	.299	.260	1.318	1	.251	1.348	.809	2.246
	GDP per Capita Adjusted in US$	-.467	.201	5.398	1	.020	.627	.422	.929
	Forward GVC Participation	-.029	.089	.108	1	.743	.971	.816	1.156
	Backward GVC Participation	.066	.056	1.374	1	.241	1.068	.957	1.192
	Constant	.360	2.746	.017	1	.896	1.433		

a. Variable(s) entered on step 1: GDP Adjusted in US$, GDP per Capita Adjusted in US$, Forward GVC Participation, Backward GVC Participation.

Model 2 also performed well and showed an improvement on model 1 suggesting that the inclusion of GVC participation improves the predictability of high or low national content policy. However, the model indicates that none of the GVC participation variables are significant and the only significant variable remains GDP per capita.

Due to the emphasis within the literature that services are considered key value-adding activities and the fact that there was an overlap between some of the possible value-added variables and the GVC participation variables, next I chose to estimate the models utilising

the value-adding variables associated with services, expanding on model 2 which included the control variables and the GVC participation variables.

Based on the Omnibus Tests of Model Coefficients, the model 3 was not statistically significant, X^2 (7, N = 31) = 12.307. p > 0.05. The chi-square value was 12.307 with 7 degrees of freedom and a significance value of 0.091, above 0.05 confirming that the model is not a good fit. The chi-square value for the Hosmer-Lemeshow Goodness of Fit Test is 16.720 with a significance level of 0.033. The significance value is less than 0.05, which therefore also indicates that our model is not a good fit. The model on the whole explains between 32.8% (Cox and Snell R square) and 43.7% (Nagelkerke R squared) of the variance in national content policy. The model correctly classifies 83.9% of cases, an improvement from the null model (51.6%). 87.5% of cases were correctly predicted as having high national content policies while 80.0% of cases were correctly predicted as having low national content policies. The model reflected a predictive decrease from model 2 (87.1%). Again, the only variable that was significant (0.016) was the control variable of GDP per capita, which was negatively related to high national content and had an odds ratio of 0.566.

Table 4-6 Binary logistic regression results for model 3

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Step 1[a]	GDP Adjusted in US$	.346	.324	1.142	1	.285	1.413	.749	2.666
	GDP per Capita Adjusted in US$	-.569	.236	5.841	1	.016	.566	.357	.898
	Forward GVC Participation	-.036	.103	.121	1	.728	.965	.788	1.181
	Backward GVC Participation	.082	.087	.881	1	.348	1.085	.915	1.288
	Indirect Domestic Services VA of Total Exports	-.151	.224	.455	1	.500	.860	.554	1.334
	Direct Domestic Services of Total Exports	-.004	.074	.003	1	.960	.996	.862	1.151
	Indirect Domestic Services VA of Export of Manufactures	.134	.156	.744	1	.388	1.144	.843	1.551
	Constant	-.595	7.674	.006	1	.938	.551		

a. Variable(s) entered on step 1: GDP Adjusted in US$, GDP per Capita Adjusted in US$, Forward GVC Participation, Backward GVC Participation, Indirect Domestic Services VA of Total Exports, Direct Domestic Services of Total Exports, Indirect Domestic Services VA of Export of Manufactures.

Model 3 that included the control variables, the GVC participation variables and the value-adding services activities within GVC variables; was not considered a good model fit and showed a reduced degree of predictability from the model 2. Again, the only variable that reflected significance was the GDP per capita variable.

4.5 CONCLUSION

The research methodology utilised to gather the data required to answer my primary and sub research questions has been outlined above. The research involved a quantitative methodology making use of a combination of archival data and data gathered from questionnaires sent to ECAs. Sufficient data covering the variables identified as necessary to answer my research questions were obtained for 31 entities out of a population of 49, representing 63% of the population of ECAs and 65% of global exports.

My first two models, model 1 with only the control variables and model 2 with the control variables and GVC participation variables, were good model fits. In addition, the two models showed good national content predictive capabilities. The enhancement of the model with the inclusion of GVC participation variables would suggest that GVC participation, does have some influence over the national content policy of ECAs. However, the extent of this influence is not to the degree I expected and certainly the only variable that produced a significant result was the GDP per capita variable. Furthermore; model 3, which included the addition of the value-adding services activity, was not a good fit and in fact showed less predictive capabilities than model 2. This would suggest that the country value-adding activities within GVCs is not actually influencing the national content policy of ECAs.

The overriding conclusion of the models is that the wealth of the country (GDP per capita) mattered more than the other predicters. In all three models, this was the only variable that was significant. Table 4-7 provides a summary of the significance scores, clearly emphasising the importance of this variable.

Table 4-7 Summary of the significance levels for all three models

		Only controls Sig.	With GVC participation Sig.	With VA services Sig.
Step 1[a]	GDP Adjusted in US$	.263	.251	.285
	GDP per Capita Adjusted in US$	.033	.020	.016
	Forward GVC Participation		.743	.728
	Backward GVC Participation		.241	.348
	Indirect Domestic Services VA of Total Exports			.500
	Direct Domestic Services of Total Exports			.960
	Indirect Domestic Services VA of Export of Manufactures			.388
	Constant	.097	.896	.938

In conclusion, the results were not at all what I expected. While country GVC participation may have a minor influence on national content, a country's positioning within the value-adding activities seemed to have no influence. Ultimately, the wealth of a country provides the strongest explanation as to whether ECAs would pursue a high or low national content policy or a national interest policy. This was not at all what prior literature had suggested might be the case. Having drawn this conclusion, I therefore sought to confirm the anomaly.

5 CHAPTER 5: CONFIRMING THE ANOMALY

5.1 INTRODUCTION

My interest in the relationship between ECAs and GVCs started in the context of my work as a practitioner working in the space of ECAs. I have often heard colleagues discuss the need to adopt more of a national interest approach or at the very least a low national content policy, because GVCs were transforming how global trade was taking place. This view was reinforced by the literature review with the extant literature providing some indications that my perceptions should have been correct. Authors such as Bischoff (2014) and Klasen (2011) recognised that production patterns were changing and that this was likely to have an impact on ECAs. Schipfer (2017) of the Austrian ECA was quite explicit on the impact of GVCs on the policies of the Austrian ECA, as was Van Assche and Gangnes (2019) when commenting on the Canadian ECA. The Swedish ECA in an article on their website went into some detail in explaining the smiling curve and the importance of Sweden adopting policies that supported the value-adding activities within GVCs.

However, seeing the somewhat unexpected results, I was concerned that my approach may have been coloured by my personal experience operating within the industry. Therefore, I wished to confirm the anomaly; namely, revisit my expectations to establish whether they were indeed founded and revisit the statistical results to establish that they were indeed correct.

In order to confirm the anomaly, I first turned to the websites of ECAs and the various responses that I had received from ECAs via the questionnaire process. In addition, I reprocessed the statistical analysis checking for interaction effects and substituting the value-added services variables with the alternative variable of R&D and two variables associated with value-added manufactures, in order to validate my findings.

5.2 THE CHANGING NATIONAL CONTENT POLICY OF EXPORT CREDIT AGENCIES

Having concluded that the current national content policy of ECAs reflected only a minor relationship with GVC participation and on the face of it no relationship to the value-adding activities within GVCs, I sought to try and better understand the changes that had taken place over time.

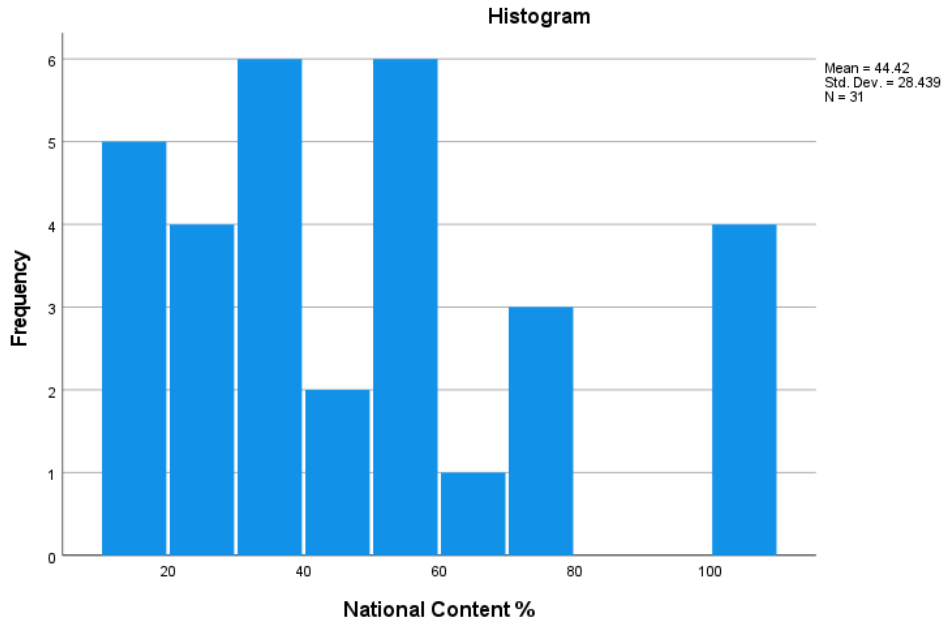
There was insufficient data for the historical national content policies of ECAs to enable me to do a time-based analysis. As a result, I conducted a cross section analysis, meaning that the research is more about correlation than causality. Nevertheless, I was able to identify some historical national content policies of ECAs which provided some clues as to how ECAs have been changing their national content policies in recent years.

Although the websites of ECAs provided limited historical national content information, I received some details from thirteen ECAs within the questionnaire responses. In these responses, eight ECAs indicated that their current policy had come into effect since the beginning of 2016, a relatively recent date for amending their national content policy. Three ECAs have had their current policy in place for at least ten years. Of the remaining two, one changed their policy in 2012 and one in 2014.

A few of the responses provided some historical information regarding their national content policy. One ECA indicated that they had removed their 30% national content requirement in favour of a “national interest” approach, preferring to consider the economic benefit of the export transaction to their country as opposed to the previous approach of being fixated on a percentage of content. Another ECA, also with a “national interest” approach, indicated that their revised policy allowed for the inclusion of value-added services in the calculation of content a shift away from a previous emphasis on the domestic value of production. A third ECA, with a low national content policy of 20%, while not referencing the exact previous national content policy indicated that it was certainly higher. Three ECAs were quite clear with the downward trajectory of their policy, one indicating that the policy had shifted over the years from 70% to 50% to its current 20%. A second indicated that their policy had shifted from 70% to 51%. The third confirmed an adjustment from 85% to 70%. Surprisingly one ECA indicated that they had actually increased their national content requirements,

revising the policy from 50% to 70%. This was the only ECA that indicated an upward change, and it appears to be an exception with there being no other indications of any other ECA doing something similar.

The literature review highlighted that originally ECAs limited their cover to the content of goods and services produced in their domestic economy, considered a “national content” approach (Bischoff, 2014; Klasen, 2011). The data that I obtained in my research clearly indicates that this is no longer the case. National content data were obtained for 31 countries. Only four of these countries state a 100% or majority national content approach. On the other end of the spectrum five ECAs confirmed having a “national interest” approach. While “national interest” is not a uniform definition, it clearly suggests that the ECA has a flexible approach to determining the eligibility of transactions that it can support. This means that national content is not the overriding factor in determining whether the ECA can support a transaction or not. The remaining 22 ECAs have national content policies ranging from 20% to 75%.



Graph 5-1 The national content policies of the 31 ECAs

Utilising 10% to represent the “national interest” ECAs, results in the national content mean of the 31 ECAs being 44.42% and the median 40%. The skewness score of the national content policy data is +0.749 reflecting a clustering of results towards lower national content policies. See Appendix B for full list of national content policies.

The data on the national content policy of ECAs clearly indicates that the national content policy of ECAs is changing, and with a few exceptions are considerably different from the historical position where the national content policy was restricted to goods and services produced within the exporting country. Thus, there is indeed a change, and moreover, the change is consistent with a shift towards enabling greater participation in GVCs.

In summary, the evidence confirms that in general ECAs have been revising downwards their national content requirements, with many of these changes taking place in relatively recent years, a similar period in which GVCs have become the dominant form of how trade is conducted.

5.3 ECA DATA ON GLOBAL VALUE CHAINS GATHERED FROM WEBSITES

I had previously consulted the websites of ECAs, but returned to those websites in a more systematic way to deepen my understanding of what they were saying with regards to national content and GVCs.

I was aware that I had based my views on typically informal statements by professionals working within ECAs, and that those comments may not reflect the choices of their governments. However, websites would give me more information about the publicly espoused intent of both ECAs and their governments.

5.3.1 WHAT ECAS CLAIM ON THEIR WEBSITES

A closer examination of ECAs and their websites revealed that a number of ECAs were concerned with a range of trade related considerations, including national content policies, GVCs and the value-adding activities. These are referenced in Table 5-1. Please note that in the interest of space only the very key aspects of statements have been extracted. Empty cells represent cases in the dataset for which no publicly shared data were available.

Table 5-1 Extracts from ECA websites on national content and GVCs

ECA	National content statement	GVC/value-added reference
Australia https://www.exportfinance.gov.au/admin-pages/key-eligibility-criteria-for-project-and-structured-finance/	*An important consideration when assessing this benefit is the economic activity stimulated in Australia by the presence of Australian content*	*Greater Australian participation in international supply chains.* *Our evolving mandate and the increasing globalisation of supply chains means the export contract values and Australian content values of our transactions are changing (2020-2021 annual report).*
Austria https://www.oekb.at/en/export-services/about-oekb-export-services.html	*Austrian value added of 50% is needed.*	*Globalization leads to global sourcing, that is why foreign content in a project has to be controlled.*
Belgium https://credendo.com/sites/default/files/media/files/2021-08/2021%20General%20Terms%20ECA%20EN.pdf	*Belgian Interest shall mean the interest that the operation shall represent for the Belgian economy, as indicated in the special terms and expressed as a percentage in relation to the value of the Contract.* *(1996) Market Window activity is launched, allowing Credendo – Export Credit Agency to cover risks that represent only a minor Belgian interest.*	
Canada https://www.edc.ca/en/solutions/financing/structured-project-finance.html https://www.edc.ca/en/about-us.html	*your project clearly demonstrates economic benefits to Canada*	*We help Canadian companies gain access to global supply chains … to facilitate connections between Canadian suppliers and international buyers.*
China		
Croatia		
Czech Republic https://www.egap.cz/en/rules-origin-goods	*The share of Czech goods and services in the total value of the export … has to meet the following parameters: 50% … An exception … is possible only in transactions when the exporter unequivocally evidences that goods necessary for completion of the export are not produced in the Czech Republic*	
Denmark https://ekf.dk/en/what-we-do/become-an-expert-in-export/what-we-ask-of-you	*Sign a declaration that for the specific transaction at least 20 per cent of the contract amount equipment and/or services are produced by you, by your subsidiary abroad and/or by sub suppliers in Denmark.*	*EKF's object is to facilitate Danish companies' export and internationalisation opportunities, participation in the global value chain and cultivation of new markets through internationally competitive finance and risk cover.*
Estonia		
Finland https://www.finnvera.fi/eng/export-and-internationalisation/finnvera-as-an-export-finance-provider	*The Finnish content is considered significant if it accounts for more than 27% of the export project's value (including local costs) or 33% of the export credit amount.*	
France		

ECA	National content statement	GVC/value-added reference
Greece		
Hungary https://exim.hu/en/conditions/eximbank-conditions/bank-regulations/certification-of-the-hungarian-content	*In the case of goods export, the regulations stipulate that* at least a half *of the content of the delivered goods should be of Hungarian origin.*	
India https://www.eximbankindia.in/assets/pdf/default/BC-NEIA%20Booklet%20English-February%2013,%202020.pdf https://www.eximbankindia.in/Assets/Dynamic/PDF/Publication-Resources/ResearchPapers/121file.pdf https://www.eximbankindia.in/buyers-credit	*Goods and services for minimum 75% of the value of goods and services covered under the Scheme must be of sourced from India.* *buyer's credit that we provide can only be used for the export of Indian goods or services.*	*Exim Bank today plays an important role in partnering Indian industries in their globalisation efforts … upward movement in the value chain of its export performance.* *greater integration into the global value chains (GVCs) and focus on higher technology intensive exports is but important.*
Israel		
Italy		
Luxembourg Annual report 2019	*Official support for export activities is subject to the following conditions: interest to the Luxembourg economy*	
Mexico https://www.bancomext.com/en/about-bancomext/bancomext/ https://www.bancomext.com/staticcontent/informe-anual-2016/dist/index-en.html		*Bancomext's main functions include: Integrating Mexican companies to global value chains.* *BANCOMEXT continues to foster the inclusion of more Mexican companies in the value chain of the automotive sector, aiming to increase national value, increasing labor while supporting the growth of the national economy.*
Netherlands https://atradiusdutchstatebusiness.nl/en/article/frequently-asked-questions.html	*At least 20% of the total contract value is for Dutch goods and/or services*	
New Zealand https://exportcredit.treasury.govt.nz/about-us https://exportcredit.treasury.govt.nz/news/government-boosts-trade-finance-support-exporters	*One important pre-condition for our support is that there are New Zealand economic benefits arising from the underlying exports.*	*This technical amendment will enable the NZECO to more effectively support a number of NZ companies who are pursuing opportunities as part of the global supply chain, either here or through NZ subsidiaries that they have established overseas… The Government has introduced flexibility for the NZECO to support transactions where there are benefits to New Zealand over and above the level of NZ value-added content.*
Norway		
Poland https://www.kuke.com.pl/en/supporting-exports/polish-content-guidelines/	*maximum of 60% - for transactions with a payment term of at least 2 years.*	
Russia		
South Africa https://www.ecic.co.za/Products/Export-Credit-Insurance	*The requirement is that at least 70% SA content on the ECIC supported loan amount be achieved.*	

ECA	National content statement	GVC/value-added reference
Spain https://www.cesce.es/es/buscador?q=national+content	*As a general rule, the amount of Spanish goods and/or services being exported must represent at least 50% (previously 70%) of the amount covered by Cesce.*	
Sweden https://www.ekn.se/en/what-we-do/faq/ https://www.ekn.se/en/magazine/trade/smiling-curve/	*If your transaction has a Swedish export connection and a Swedish interest, it can be guaranteed by EKN, even if the product is made in another country. It may for example be a transaction that indirectly leads to Swedish export.*	*The value of a product is not just created in the manufacturing stage – research and development, as well as marketing and design, are also crucial components in today's increasingly globalized value chains…For a deal to be eligible for support from EKN, it has to benefit Swedish business interests, which may refer to a certain stage of the value-adding process even as other production stages have been outsourced abroad.*
Switzerland https://www.serv-ch.com/en/products/requirements-for-acceptance-of-the-insurance/	*The export transaction involves goods and services that are of Swiss origin or contain an adequate share of Swiss content. The foreign content of supplied goods or services should not exceed 80 (previously 50) percent of the order value.* *(In order to mitigate the negative consequences of the government's COVID-19 containment measures on the Swiss export industry, the Federal Council has lowered the requirements regarding the amount of Swiss content)*	*…the adaptation of our cover policy to the structural change in export business was even more fundamental in nature. This is increasingly taking place within the framework of globalised value chains, with a decline in value-creating activities in Switzerland and ever more complex contractual and financing structures for insured export transactions.*
Turkey https://eximbank.gov.tr/en/product-and-services/buyer-s-credits/international-project-loans https://www.eximbank.gov.tr/interaktif-faaliyet-raporlari/2021/en/m-1-13.html	*Exports from third countries cannot be subject to our financing. However, we can provide support up to 100% of Turkish exports of goods and services.*	*Turk Eximbank is transforming into a structure that proactively supports the exporters that generate high added-value for the national economy… in view of the changes in global supply chains and trends such as digital and green transformation, it is targeted to increase the share held in global trade by supporting high value-added and medium/high technology sectors…*
United Kingdom https://www.great.gov.uk/how-we-assess-your-project/	*We understand the need for flexibility when overseas buyers are considering procurement and sourcing options, so we can support contracts where up to 80% of the content is sourced from outside the UK. We also help overseas buyers access the UK supply chain to maximise the level of UK content within the project.*	
United States https://www.exim.gov/policies/content/medium-and-long-term	*100% of the U.S. content in all eligible goods and services in the U.S. export contract*	*Expand EXIM support along the supply chain, including in transformational export areas and clean tech export sectors to support U.S. jobs*

The references related to national content / national benefit clearly highlight the differing views, with ECAs either emphasising a specific percentage of content or having a more loosely worded reference to national interest or economic benefit. ECAs representing countries like Australia, Austria, Czech Republic, Denmark, Finland, Germany, Hungary, India, Netherlands, Poland, South Africa, Switzerland, Turkey, United Kingdom and United States all reference a specific percentage. It must be noted that this percentage varies from as low as 20% on the one side of the spectrum up to 100% on the other side, confirming the hesitancy of several ECAs to relax their national content policies and contrary to my initial expectations. On the other hand, countries such as Belgium, Canada, Luxembourg, New Zealand and Sweden emphasise the national interest or economic benefit approach.

There tended to be slightly less referencing within the website to GVCs and value-adding. However, Australia, Canada, Denmark and Mexico acknowledged that their role was to support their companies' participation and integration within GVCs. New Zealand explicitly connected their New Zealand benefit approach to GVCs. Switzerland and the United Kingdom also referenced a link between their national content policy and GVCs, with the United Kingdom noting the need for flexibility and Switzerland noting the reduction in Swiss value-creating activities within the context of exports taking place within GVCs. Conversely, Austria recognises the occurrence of global sourcing but states that that is precisely why they need to maintain a high national content policy.

Various ECAs also reference value-adding activities. Sweden is particularly clear on this point, referencing the smiling curve and confirming their contentedness in supporting transaction that benefit Sweden when production occurs outside of Sweden while value-adding activities such as R&D, marketing and design occur within Sweden. Turkey suggest that they are revising their strategies to stimulate activity in the higher value adding-activities. Similarly, India refers to the upward movement within value chains of their export performance.

Having conducted this more systematic review of the websites of ECAs, it remained clear to me that it was not unreasonable to have anticipated greater relationships between the ECAs approach to national content and GVC participation. Next, I reviewed the questionnaire

responses received from the ECAs, again with the intention of understanding whether my assumption regarding national content policies and GVCs was reasonable.

5.4 EXPORT CREDIT AGENCIES CONFIRM THE INFLUENCE OF GVCS ON NATIONAL CONTENT POLICY

As part of the national content policy data gathering process, questionnaires were sent to the full population of ECAs. See Appendix D for details of the questionnaire. In addition to requesting respondents to provide details of their national content policies, the ECAs were requested to indicate the main drivers of any changes that had been made to their national content policies. A 10-point Likert scale was utilised, and respondents were requested to highlight the level of influence from factors including:

- global value chains;
- in response to other ECAs;
- lack of diversification in their local economy;
- in response to requests from the large exporters within their country;
- job creation;
- other.

The questionnaire therefore provides some understanding of why ECAs are behaving in the way they do, or at least why they say they are behaving in the way they do.

Table 5-2 List of ECAs that responded to the questionnaire

Responses Received	Non-Responses	Declined
Austria	Bulgaria	Australia
Belgium	Czech Republic	Canada
China	Egypt	Japan
Croatia	Greece	
Denmark	Hungary	
Estonia	India	
Finland	Indonesia	
France	Israel	
Germany	Jordan	
Italy	South Korea	
Luxembourg	Latvia	
Mexico	Malaysia	
Netherlands	Oman	
New Zealand	Poland	
Norway	Portugal	
South Africa	Romania	
Spain	Russia	
Sweden	Saudi Arabia	
Switzerland	Serbia	
Turkey	Singapore	
United Kingdom	Slovak Republic	
United States	Slovenia	
	Thailand	
	Taiwan	

The responses received from the questionnaire provide valuable insight into how and why ECAs and their governments say they are adjusting their national content policies. In addition to providing ratings of the level of importance of the factors contributing to changing national content policies, a number of the respondents provided additional qualitative commentary which further enhances the information that I have on GVCs and government policy.

With the exception of one ECA, which had increased its national content policy, all ECAs had decreased their national content requirements when they last made a change to the policy. The one ECA that reversed the downward trend in national content policy and actually increased it, emphasised maximising job creation as the primary reason for

reversing the downward movement in national content policy. Even though this was the only government that had increased the national content requirement, the importance of job creation emerged as an important theme more generally.

ECAs were asked to respond on a scale of “0” to “10” the reasons for ECAs changing their national content policies to their current policy, with “0” being not at all a reason and “10” a significant reason. GVCs having influenced exporters to source products globally in order to remain internationally competitive scored the highest average score at 7.94, with the structure of the economy not being diversified enough to source large quantities of content from within the exporting country the next at 6.29, closely followed by maximising jobs within the exporting country at 6.12. Of the options provided, in response to demands from large, key exporters scored the lowest at 3.88. The responses received from the various ECAs confirm the view that ECAs themselves are of the opinion that GVCs are indeed influencing their national content policies. Table 5-3 summarises the scores received.

Table 5-3 Summary of scores per reason based on questionnaire responses

	Average score	No. of 10s	No. of high scores (7 – 10)	No. of low scores (0 – 5)
Global value chains have resulted in exporters sourcing products globally in order to remain internationally competitive.	7.94	8	14	3
In response to other Export Credit Agencies reducing their national content policies.	5.41	3	9	8
The structure of our economy is not diversified enough to allow our exporters to source large quantities of content from within our country.	6.29	5	8	8
In response to large, key exporters within our economy requesting us to do so.	3.88	2	5	11
The current policy was implemented to maximise jobs in our country.	6.11	8	8	8

A full summary of the responses received can be viewed in Appendix C.

The results would seem to suggest that ECAs who had lower national content policies tended to emphasise GVCs and lack of diversification as the primary drivers for determining national content policies, while ECAs with higher national content policies tended to emphasise maximising jobs. Of the ten ECAs with national content of 40% or higher, seven scored maximising jobs a 10. Of the three ECAs who have adopted a national interest

approach, all three scored GVCs a 10 and the remaining four low national content percentage ECAs scored three 9s and an 8.

GVCs and job creation scored an equal number of “10” scores, well above the other potential factors influencing the change in national content policy of ECAs. GVCs overwhelmingly had the highest number of high scores, with fourteen respondents scoring GVCs a 7 or more as an influencing factor in their national content decision making criteria. The continuing importance of job creation however remains clear.

As has been highlighted, a larger portion of questionnaire responses were received from OECD and high-income countries, which may contribute to some bias in the summary of questionnaire responses. Although, this bias may be somewhat limited, considering that responses were received from ECAs representing a reasonable spread of national content policies covering the full range from national interest to 100% national content.

Several ECAs provided additional commentary within the questionnaires. Certain ECAs recognise the importance of focussing on the value-adding activities within GVCs. One ECA confirmed that if the national content is low but the transaction may still be of benefit to the country, then they focus on the national interest angle. In such circumstances they do not look where production is located but where all processes (such as R&D) in the value chain are located.

Similarly, another ECA emphasised in their response the significance of focusing on the higher value-adding activities. This ECA’s exporters were focussing on services such as project management, design and ICT, while outsourcing a significant portion of manufacturing to offshore companies. The country’s trade policy wished to increase the number of high-value added, high-technology and ICT companies and therefore in support of this, the ECA’s national content policy was removed from a set percentage to an economic benefit approach.

Two ECAs representing smaller economies recognise the challenges that their countries and companies have in competing in the global trade arena with larger players. These ECAs believe that a flexible approach to national content can enhance the competitiveness of their

companies. The one ECA noted within their questionnaire response that they are a small country with specialised companies, surrounded by much larger countries with large companies. They recognise that they needed a policy that facilitated their companies' ability to focus on products with high value-added, while sourcing many basic components from manufacturing companies in neighbouring countries with whom they have long standing relationships. Another ECA represents an emerging market with high backward GVC integration and has reduced their national content policy to a relatively low 30%. In their questionnaire response the automobile and in particular the bus manufacturing sector was referred to. The country's primary manufacturing contribution to the sector is the manufacture of auto parts, which are combined with the import of bus inputs from industrialised countries like the USA and Germany, with these inputs making up 50% and 40% respectively. The country recognises the challenges of competing with more developed countries like the USA and Germany, but wishes to maintain its competitiveness and involvement in exports by ensuring that its ECA is flexible enough to support its exporters by recognising their involvement within GPNs.

Some ECAs recognise the influence of GVCs but have not reduced their national content policy to the extent of other ECAs fearing the impact that this would have on jobs. One ECA has a relatively high national content policy of 70%, but also scored GVCs a relatively high 8. Their national content policy was revised down in early 2000s and is currently under review, with the possibility of more flexible rules being implemented. The ECA commented that while they recognise the importance of GVCs, for the time being they maintain a relatively high national content policy partly because of a concern as to the impact that it has on jobs. Another ECA also attributes their reduced national content policy directly to GVCs, confirming that their national content policy was reduced in order to accommodate the needs of their exporters to utilise GVCs. They have, however, also maintained their national content at a relatively higher value, 51%, and have noted the importance of preserving national jobs.

In summary, the review of the questionnaire responses from ECAs further re-enforces my view that it was not unreasonable to have assumed that there would be a relationship between the national content policies of ECAs and their country's degree of participation within GVCs.

5.5 TESTING THE VARIABLES

Having ascertained that it was reasonable to have assumed a link between national content policy and GVC participation, I felt it necessary to test whether my results were in some way connected to my choice of variables. First, I tested for interaction effects, then I replaced the value-added variables with an R&D variable and then two variables associated with value-added manufactures.

5.5.1 TESTING FOR INTERACTION EFFECTS

I needed to confirm that the inclusion of the control variables of GDP and GDP per capita were not having an interaction effect on my GVC participation and value-adding variables. I therefore considered model 2 and established various interaction variables involving GDP and GDP per capita. In this model I considered four interaction variables:

- GDP X Forward Participation
- GDP X Backward Participation
- GDP per capita X Forward Participation
- GDP per capita X Backward Participation

The results of model 2 including the interaction variables, produced no interaction variables that were significant and therefore I was able to conclude that GDP and GDP per capita were not moderating the effects of the GVC participation variables. This model was not considered a good fit in terms of both the Omnibus test of Model Coefficients (sig. - .145) and the Hosmer and Lemeshow Test (sig. - .007) and the predictability was the same as the model without interaction variables. Having clarified that there were no moderating concerns and due to the model not being a good fit, I proceeded without the inclusion of these interaction variables.

Table 5-4 Binary logistics regression results for model 2 including interaction variables

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Step 1[a]	GDP Adjusted in US$	.220	3.339	.004	1	.948	1.246	.002	867.041
	GDP per Capita Adjusted in US$	.333	1.432	.054	1	.816	1.395	.084	23.078
	Forward GVC Participation	-.001	.245	.000	1	.997	.999	.618	1.615
	Backward GVC Participation	.159	.151	1.110	1	.292	1.172	.872	1.576
	Forward GVC Participation by GDP Adjusted in US$	.024	.111	.048	1	.827	1.024	.825	1.272
	Backward GVC Participation by GDP Adjusted in US$	-.020	.094	.046	1	.829	.980	.815	1.178
	Forward GVC Participation by GDP per Capita Adjusted in US$	-.017	.048	.132	1	.716	.983	.895	1.080
	Backward GVC Participation by GDP per Capita Adjusted in US$	-.016	.025	.399	1	.528	.985	.938	1.033
	Constant	-2.709	7.188	.142	1	.706	.067		

a. Variable(s) entered on step 1: GDP Adjusted in US$, GDP per Capita Adjusted in US$, Forward GVC Participation, Backward GVC Participation, Forward GVC Participation * GDP Adjusted in US$, Backward GVC Participation * GDP Adjusted in US$, Forward GVC Participation * GDP per Capita Adjusted in US$, Backward GVC Participation * GDP per Capita Adjusted in US$.

I then conducted the same process, considering interaction variables associated to the value-adding services variables. In this model I considered six interaction variables:

- GDP X Indirect domestic services value-added content of total exports
- GDP X Direct domestic services value-added content of total exports
- GDP X Indirect domestic services value-added content of exports of manufactures
- GDP per capita X Indirect domestic services value-added content of total exports
- GDP per capita X Direct domestic services value-added content of total exports
- GDP per capita X Indirect domestic services value-added content of exports of manufactures

Table 5-5 Binary logistics regression results for model 3 including interaction variables

								95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	GDP Adjusted in US$	-16.378	11.462	2.042	1	.153	.000	.000	440.477
	GDP per Capita Adjusted in US$	-1.549	2.669	.337	1	.562	.213	.001	39.774
	Forward GVC Participation	.101	.168	.362	1	.548	1.106	.796	1.536
	Backward GVC Participation	.005	.131	.002	1	.967	1.005	.777	1.301
	Indirect Domestic Services VA of Total Exports	-1.781	1.568	1.291	1	.256	.168	.008	3.639
	Direct Domestic Services of Total Exports	-.415	.474	.766	1	.381	.660	.261	1.673
	Indirect Domestic Services VA of Export of Manufactures	1.051	1.154	.829	1	.362	2.859	.298	27.431
	GDP Adjusted in US$ by Indirect Domestic Services VA of Total Exports	1.813	1.164	2.426	1	.119	6.128	.626	59.984
	Direct Domestic Services of Total Exports by GDP Adjusted in US$	.466	.307	2.295	1	.130	1.593	.872	2.909
	GDP Adjusted in US$ by Indirect Domestic Services VA of Export of Manufactures	-1.037	.698	2.209	1	.137	.354	.090	1.392
	GDP per Capita Adjusted in US$ by Indirect Domestic Services VA of Total Exports	.114	.176	.417	1	.518	1.121	.793	1.584
	Direct Domestic Services of Total Exports by GDP per Capita Adjusted in US$	.029	.061	.220	1	.639	1.029	.913	1.160
	GDP per Capita Adjusted in US$ by Indirect Domestic Services VA of Export of Manufactures	-.070	.183	.147	1	.701	.932	.650	1.335
	Constant	14.235	18.414	.598	1	.439	1521179.172		

a. Variable(s) entered on step 1: GDP Adjusted in US$, GDP per Capita Adjusted in US$, Forward GVC Participation, Backward GVC Participation, Indirect Domestic Services VA of Total Exports, Direct Domestic Services of Total Exports, Indirect Domestic Services VA of Export of Manufactures, GDP Adjusted in US$ * Indirect Domestic Services VA of Total Exports , Direct Domestic Services of Total Exports * GDP Adjusted in US$, GDP Adjusted in US$ * Indirect Domestic Services VA of Export of Manufactures , GDP per Capita Adjusted in US$ * Indirect Domestic Services VA of Total Exports , Direct Domestic Services of Total Exports * GDP per Capita Adjusted in US$, GDP per Capita Adjusted in US$ * Indirect Domestic Services VA of Export of Manufactures .

This model includes interaction variables involving GDP and GDP per capita and the various value-added services variables utilised in model 3. Again, none of the interaction variables were significant, enabling me to conclude that GDP and GDP per capita were not moderating the other variables. This model was not considered a good fit in terms of both the Omnibus test of Model Coefficients (sig. -.177) and the Hosmer and Lemeshow Test (sig. -.003), however, the predictability did improve somewhat to 90.3%. Having clarified that there were no moderating concerns and due to the model not being a good fit, I proceeded without the inclusion of these interaction variables in the other models that appear later.

5.5.2 SUBSTITUTING THE VALUE-ADDED SERVICES VARIABLES WITH R&D

The literature regarding value-added activities and various measurements of value-added made repeated reference to R&D. Furthermore, a number of ECAs when referring to value-added also tended to reference R&D as a primary example of value-added. Therefore, I decided to reconsider the analysis utilising R&D data (R&D as a percentage of GDP) instead of the GVC value-added data. Including R&D with both the control variables and the GVC participation variables raised no multicollinearity concerns.

Table 5-6 Correlation matrix including R&D

	High / Low National Content	GDP in US$ millions	GDP per Capita in US$	Forward GVC Participation	Backward GVC Participation	R&D as a % of GDP
High / Low National Content	1					
GDP in US$ millions	.251	1				
GDP per Capita in US$	-.419*	-.012	1			
Forward GVC Participation	-.155	.135	.114	1		
Backward GVC Participation	.013	-.380*	.263	-.495**	1	
R&D as a % of GDP	-.141	.198	.436*	.202	-.119	1

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Estimating Pearson Correlation suggested no significant correlation between R&D and national content with a score of -.141.

Next, I processed a binary logistics regression analysis, re-estimating model 3 replacing the value-added services variables with R&D.

Table 5-7 Binary logistic regression results for model 3 re-estimating with R&D

								95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	GDP Adjusted in US$	.312	.288	1.171	1	.279	1.366	.776	2.404
	GDP per Capita Adjusted in US$	-.546	.264	4.256	1	.039	.579	.345	.973
	Forward GVC Participation	-.035	.091	.151	1	.698	.965	.807	1.154
	Backward GVC Participation	.069	.060	1.332	1	.248	1.071	.953	1.205
	R&D as a % of GDP	.272	.487	.313	1	.576	1.313	.506	3.410
	Constant	.120	2.881	.002	1	.967	1.127		

a. Variable(s) entered on step 1: GDP Adjusted in US$, GDP per Capita Adjusted in US$, Forward GVC Participation, Backward GVC Participation, R&D as a % of GDP.

This model therefore included the control variables, the GVC participation variables and R&D to represent the value-adding activities. The model was a good fit in terms of the Omnibus Test with a significance score of .040, but was not a good fit in terms of the Hosmer and Lemeshow Test (.026). The predictability score was 83.9% which was the identical result to model 3 with the value-adding services variables, while model 2 produced a

predictability score of 87.1%. The only variable that was significant was GDP per capita. Therefore, adding R&D to the control and GVC participation variables, resulted in a reduction in predictability from model 2, the same result to when I used the value-adding services variables in model 3.

In summary substituting the value-adding variables with R&D resulted in very similar results to before, reconfirming that the national content policies of ECA's appears to be more a factor of what I had presumed was simply a control variable, GDP per capita. Although the results were affected to a minor degree by: GVC participation, they were certainly not a factor of the value-adding activities.

Again, I tested for interaction effects and concluded that GDP and GDP per capita were not moderating the R&D variable as none of the interaction variables (GDP X R&D; GDP per capita X R&D) were significant.

Table 5-8 Binary logistics regression model 3 with R&D and interaction variables

								95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	GDP Adjusted in US$	-2.880	1.687	2.912	1	.088	.056	.002	1.534
	GDP per Capita Adjusted in US$	-1.636	.873	3.515	1	.061	.195	.035	1.077
	Forward GVC Participation	-.043	.104	.169	1	.681	.958	.782	1.174
	Backward GVC Participation	.069	.076	.814	1	.367	1.071	.922	1.244
	R&D as a % of GDP	-3.317	2.089	2.523	1	.112	.036	.001	2.174
	GDP Adjusted in US$ by R&D as a % of GDP	1.690	.998	2.868	1	.090	5.420	.767	38.325
	GDP per Capita Adjusted in US$ by R&D as a % of GDP	.520	.359	2.097	1	.148	1.682	.832	3.399
	Constant	7.072	5.175	1.867	1	.172	1177.999		

a. Variable(s) entered on step 1: GDP Adjusted in US$, GDP per Capita Adjusted in US$, Forward GVC Participation, Backward GVC Participation, R&D as a % of GDP, GDP Adjusted in US$ * R&D as a % of GDP, GDP per Capita Adjusted in US$ * R&D as a % of GDP .

5.5.3 SUBSTITUTING THE VALUE-ADDED SERVICES VARIABLES WITH VALUE-ADDED MANUFACTURES VARIABLES

Although I believed that my choice of variables to measure value-adding activities was sound, I was concerned that my focus on services may have been biased to a certain economic structure. I, therefore, reprocessed the analysis substituting the value-adding services variables with two variables associated with value-added manufactures. Specifically,

- Domestic value-added within manufactures.
- Foreign value-added within manufactures.

Including these variables with both the control variables and the GVC participation variables raised no multicollinearity concerns.

Table 5-9 Correlation matrix including domestic and foreign value-added manufactures

	High / Low National Content	GDP in US$ millions	GDP per Capita in US$	Forward GVC Participation	Backward GVC Participation	Domestic Manufactures	Foreign Manufactures
High / Low National Content	1						
GDP in US$ millions	.251	1					
GDP per Capita in US$	-.419*	-.012	1				
Forward GVC Participation	-.155	.135	.114	1			
Backward GVC Participation	.013	-.380*	.263	-.495**	1		
Domestic VA Manufactures	.393*	.415*	-.416*	-.091	-.242	1	
Foreign VA Manufactures	.286	-.248	-.328	-.325	.553**	.254	1

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Estimating Pearson Correlation suggested no significant correlation between foreign value-added manufactures and national content with a score of .286. However, it did suggest a significant correlation between domestic value-added manufactures and national content at the .005 level with a score of .393.

Next, I processed a binary logistics regression analysis, re-estimating model 3 replacing the value-added services variables with domestic and foreign value-added manufactures.

Table 5-10 Binary logistic regression results for model 3 re-estimated with value-added manufactures

								95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	GDP Adjusted in US$	.241	.208	1.350	1	.245	1.273	.847	1.912
	GDP per Capita Adjusted in US$	-.458	.254	3.248	1	.072	.633	.384	1.041
	Forward GVC Participation	-.041	.095	.185	1	.667	.960	.798	1.156
	Backward GVC Participation	.078	.101	.608	1	.436	1.082	.888	1.318
	Domestic Manufactures	.110	.105	1.116	1	.291	1.117	.910	1.371
	Foreign Manufactures	-.031	.245	.016	1	.899	.969	.600	1.566
	Constant	-1.825	3.438	.282	1	.596	.161		

a. Variable(s) entered on step 1: GDP Adjusted in US$, GDP per Capita Adjusted in US$, Forward GVC Participation, Backward GVC Participation, Domestic Manufactures, Foreign Manufactures.

This model therefore included the control variables, the GVC participation variables and domestic and foreign value-added manufactures to represent the value-adding activities. The model was a good fit in terms of the Omnibus Test with a significance score of .044, and it was a good fit in terms of the Hosmer and Lemeshow Test (.195). The predictability score was 83.9% which was the identical result to model 3 with the value-adding services variables, while model 2 produced a predictability score of 87.1%. None of the variables were significant with the GDP per capita variable being the closest at .072. Therefore, adding domestic and foreign value-adding manufactures to the control and GVC participation variables, resulted in a reduction in predictability from model 2 and the same result to when I used the value-adding services variables and the R&D variable in model 3.

In summary substituting the value-added services variables with value-added manufactures resulted in very similar results to before, reconfirming that the national content policies of ECA's appears to be primarily a factor of GDP per capita and to a minor degree, GVC participation.

Again, I tested for interaction effects and concluded that GDP and GDP per capita were not moderating the value-added manufactures variables as none of the interaction variables (GDP X domestic VA manufactures; GDP X foreign VA manufactures; GDP per capita X domestic VA manufactures; GDP per capita X foreign VA manufactures) were significant.

Table 5-11 Binary logistics regression model 3 with value-added manufactures and interaction variables

							95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
	GDP Adjusted in US$	8.703	8.173	1.134	1	.287	6021.394	.001	54547974193.495
	GDP per Capita Adjusted in US$	-10.602	5.824	3.314	1	.069	.000	.000	2.255
	Forward GVC Participation	-.488	.322	2.299	1	.129	.614	.327	1.154
	Backward GVC Participation	.309	.325	.902	1	.342	1.362	.720	2.576
	Domestic VA Manufactures	-.524	.390	1.804	1	.179	.592	.276	1.272
	Foreign VA Manufactures	-.940	.904	1.081	1	.299	.391	.066	2.299
	Domestic VA Manufactures by GDP Adjusted in US$	-.095	.114	.693	1	.405	.910	.728	1.137
	Domestic VA Manufactures by GDP per Capita Adjusted in US$	.241	.144	2.796	1	.094	1.273	.959	1.689
	Foreign VA Manufactures by GDP Adjusted in US$	-.692	.661	1.097	1	.295	.501	.137	1.828
	Foreign VA Manufactures by GDP per Capita Adjusted in US$	.481	.293	2.690	1	.101	1.618	.910	2.875
	Constant	24.952	16.637	2.249	1	.134	68598936037.517		

a. Variable(s) entered on step 1: GDP Adjusted in US$, GDP per Capita Adjusted in US$, Forward GVC Participation, Backward GVC Participation, Domestic Manufactures, Foreign Manufactures, Domestic Manufactures * GDP Adjusted in US$, Domestic Manufactures * GDP per Capita Adjusted in US$, Foreign Manufactures * GDP Adjusted in US$, Foreign Manufactures * GDP per Capita Adjusted in US$.

5.6 CONCLUSION OF CONFIRMING THE ANOMALY

My analysis of trying to understand the relationships between national content policies and GVC integration variables, resulted in a minor association with GVC participation (as evidenced by the improved predictability of the model) and no relationship with the value-

added activities. The analysis revealed that GDP per capita appeared to be the primary driver. This result surprised me and therefore to confirm whether I was reasonable in my surprise, I conducted a more systematic review of the websites and questionnaire responses of the ECAs. In addition, I re-estimated the analysis substituting the value-adding services variables with an R&D variable and two variables associated with value-added manufactures.

The review of the websites and questionnaires confirmed my view that it was not unreasonable to have expected to have found a stronger link between the national content policies of ECAs and the various GVC participation variables. Furthermore, re-estimating my analysis with alternative measures of value-added activities, and taking interactions into account, once again validated my original findings with a nearly identical result. I was therefore comfortable that I was reasonably justified in my surprise of the findings. In the following section, I explain what I did to consider a number of alternative options that may better explain the results.

6 CHAPTER 6: GENERATING POSSIBLE EXPLANATIONS

6.1 INTRODUCTION

According to scholars of abduction, the phase after the confirmation of the anomaly is the generation of hunches (Sætre & Van De Ven, 2021). In trying to make sense of the findings, I interrogated various key elements identified in the research to date, specifically focusing on job creation and country competitiveness.

6.2 JOB CREATION

Throughout the research, from the literature review to the websites of the ECAs to the ECA questionnaire responses, job creation was juxtaposed as potentially in tension with GVCs. Therefore, an initial hunch that I had was that if GVC participation was not specifically associated with the national content policy of ECAs, then possibly employment levels and specifically unemployment rates were more associated.

The literature review made specific reference to the importance of job creation and in fact emphasised that the original objective for establishing ECAs was to develop jobs within the exporting country (Bischoff, 2014; Drysdale, 2014; Singh, 2010; Klasen, 2011). These earlier scholars also emphasised the close connection between job creation and high national content policies. In light of the advancement of GVCs and the increasing reduction in national content requirements, including in a number of cases a shift from national content to national interest, I initially expected a declining reference to the importance of job creation. However, the responses to my questionnaires repeatedly underlined that job creation was still important. This insight about the continued importance of job creation guided me in generating possible explanations: ECA national content policy, despite the radically changed trading environment within which ECAs now operate, might still be guided by its initial concern with job creation.

6.2.1 WHAT ECAS CLAIM ON THEIR WEBSITES

Again, I went back to the websites of the ECAs in order to conduct a more systematic review of what ECAs were saying about job creation, and report on a similar basis as before. It was clear that job creation is still an important dimension of the ECA mission.

Table 6-1 Extracts from ECA websites on job creation

ECA	Jobs Creation
Australia https://www.exportfinance.gov.au/our-organisation/about-us/	*As the Government's export credit agency, we are an integral part of Australia's international trade and investment focus – supporting businesses, jobs and the community.* *We believe reporting total Australian-based employment data is a useful measure of the impact of our financings on Australian jobs and prosperity… our financings provide critical funding support to help safeguard employment for Australians. We capture the number of people our customers employ in Australia. In 2020–21, the 139 customers we supported employed 27,591 people (2020-2021 annual report).*
Austria https://www.oekb.at/en/oekb-group/oekb-group-overview.html	*Export and invest abroad – this allows Austria's companies to grow and secure jobs at home.*
Belgium	
Canada https://www.edc.ca/en/about-us.html	*This in turn, creates jobs and increases prosperity at home.* *Canadian exports, direct investment abroad and domestic business facilitated by EDC supported an estimated $64 billion in Canadian gross domestic product (GDP) and over 510,000 jobs.*
China	
Croatia	
Czech Republic https://www.egap.cz/en/state-support-export	*Exports realized with state support … mean jobs for hundreds and thousands of people and in some cases … support employment in regions, retain highly qualified employees…*
Denmark https://ekf.dk/en/about-ekf/ekf-s-organisation/ekf-s-work-for-danish-export-in-two-minutes	*Economic impact on the Danish society: Prosperity for Danish export creates development and jobs in Denmark...Each year EKF helps to secure thousands of jobs in Denmark and orders to Danish companies worth billions....Your export transactions must also create value for Denmark, for instance by way of jobs and revenue.*
Estonia	
Finland	
France	
Germany https://www.agaportal.de/_Resources/Persistent/3/4/a/4/34a4dfe70f851902a14d59ce0809ed95747835b5/e_pi_finanzkreditdeckung.pdf	*Both promotion instruments play an important role in fostering economic growth as well as in protecting and creating jobs.*
Greece	
Hungary	
India	
Israel	
Italy	

ECA	Jobs Creation
Luxembourg	
Mexico https://www.bancomext.com/en/about-bancomext/bancomext/	*The purpose of* Banco Nacional de Comercio Exterior *(Bancomext) is to contribute to development and job creation in Mexico, by financing the country's foreign trade.*
Netherlands	
New Zealand https://www.beehive.govt.nz/release/govt-boosts-trade-finance-support-exporters	*The Government is focused on lifting New Zealand's exports, so we can build a faster growing economy with higher incomes and more real jobs*
Norway https://www.eksfin.no/en/about/	*… Norway that contribute to exports, or other transactions that help to generate value and employment within Norway.*
Poland	
Russia	
South Africa https://www.ecic.co.za/about-us/vision-and-mission/ https://www.ecic.co.za/wp-content/uploads/2021/03/ECICCorporateProfile.pdf	*Its overarching goal – and its mandate from the South African government as its sole shareholder – is to make South African exporters attractive to international buyers to attract foreign income, stimulate domestic economic growth and create local jobs.* *The delivery of our mandate is aligned with South Africa's national imperatives of inclusive economic growth, job creation and competitiveness in global markets, especially in Africa and other emerging markets that are considered as too risky for conventional insurers.*
Spain	
Sweden https://www.ekn.se/en/magazine/trade/smiling-curve/	*It is important to Sweden that we safeguard jobs that contribute a high amount of value-added. They bring positive effects to the country as a whole and strengthen our ability to compete in the global markets for talent and entrepreneurship*
Switzerland https://www.serv-ch.com/fileadmin/Files/PDF/online-schalter/uber-die-serv/SERV-Kompakt_e.pdf https://www.serv-ch.com/en/organisation/about-serv/ https://www.serv-ch.com/en/organisation/mission-statement/	*These mandates secure Swiss jobs both in the export industry and the industries that supply them.* *SERV helps Swiss exporters compete internationally and create as well as maintain jobs in Switzerland.* *We create and retain jobs in Switzerland and help the Swiss export industry to compete internationally.*
Turkey https://www.eximbank.gov.tr/content/files/04749fab-6412-4455-b736-6e40f4883181/annual-report-2021	*Supporting Highly Competitive Sectors Harboring Production and Employment Potential*
United Kingdom https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1092909/july_2022_UKEF_product_brochure_all_products.pdf https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/995841/UK_Export_Finance_Annual_Report_and_Accounts_2020_to_2021.pdf	*72,000 UK jobs supported by UKEF in 2021-22* *Capturing the benefits of exporting and international trade opportunities is vital – helping to support job creation, wage growth and levelling up the economy across the regions and nations of the UK.* *supporting jobs and reinvigorating our industrial heartlands.* *Our work means that:– more jobs in the UK are supported* *"Trade is an incredibly powerful way to propel growth and create jobs as we recover from the pandemic. With one third of our economy being exports, support from UKEF can help the UK get a bigger slice of the global economic pie, secure jobs across the country and make the most of our newfound independence as a trading nation." Rt Hon Liz Truss MP, Secretary of State for International Trade and President of the Board of Trade*

ECA	Jobs Creation
United States https://www.exim.gov/about https://img.exim.gov/s3fs-public/managed-documents/MKG-EOV-6_agency_brochure_04DEC2020c.pdf https://img.exim.gov/s3fs-public/reports/EXIM+FY2022-2026+Strategic+Plan+FINAL.pdf	*…mission of supporting American jobs by facilitating the export of U.S. goods and services.* *In doing so, the agency levels the playing field for U.S. goods and services going up against foreign competition in overseas markets, so that American companies can create more good-paying American jobs.* *In the last decade, EXIM has supported more than 1.7 million jobs in all 50 states.* *EXIM supports job growth across the United States, including in diverse communities, through exports and aims to promote economic growth and revitalization in areas hit hard by historic economic circumstances.* *There has been an unprecedented transfer of manufacturing jobs overseas and EXIM is positioned to help reverse that trend by investing in U.S. manufacturing and supply chain capabilities that, in turn, support growth of good paying jobs.*

The review of the ECA websites confirms the importance placed on job protection and job creation. This would suggest that the potential impact of ECA policy on national jobs is likely to remain a key consideration in any policy setting decision. Approximately half of the ECAs made explicit reference to the importance of job creation. In fact, more ECAs referred to job creation on their websites than to GVCs. A number of ECAs even try and articulate the number of jobs their activities created. Three of the five national interest ECAs referred to job creation, as did three of the next five lowest national content ECAs. Somewhat surprisingly more national interest and the lowest national content policy ECAs referred to the importance of job creation than did the highest national content policy ECAs. This might be an attempt by the ECAs to justify their low national content policy by highlighting that they recognise the importance of job creation, or it might be that national interest is indeed understood as an important albeit indirect driver of jobs.

6.2.2 EXPORT CREDIT AGENCIES PERSPECTIVE OF JOB CREATION AS PER THE QUESTIONNAIRES

As highlighted in the preceding chapter, job creation featured prominently in the ECA questionnaire responses to the key influences of national content policies. Job creation had the third highest average after “GVCs”, and “the structure of our economy is not diversified enough”. Furthermore, job creation had a similar number of “10” scores to GVCs, reflecting its importance to a number of ECAs. What seemed clear from the questionnaire responses,

was that job creation was particularly important to the higher national content policy ECAs, with a number of these ECAs reporting that job creation was the major reason why they had not reduced their national content policies.

The prevalence of both GVCs and job creation as key factors requiring consideration emphasises the dilemma facing ECAs and governments. There seem to be two forces at play. On the one hand, participation within GVCs requires countries to release control of the full value chain and trust that the net gains will be positive. In order to support this, ECAs need to relax their national content policies. On the other hand, and despite the popular view within the literature that the wealth and income gains for a country are high (Costinot & Rodríguez-Clare, 2013; Gunnella et al., 2017; Kasahara & Lapham, 2013), the evidence suggests that there remains a lingering and significant fear amongst certain countries that the advancement of GVCs is undermining traditional manufacturing jobs and those countries with large manufacturing sectors or ambitions, tend to be reluctant to give in to these changing global trade dynamics and are holding tight onto their national content policies or at most only relaxing the policies marginally.

One of the ECA's in their response to my questionnaire succinctly highlighted the conundrum facing many governments, recognising that there are competing factors at play with the overriding results being unclear. Reflecting on this point, the ECA was of the view that by dropping national content rules, their exporters are likely to be more competitive and are likely to win more international projects, which will have a positive effect on domestic jobs. However, reduced national content rules per definition enables exporters to source cheaper products abroad that would have a negative impact on domestic jobs. The ECA was convinced that the overall impact on jobs would be positive in the event that national content was reduced, but they explained that they do not have any evidence to actually support this. Therefore, as a result, their national content policy had not reduced to the same extent as other countries.

ECAs that have reduced their national content policy tend to believe that their decision is contributing positively to job creation. An ECA that has reduced their national content policy to a very low level stated in their questionnaire response that revising downwards its national content policy had given their exporters more flexibility. They are convinced that their actions

have helped their exporters become more competitive, which in turn has supported the creation of jobs in their domestic economy. Despite the lower national content policy and the acceptance of input production elsewhere, another ECA still noted the importance of continuing to measure job creation. While some ECAs have been cautious to reduce national content in order to maximise job creation, this ECA's view was that it is necessary to reduce national content in order to maintain the country's position within GVCs and by doing so ensuring maximum job creation.

Considering the still prominent reference to job creation, I decided to explicitly consider unemployment in my data analysis.

6.2.3 RE-ESTIMATING THE MODELS USING UNEMPLOYMENT DATA

I wished to understand whether there was a closer statistical relationship between national content policy and GVC participation if unemployment data were also considered. Therefore, I re-estimated the correlations and binary logistics regression, but this time with unemployment data. In the regression analysis I build on the previous model that included the control variables, the GVC participation variables and the R&D variable. I decided to proceed with the R&D variable instead of the value-added services variables; as the results were the same, the models are easier to represent given a single variable as opposed to three value-added services variables and importantly the model 3 with value-added services was not considered a good fit, while the model 3 with R&D was considered a good fit (at least in terms of the Omnibus Test).

The unemployment data were sourced from the World Bank, and represented the most recent period (2021) for which country data were available when the data were sourced. The inclusion of unemployment rates did not raise any multicollinearity concerns.

The correlation between national content and unemployment was not significant (.267). The positive direction of the relationship is what one would have expected with higher unemployment being associated with higher national content.

Table 6-2 Correlation matrix including unemployment data

	High / Low National Content	GDP in US$ millions	GDP per Capita in US$	Forward GVC Participation	Backward GVC Participation	R&D as a % of GDP	Unemployment Rate
High / Low National Content	1						
GDP in US$ millions	.251	1					
GDP per Capita in US$	-.419*	-.012	1				
Forward GVC Participation	-.155	.135	.114	1			
Backward GVC Participation	.013	-.380*	.263	-.495**	1		
R&D as a % of GDP	-.141	.198	.436*	.202	-.119	1	
Unemployment Rate	.267	-.127	-.309	-.034	-.109	-.300	1

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

I then conducted the binary regression analysis building on my model 3 (which included the control variables, the GVC participation variables and the value-adding variable of R&D) by adding unemployment data.

Table 6-3 Binary logistics regression results including unemployment data

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Step 1[a]	GDP Adjusted in US$	.448	.445	1.014	1	.314	1.565	.655	3.740
	GDP per Capita Adjusted in US$	-.516	.264	3.826	1	.050	.597	.356	1.001
	Forward GVC Participation	-.010	.103	.009	1	.924	.990	.809	1.212
	Backward GVC Participation	.097	.070	1.933	1	.164	1.102	.961	1.262
	R&D as a % of GDP	.428	.518	.681	1	.409	1.534	.555	4.238
	Unemployment Rate	.199	.168	1.410	1	.235	1.221	.878	1.696
	Constant	-3.203	4.190	.584	1	.445	.041		

a. Variable(s) entered on step 1: GDP Adjusted in US$, GDP per Capita Adjusted in US$, Forward GVC Participation, Backward GVC Participation, R&D as a % of GDP, Unemployment Rate.

Based on the Omnibus Tests of Model Coefficients, the model was statistically significant, X^2 (6, N = 31) = 14.024. p > 0.05. The chi-square value was 14.024 with 6 degrees of freedom and a significance value of 0.029, below 0.05 confirming that the model is a good

fit. The chi-square value for the Hosmer-Lemeshow Goodness of Fit Test is 13.238 with a significance level of 0.104. The significance value is larger than 0.05, which therefore indicates support for our model. The model explains between 36.4% (Cox and Snell R square) and 48.5% (Nagelkerke R squared) of the variance in national content policy. The model correctly classifies 83.9% of cases, an improvement from the null model (51.6%). 87.5% of cases were correctly predicted as having high national content policies while 80.0% of cases were correctly predicted as having low national content policies. The model reflected a predictive capability the same as model 3. In this model, the GDP per capita variable was once again significant (.050).

The model confirmed a goodness of fit. However, adding unemployment data to the model did not improve the predictive capabilities of the model. Furthermore, unemployment did not contribute significantly to the model. In fact, once again the only significant variable was GDP per capita.

I also re-estimated the model creating two interaction variables (GDP x unemployment; GDP per capita X unemployment). No variables were significant.

Table 6-4 Binary logistics regression results including unemployment and interaction variables

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Step 1[a]	GDP Adjusted in US$	.415	1.390	.089	1	.765	1.514	.099	23.087
	GDP per Capita Adjusted in US$	.809	1.053	.590	1	.442	2.245	.285	17.673
	Forward GVC Participation	.025	.109	.053	1	.818	1.025	.829	1.268
	Backward GVC Participation	.119	.074	2.552	1	.110	1.126	.973	1.303
	R&D as a % of GDP	.561	.517	1.177	1	.278	1.752	.636	4.826
	Unemployment Rate	1.004	.684	2.156	1	.142	2.730	.715	10.427
	GDP Adjusted in US$ by Unemployment Rate	.008	.240	.001	1	.975	1.008	.630	1.612
	GDP per Capita Adjusted in US$ by Unemployment Rate	-.253	.202	1.558	1	.212	.777	.523	1.155
	Constant	-8.953	6.346	1.991	1	.158	.000		

a. Variable(s) entered on step 1: GDP Adjusted in US$, GDP per Capita Adjusted in US$, Forward GVC Participation, Backward GVC Participation, R&D as a % of GDP, Unemployment Rate, GDP Adjusted in US$ * Unemployment Rate , GDP per Capita Adjusted in US$ * Unemployment Rate .

6.3 COMPETITIVENESS

Having established that unemployment did not explain ECA policies, my next hunch was that the national content policies could somehow be related to competition. This was not something I had originally considered, or had directly asked about in the questionnaire. However, while reviewing the websites for details regarding GVCs and job creation, I increasingly came across references to competitiveness.

6.3.1 WHAT ECAS CLAIM ON THEIR WEBSITES ABOUT COMPETITIVENESS

The next section provides an overview of what is claimed in the websites of ECAs. As before, where a cell is left open, no information on this topic was identified in the ECAs website.

Table 6-5 Extracts from ECA websites on competition

ECA	Competition
Australia	
Austria https://www.oekb.at/en/export-services/covering-and-financing-exports/buyer-credit.html	*For many clients. Being able to receive services and financing at the same time is a strong argument for making purchases in Austria.* *We offer tools to strengthen your company's position against global competition and make our extensive export experience available to you.* *…we create the basis for attractive financing through your bank.*
Belgium	
Canada https://www.edc.ca/en/solutions/financing/buyer-financing.html https://www.edc.ca/en/about-us.html https://www.edc.ca/en/about-us/corporate/corporate-reports/2019-annual-report/champion-trade-enablement-2019.htm	*Win more sales with Buyer Financing* *Price and quality have always been crucial considerations in purchasing decisions, but more of your customers are looking for financing options. We can help you gain a competitive edge by providing Buyer Financing to your international customer—and taking on the risk of non-payment for you.* *We use our unique trade knowledge and financial solutions … and to enhance Canada's competitiveness in the international marketplace.* *EDC levels the playing field for Canadian companies doing business internationally.*
China	
Croatia	

ECA	Competition
Czech Republic https://www.egap.cz/en/state-support-export https://www.egap.cz/dokumenty/product-overview-securing-your-business.pdf https://www.egap.cz/en/annual-reports	*State supported exports are governed by the rules of OECD and the EU, ensuring that the exporters from each country do not compete with each other with the range of state support, but only with regard to the quality and price of goods and services.* *We will help you compete internationally* *EGAP currently employs a new strategy for 2021–2025, under which it will continue to support the competitiveness of Czech exporters on foreign markets a*
Denmark https://ekf.dk/en/what-we-do/our-services/financing-for-foreign-buyers https://ekf.dk/en/about-ekf/ekf-s-organisation/international-cooperation https://ekf.dk/en/what-we-do/our-services/win-more-orders-with-financing-for-your-buyer	*Benefit from a stable financing solution at competitive rates.* *EKF represents Denmark in several international forums to ensure fair and equal terms for Danish exporters in competition with export companies in other countries.* *We therefore work on behalf of Denmark to set common international rules regarding export credit and trade policy.* *We work to ensure that international trade is effected on fair and equal terms, so that exporters can concentrate on competing based on the quality and price of their products.* *You can gain a considerable competitive edge on other suppliers if you are able to offer your customer long-term financing on competitive terms. That is where we can help. Offer your customer financing and secure the order.* *It takes more than just a strong product to succeed in export markets. Financing is increasingly used as a competitive parameter in the struggle to fill order books. Many companies find that they win the order if they can offer their customer an attractive financing solution.*
Estonia	
Finland https://www.finnvera.fi/eng/export/financing-for-the-buyer https://www.finnvera.fi/eng/finnvera/code-of-conduct/international-regulation-and-co-operation Finnvera Group's Report of the Board of Directors and Financial Statements 2021	*Financing for your customer – your competitive edge. Success in competitive bidding is often the sum of many factors. When your customer also asks for financing, you can turn this into a competitive edge. We at Finnvera can share the risk by granting a Buyer Credit Guarantee or a Bill of Exchange Guarantee to your bank. This may prove to be the decisive factor.* *A number of international rules and agreements regulate export credit guarantee activities. The purpose of the rules is to make sure that countries do not compete by means of officially supported export credit terms.* *To ensure stable and internationally competitive export financing, the Government decided in December to recapitalise Finnvera's export credit guarantee and special guarantee operations by EUR 400 million.*
France https://www.bpifrance.com/products/buyer-credit-insurance/	***Benefits*** *With this coverage, the bank pays the French exporter in cash and can offer a competitive loan to your buyer.*
Germany	
Greece	
Hungary	
India https://www.eximbankindia.in/buyers-credit	*Competitive and attractive rates of interest available against host country's high borrowing cost*
Israel	

ECA	Competition
Italy https://www.sace.it/en/solutions/category-detail/product-detail/Contract-tied-facility---Italian-supplier-identified https://www.sace.it/en/trade-with-italy	*With our Buyer's Credit facility you can get access to international financing in hard currencies at competitive rates to purchase capital and quasi-capital goods and services from Italy* *For over 40 years we have been providing the tools and resources to support the competitiveness of Italian products around the world.*
Luxembourg	
Mexico https://www.bancomext.com/en/about-bancomext/bancomext/	*goal of assisting Mexican firms in increasing their productivity and competitiveness.*
Netherlands https://atradiusdutchstatebusiness.nl/en/article/annual-review.html (Annual Review 2020)	*Therefore, our mission is to generate added value by putting Dutch companies in the best possible export and competitive position.* *Western countries are experiencing increasing competition from countries - particularly China, but also India, for example - that are not participants in the Arrangement and of which there is a strong suspicion that they do not (always or fully) comply with these rules. Secondly, countries that are Participants in the Arrangement also undermine the level playing field with other kinds of support, such as development cooperation or 'investment loans'.* *The report's main conclusions are: Present OECD rules on public export finance do not sufficiently consider the impact of globalisation and global value chains on international trade.* *Non-OECD countries such as Brazil, Russia, India, China and South Africa have become major suppliers of export finance. Meanwhile, China is by far the most dominant player in the world. These countries are not bound by OECD rules on public export finance* *a fixed interest rate was introduced in 2020 that can be fixed at least four months before concluding a financing agreement, with an increase in the CIRR rate by 20 basis points. This has levelled the playing field somewhat for Dutch exporters in respect of such export financing*
New Zealand https://exportcredit.treasury.govt.nz/about-us/our-mission	*Our export credit guarantees assist exporters to secure international business by enabling them to offer competitive finance terms to international buyers.*
Norway https://www.eksfin.no/en/buy-norwegian/	*Buyers of Norwegian goods and services have access to competitive financing solutions from Export Finance Norway (Eksfin).* *This enables you to purchase from Norwegian suppliers with stable long-term financing at competitive terms.* *A state guarantee from Eksfin, with its AAA rating* *Our mission is to ensure that Norwegian export industries are financially competitive abroad.* *Eksfin strives to provide exporters with competitive terms and keeps abreast of what its sister institutions are offering their own exporters.*
Poland https://kuke.com.pl/files/The_Statute_of_the_Export_Credit_Insurance_Corporation_Joint_Stock_Company.pdf	*The principal objective of the Company shall be to create conditions conducive to the promotion of Polish exports on credit terms and to strengthen the position of exporters and their goods and services in the domestic and international markets.*

ECA	Competition
Russia	
South Africa https://www.ecic.co.za/about-us/vision-and-mission/ https://www.ecic.co.za/wp-content/uploads/2021/03/ECICCorporateProfile.pdf	*Its overarching goal – and its mandate from the South African government as its sole shareholder – is to make South African exporters attractive to international buyers to attract foreign income, stimulate domestic economic growth and create local jobs.* *The delivery of our mandate is aligned with South Africa's national imperatives of inclusive economic growth, job creation and competitiveness in global markets, especially in Africa and other emerging markets that are considered as too risky for conventional insurers.* *Our competitive strength stems from a singularly experienced footprint in Africa, as well as a substantial appetite for insuring against political risk on a continent known for political volatility and backing large, long-term projects with flexible terms and conditions that suit project-specific needs and cashflow profiles.*
Spain https://www.cesce.es/en/corporativo/agencia-de-credito-a-la-exportacion-eca https://www.cesce.es/documents/20122/8977900/Informe+de+Actividades_Cesce_2021_en.pdf/73248335-69b4-46ec-0a28-694fa8d58092?t=1656673573104 https://www.cesce.es/documents/20122/2265530/EN+-+INFORME+ACTIVIDADES+2020+%2826.04.2021%29_lr.pdf/ca15c37f-c49c-91eb-3b41-3977792cae94?version=1.0&t=1621438050660	*The various insurance products allow exporters to offer competitive financing to their foreign customers,* *Indeed, in many of the operations in which Cesce participates, it is this partnership with the banks that issue the guarantees or grant the credits that allows it to accompany exporters and investors and help them to compete in international markets.* *…to facilitate the possibility for these companies to offer better payment terms or financing to their customers so that they can compete on equal terms with other foreign exporters supported by their export credit agencies.* *Although for decades CESCE has aspired for competition on an international level be settled solely on the basis of the quality and price offered by companies, it is aware that financing, and in certain cases financing with State support, is often an important item on the scales of those that make purchasing decisions. Therefore, it closely follows the evolution of the programmes offered by other countries through their Export Credit Agencies and tries to adapt its coverage so that its exporters receive a level of support at least as solid as that received by other exporters from their national agencies.*
Sweden https://www.ekn.se/globalassets/dokument/broschyrer/purchase-from-sweden-ekn.pdf/ https://www.ekn.se/globalassets/dokument/broschyrer/the-swedish-export-credit-system.pdf/	*When EKN covers the risk of non-payment, your supplier, or a bank, can offer you a competitive financial solution.* *EKN's guarantees are on behalf of the Kingdom of Sweden and have a triple-A credit rating, resulting in attractive rates and conditions.* *Access to attractive and stable funding with long tenors.* *To facilitate and promote exports and the internationalisation and competitiveness of Swedish industry, Sweden offers a government backed export credit system.* *Enjoying a high credit rating, SEK can offer favourable loans to facilitate export deals.*

ECA	Competition
Switzerland https://www.serv-ch.com/en/products/products-for-exporters/ https://www.serv-ch.com/en/organisation/about-serv/ https://www.serv-ch.com/en/organisation/mission-statement/ https://www.serv-ch.com/en/organisation/in-the-field/ssb/	*Offer foreign customers attractive terms and conditions of payment* *Most industrialised nations offer their companies similar protection through state export credit agencies (ECAs). SERV helps Swiss exporters compete internationally and create as well as maintain jobs in Switzerland.* *We create and retain jobs in Switzerland and help the Swiss export industry to compete internationally.* *The big advantage for … is that SERV benefits from Switzerland's AAA rating, thanks to which creditors categorise SERV's risk as minimal. This helped … to obtain financing at extremely attractive terms and low interest rates.*
Turkey https://www.eximbank.gov.tr/content/files/04749fab-6412-4455-b736-6e40f4883181/annual-report-2021	*the Bank continued to provide competitive financing options at CIRR to buyers of our exporters with the aim of promoting the exports of high value-added investment goods from our country.* *to help increase the competitiveness of Turkish exporters and contractors in the international arena.* *The Bank's mission to provide financing opportunities with costs that will lead exporters to gain competitive advantages* *the funding of exports through credit, guarantee and insurance programs has become the most significant stimulant element in terms of increasing the competitiveness of Turkish exports on international markets.*
United Kingdom https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1092909/july_2022_UKEF_product_brochure_all_products.pdf https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/995841/UK_Export_Finance_Annual_Report_and_Accounts_2020_to_2021.pdf	*We help UK companies: win contracts by providing attractive financing terms to their buyers* *Our finance, insurance and guarantees can help businesses … compete on a global scale.* *We also operate under international (principally OECD) agreements that seek to create a 'level playing field' by setting terms under which national credit agencies can support exports. However, not all export credit agencies (ECAs) are party to these international agreements and competition for UK exporters is increasingly from non-OECD countries whose ECAs are not bound by these agreements.* *we aim to:* *achieve fairer competition by seeking to establish a 'level playing field' internationally through obtaining multilateral agreements in export credit policies and practices* *Offering attractive financing terms for buyers of UK goods and services can help exporters make their offering more competitive.* *UKEF aims to support UK exporter competitiveness.*

ECA	Competition
United States https://www.exim.gov/about https://img.exim.gov/s3fs-public/managed-documents/MKG-EOV-6_agency_brochure_04DEC2020c.pdf https://img.exim.gov/s3fs-public/reports/EXIM+FY2022-2026+Strategic+Plan+FINAL.pdf	*In doing so, the agency levels the playing field for U.S. goods and services going up against foreign competition in overseas markets, so that American companies can create more good-paying American jobs.* *With more than 110 other export credit agencies around the world trying to win jobs for their own countries, EXIM helps level the playing field for American businesses. "Made in the USA" is still the best brand in the world, and the agency ensures that U.S. companies never lose a sale because of attractive financing from foreign governments.* *U.S. businesses face increased international competition, particularly from an increasingly China, and to help level the playing field, EXIM prioritizes efforts to pursue fair and transparent rules for Export Credit Agencies.*

Twenty of my 31 ECAs referred to competition on their websites. This was a higher number than the referencing to both GVC and job creation. It would therefore appear that ECA's and their governments place significant emphasis on providing support that improves the international competitiveness of their exporters, although this language can simply be "marketing speak" on what is, after all, a public-facing website.

Although not extensive, the literature review had referenced competition, with Ascari (2007) referring to the need for countries to match other countries programmes and establishing a "war chest" for the international trade arena. This view comes through fairly strongly in the review of the ECA websites. Austria, Czech Republic, Italy, Mexico, South Africa, Sweden, Switzerland and Turkey all refer to their support facilitating international competitiveness. Canada talks about winning more sales through their products. Canada, Denmark and Finland refer to establishing a competitive edge.

Several of the ECAs; including Canada, Netherlands, Spain, United Kingdom and the United States; refer to their support ensuring that there is a level playing field that enables their exporters to compete on equal terms. These ECAs believe that it is necessary for their exporters to be able to offer attractive financing terms to their foreign customers in order to ensure that the business is not lost to a competing exporter and country due to the financing they can offer. It seems as if various ECAs are monitoring what other ECAs are doing, to ensure that they do not fall behind. Norway refers to keeping abreast of what their sister

institutions are offering their exporters. Spain notes their following of what support other countries, through their ECAs, are offering their exporters.

6.3.2 RE-ESTIMATING THE MODELS USING COMPETITIVENESS DATA

I therefore believed that it was plausible that the national content policy of ECAs was related to country competitiveness. To explore this further, I utilised the Global Competitiveness Index 4.0 2019 produced by the World Economic Forum. This index covers 141 countries and measures national competitiveness; defined as the set of institutions, policies and factors that determine the level of productivity (Schwab, 2019). Dima et al., (2018) used this as a variable when testing for relationships between country competitiveness and indicators related to the knowledge economy of countries.

Table 6-6 Correlation matrix including global competitiveness index

	High / Low National Content	GDP in US$ millions	GDP per Capita in US$	Forward GVC Participation	Backward GVC Participation	R&D as a % of GDP	Unemployment Rate	Global Competitiveness Index
High / Low National Content	1							
GDP in US$ millions	.251	1						
GDP per Capita in US$	-.419*	-.012	1					
Forward GVC Participation	-.155	.135	.114	1				
Backward GVC Participation	.013	-.380*	.263	-.495**	1			
R&D as a % of GDP	-.141	.198	.436*	.202	-.119	1		
Unemployment Rate	.267	-.127	-.309	-.034	-.109	-.300	1	
Global Competitiveness Index	-.395*	.235	.746**	.245	-.094	.655**	-.404*	1

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

The correlation between high / low national content and the Global Competitiveness Index was significant (-.395) at the 0.05 level. The negative direction of the relationship indicates that higher competitiveness is more likely to be associated with low national content policies. This would suggest that the more competitive countries are more willing to adopt low national content policies and vice versa with the least competitive countries being more inclined to

adopt a high national content policy. Except for GDP per capita, the Global Competitiveness Index variable is the only other variable with a significant correlation.

I then proceeded with the binary regression analysis adding the Global Competitiveness Index to the preceding model that included GDP, GDP per capita, the GVC participation variables, the value-added variable of R&D and the unemployment variable. I was concerned with multicollinearity, however, testing for this indicated that there was no multicollinearity. The tolerance scores were comfortably above .1 and the VIF scores comfortably below 10.

Table 6-7 Collinearity statistics including global competitiveness index

		Collinearity Statistics	
		Tolerance	VIF
	(Constant)		
	GDP Adjusted in US$	.785	1.273
	GDP per Capita Adjusted in US$	.312	3.202
	Forward GVC Participation	.682	1.466
	Backward GVC Participation	.488	2.048
	R&D as a % of GDP	.561	1.781
	Unemployment Rate	.799	1.252
	Global Competitiveness Index	.241	4.157

Table 6-8 Binary logistics regression results with global competitiveness index

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Step 1[a]	GDP Adjusted in US$	.653	.551	1.404	1	.236	1.921	.652	5.659
	GDP per Capita Adjusted in US$	-.285	.329	.751	1	.386	.752	.395	1.432
	Forward GVC Participation	.006	.105	.004	1	.952	1.006	.819	1.236
	Backward GVC Participation	.093	.073	1.632	1	.201	1.098	.951	1.266
	R&D as a % of GDP	.671	.580	1.342	1	.247	1.957	.628	6.095
	Unemployment Rate	.196	.173	1.286	1	.257	1.217	.867	1.709
	Global Competitiveness Index	-.130	.145	.809	1	.368	.878	.661	1.166
	Constant	4.510	9.635	.219	1	.640	90.922		

a. Variable(s) entered on step 1: GDP Adjusted in US$, GDP per Capita Adjusted in US$, Forward GVC Participation, Backward GVC Participation, R&D as a % of GDP, Unemployment Rate, Global Competitiveness Index.

Based on the Omnibus Tests of Model Coefficients, the model was statistically significant, X^2 (7, N = 31) = 14.856. p > 0.05. The chi-square value was 14.856 with 7 degrees of freedom and a significance value of 0.038, below 0.05 confirming that the model is a good

fit. The chi-square value for the Hosmer-Lemeshow Goodness of Fit Test is 8.069 with a significance level of 0.427. The significance value is larger than 0.05, which therefore indicates support for our model. The model on the whole explains between 38.1% (Cox and Snell R square) and 50.8% (Nagelkerke R squared) of the variance in national content policy. The model correctly classifies 83.9% of cases, an improvement from the null model (51.6%). 87.5% of cases were correctly predicted as having high national content policies while 80.0% of cases were correctly predicted as having low national content policies. The models predictive scores were the same as the preceding model. None of the variables were significant.

Given that both the competitiveness index and GDP per capita variables had significant correlations to high / low national content I expected the results to reflect significance with both these variables. However, this was not the case. To test whether the GDP variables were moderating the global competitiveness index, I re-estimated the model testing for interaction effects by adding two interaction variables:

- GDP X Global Competitiveness Index
- GDP per capita X Global Competitiveness Index

Table 6-9 Binary logistics regression results with global competitiveness index and interaction variables

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Step 1[a]	GDP Adjusted in US$	-20.444	12.258	2.782	1	.095	.000	.000	35.881
	GDP per Capita Adjusted in US$	-17.150	8.943	3.678	1	.055	.000	.000	1.459
	Forward GVC Participation	.187	.178	1.104	1	.293	1.206	.851	1.709
	Backward GVC Participation	.239	.144	2.745	1	.098	1.270	.957	1.686
	R&D as a % of GDP	1.887	1.140	2.742	1	.098	6.602	.707	61.635
	Unemployment Rate	.726	.395	3.377	1	.066	2.067	.953	4.484
	Global Competitiveness Index	-1.331	.728	3.339	1	.068	.264	.063	1.101
	Global Competitiveness Index by GDP Adjusted in US$	.284	.167	2.874	1	.090	1.328	.957	1.844
	Global Competitiveness Index by GDP per Capita Adjusted in US$	.220	.115	3.623	1	.057	1.246	.993	1.562

a. Variable(s) entered on step 1: GDP Adjusted in US$, GDP per Capita Adjusted in US$, Forward GVC Participation, Backward GVC Participation, R&D as a % of GDP, Unemployment Rate, Global Competitiveness Index, Global Competitiveness Index * GDP Adjusted in US$, Global Competitiveness Index * GDP per Capita Adjusted in US$.

Re-estimating the model including the interaction variables for the first time suggested useful insights. This model was considered a good model fit in terms of both the Omnibus Test (.007) and the Hosmer and Lemeshow Test (.949), and the predictability score remained the same as the preceding models at 83.9%.

While none of the variables were significant at the .050 significant threshold (including GDP per capita) a number were close. The GDP per capita variable was close at .055 and the interaction variable of GDP per capita X global competitiveness index was also very close at .057.

Moreover, with the exception of Forward GVC Participation, all the other variables in the model – all of which had been considered on the basis of previous literature and evidence obtained on websites and via questionnaires – were marginally significant i.e., at below the .10 level. Given that I was using nine variables in a model, but only had 31 cases, this level of significance was quite good.

Certainly, the inclusion of competitiveness within my hunches was justified given the ECA referencing to competitiveness, the significant correlation score and the significance scores within the model when interaction variables are included. The statistical analysis enabled me to identify several factors driving national content policies.

6.4 CONCLUSION

Reviewing the qualitative data on GVCs, unemployment and competitiveness suggests that all these factors have the potential to influence the national content policies of ECAs. Systematically going through the websites and questionnaire responses of the ECAs confirmed numerous references to these potentially influencing factors. However, my quantitative analysis did not confirm any clear links between the national content policy of ECAs and GVCs, unemployment and competitiveness.

The results of my research consistently confirmed that GDP per capita is a key factor contributing significantly to the determination of national content policies. Adding

considerations of global competitiveness strengthened my results, and it seems clear from my research that it is much more likely that already globally competitive and wealthy countries will have adapted their ECA policies to take advantage of GVCs than the countries which could arguably benefit more from such strategies.

7 CHAPTER 7: CONFIRMING THE HUNCH

My review of the evidence underlined several points. The first was that the current policies about national content and national interest are seldom aligned with participation in GVCs. However, ECAs are aware of GVCs, and generally keen to adjust their local content requirements to take advantage of GVCs. Indeed, there was substantial evidence of ECAs reducing their local content requirements and substantial evidence that GVCs were influencing international business.

Second, job creation and concerns regarding policy and unemployment remain top of mind amongst many ECAs. Interestingly, both ECAs that are reducing their national content policies and ECAs that are not reducing their policies to the same extent, reference the importance of job creation. However, my statistical analysis of unemployment failed to highlight strong links between national content policy and unemployment rates. This may be because it remains unclear to ECAs as to the real impact a change in national content policy has on jobs.

Third, it seems clear that many ECAs view their role as facilitating the international competitiveness of their exporters. In fact, the global competitiveness index reflected a significant correlation with the national content policy of ECAs, reflecting a plausible link. But global competitiveness on its own did not explain much. It was in interacting it with GDP per capita that it achieved (marginal) significance, with both global competitiveness and GDP per capita on their own also achieving results close to significance. A number of other variables, particularly unemployment and to a lesser extent backward GVC participation and R&D, were also somewhat significant.

Having considered my various hunches my conclusion is that GVC participation, unemployment and R&D (as a measure of higher value-adding activities) all contribute to the selection of high or low national content policy. But the wealth of the country, especially in interaction with the global competitiveness of that country, are key. What is clear from my results is that the countries that are best able to align their ECA policies with their value chain participation are the wealthy and globally competitive countries – i.e., those that are

already economically successful. There is some justification to this conclusion with Aiginger (2006) making the link between wealth and competitiveness, defining country competitiveness as the ability of a country to create welfare. He goes on to say that per capita income is the primary component of welfare, followed by employment / unemployment prospects.

7.1 REVISITING THE STATISTICAL ANALYSIS WITH AN ALTERNATIVE WEALTH VARIABLE

The centrality of wealth in these models was puzzling. Almost without fail, GDP per capita proved to be significant or at least marginally significant. Adding the global competitiveness index especially when interacting with GDP per capita proved to strengthen the model. The global competitiveness index produced by the World Economic Forum is considered one of the most influential and well-known indices measuring country competitiveness, although, it is not without its critics, largely due to its inclusion of subjective data from opinion surveys (Benítez-Márquez, Sánchez-Teba, & Coronado-Maldonado, 2022). This suggests that the countries that are most likely to change their national content policies to take advantage of the increasing prevalence of GVCs in global trade are essentially those that are seen to be economically successful. Having developed this insight, I then felt it was important to further interrogate the notion of wealth.

Authors concur that GDP per capita is an accepted measure of wealth and prosperity (Aiginger, 2006; Dima et al., 2018). However, given the centrality of this measure in my findings, and in order to verify my hunch that wealthy countries were better placed to adopt flexible or low national content policies, I decided to replace the GDP per capita variable with an alternative wealth variable. There is an increasing view that countries need to look beyond GDP to gauge a country's economic well-being and to consider a broader range of factors including produced capital, human capital and natural capital (Bizikova, Smith, & Zoundi, 2021; Dasgupta, Managi, & Kumar, 2022; World Bank, 2021).

There are various global initiatives underway to produce this broader measurement of wealth (Bizikova et al., 2021), including:

- The World Bank; as summarised in a book titled The Changing Wealth of Nations 2021, Managing Assets for the Future; in which they provide 2018 data estimating the total wealth per capita per country.
- An Inclusive Wealth Index proposed by Dasgupta, Managi and Kumar.
- The World Inequality Lab run by Professor Thomas Piketty.
- The OECD as summarised in their How's Life report.
- The Inclusive Development Index developed by the World Economic Forum.

The World Bank report excluded Israel and New Zealand which would have reduced my dataset to 29 countries. The OECD report tends to focus on the OECD countries. The two indices also had fairly outdated numbers. Therefore, I settled on using the World Inequality Database produced by the World Inequality Lab. This institution had data covering my full database and had data as current as 2021. The World Inequality Lab provides data reflecting the market value of national wealth per adult per country.

Table 7-1 Correlation matrix including market value of national wealth per adult per country

	High / Low National Content	GDP Adjusted in US$	GDP per Capita Adjusted in US$	Market value national wealth adjusted	Forward GVC Participation	Backward GVC Participation	R&D as a % of GDP	Unemployment Rate	Global Competitiveness Index
High / Low National Content	1								
GDP Adjusted in US$	.251	1							
GDP per Capita Adjusted in US$	-.419*	-.012	1						
Market value national wealth per adult adjusted	-.332	.093	.880**	1					
Forward GVC Participation	-.155	.135	.114	.221	1				
Backward GVC Participation	.013	-.380*	.263	.099	-.495**	1			
R&D as a % of GDP	-.141	.198	.436*	.346	.202	-.119	1		
Unemployment Rate	.267	-.127	-.309	-.303	-.034	-.109	-.300	1	
Global Competitiveness Index	-.395*	.235	.746**	.748**	.245	-.094	.655**	-.404*	1

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Replacing GDP per capita with the market value national wealth indicator per adult revealed no multicollinearity concerns.

Table 7-2 Multicollinearity statistics with the inclusion of market value national wealth per adult

	Collinearity Statistics	
	Tolerance	VIF
GDP Adjusted in US$	.793	1.261
Market value national wealth per adult adjusted	.359	2.788
Forward GVC Participation	.666	1.502
Backward GVC Participation	.567	1.765
R&D as a % of GDP	.518	1.929
Unemployment Rate	.802	1.247
Global Competitiveness Index	.237	4.219

It should be noted that it was not my intention to try and find a better variable than GDP per capita, but rather to try and determine whether I could replicate the results if an alternative measure of wealth was utilised.

Estimating correlation tests comparing the market value national wealth per adult to high / low national content produced a Pearson correlation score of -.332 and while not significant, relatively speaking it reflected reasonable correlation. The correlation score was lower than the GDP per capita score of -.419.

I then re-estimated all the binary logistics regression models in order to compare the results using the market value of national wealth per adult per country as opposed to GDP per capita.

While the market value national wealth per adult per country wealth variable never actually achieved significance in the various models, it was generally the most significant variable in the various models, was often very close to the .05 significance level and overall performed remarkably similar to the GDP per capita variable.

In Table 7-3 only significance levels are portrayed. In contrast to the more typical usage, the "( )" reflects the results using GDP per capita as the wealth measure, to facilitate comparison.

Table 7-3 Comparison of binary logistics regression significance levels

	Only controls Sig.	With GVC participation Sig.	With R&D Sig.	With unemployment Sig.	With competitiveness Sig.	With competitiveness and interaction variables
GDP Adjusted in US$	.273 (.263)	.296 (.251)	.286 (.279)	.317 (.314)	.166 (.236)	.060 (.095)
Market value national wealth per adult adjusted (GDP per Capita Adjusted in US$)	.061 (.033)	.056 (.020)	.077 (.039)	.125 (.050)	.949 (.386)	.066 (.055)
Forward GVC Participation		.744 (.743)	.755 (.698)	.950 (.924)	.997 (.952)	.226 (.293)
Backward GVC Participation		.392 (.241)	.407 (.248)	.262 (.164)	.355 (.201)	.132 (.098)
R&D as a % of GDP			.815 (.576)	.794 (.409)	.215 (.247)	.093 (.098)
Unemployment Rate				.204 (.235)	.287 (.257)	.061 (.066)
Global Competitiveness Index					.123 (.368)	.046 (.068)
Global Competitiveness Index by GDP Adjusted in US$						.058 (.098)
Global Competitiveness Index by Market value national wealth per adult adjusted (GDP per Capita Adjusted in US$)						.063 (.057)
Constant	.183 (.097)	.823 (.896)	.784 (.967)	.488 (.445)	.264 (.640)	.046 (.081)

"( )" reflect the results using GDP per capita as the wealth measure

In Table 7.4. the binary logistics regression model that was presented in Table 6.9 is re-estimated but using market value national wealth per adult adjusted as a variable rather than GDP per capita adjusted.

This model was considered a good model fit in terms of both the Omnibus Test (.003) and the Hosmer and Lemeshow Test (.998), and the predictability score remained the same as the model that utilised GDP per capita (83.9%). The global competitiveness variable was significant (.046) and a number of the other variables were marginally significant, scoring

close to .05, including the wealth variable and the competitiveness variable interacting with the wealth variable. There were clear similarities in the model's performance where wealth was measured in terms of average market value per adult compared to the model that utilised GDP per capita as the measure of wealth. Thus, re-estimating the models utilising an alternative wealth variable reconfirmed my findings.

Table 7-4 Binary logistics regression results with global competitiveness index and interaction variables (using the market value national wealth variable per adult adjusted)

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Step 1[a]	GDP Adjusted in US$	-26.226	13.932	3.544	1	.060	.000	.000	2.944
	Market value national wealth per adult adjusted	-5.603	3.049	3.377	1	.066	.004	.000	1.452
	Forward GVC Participation	.297	.245	1.464	1	.226	1.345	.832	2.175
	Backward GVC Participation	.347	.230	2.273	1	.132	1.415	.901	2.223
	R&D as a % of GDP	2.561	1.525	2.820	1	.093	12.955	.652	257.510
	Unemployment Rate	1.110	.593	3.510	1	.061	3.035	.950	9.698
	Global Competitiveness Index	-1.974	.991	3.968	1	.046	.139	.020	.969
	Global Competitiveness Index by GDP Adjusted in US$	.365	.193	3.599	1	.058	1.441	.988	2.102
	Global Competitiveness Index by Market value national wealth per adult adjusted	.072	.039	3.450	1	.063	1.074	.996	1.159
	Constant	118.477	59.261	3.997	1	.046	2.844E+51		

a. Variable(s) entered on step 1: GDP Adjusted in US$, Market value national wealth adjusted, Forward GVC Participation, Backward GVC Participation, R&D as a % of GDP, Unemployment Rate, Global Competitiveness Index, Global Competitiveness Index * GDP Adjusted in US$, Global Competitiveness Index * Market value national wealth per adult adjusted .

Certainly, the inclusion of competitiveness within my hunches was justified given the ECA referencing to competitiveness, the significant correlation score and the significance scores within the model when interaction variables are included. The statistical analysis enabled me to identify several factors driving national content policies.

Having undertaken a robust analysis that considered various models and numerous variables (including the use of an alternative wealth variable), I believe that my conclusion that the wealthy countries, and especially the wealthy and competitive countries, are better placed to take advantage of global trade dynamics was reasonable. In summary, I believe

that my hunch that ECA decisions regarding national content are facilitated by the degree of wealth of countries is reasonable, and if this is the case the wealthier and more competitive countries are in a significantly enhanced position.

7.2 A CONSIDERATION OF CAUSALITY

It is possible that countries that were wealthy and / or competitive were at that level because they had implemented low national content or national interest policies. In other words, the wealth and competitiveness of countries was influenced by their low national content or national interest policies and not the other way around. However, I don't believe that this is feasible. While the export credit finance industry is meaningful and plays an important part of government strategy in terms of exporter support, in the grand scheme of things it remains a fairly niche sector.

It is an instrument that governments can use to try an enhance the integration of their exporters within GVCs and to improve their exporter competitiveness, but the way ECAs operate is by supporting rather than creating business initiatives. This means that ECAs on their own have limited influence on country participation within GVCs, its competitiveness and its wealth. They are part of a suite of policies and initiatives from both government and business, and the latter often from outside the countries.

7.3 REVISITING THE WEBSITES OF THE EXPORT CREDIT AGENCIES

The websites of the ECAs do not refer directly to country wealth. This is understandable, as it would not be considered appropriate for ECAs to boast about their ability to do certain things because they are wealthy. However, several ECAs make explicit reference to their credit rating.

Standard and Poor's (S&P) in a document describing how they rate sovereigns, draws a clear link between sovereign rating and wealth. In a February 15, 2019 document, S&P note that "The history of sovereign defaults suggests that a wealthy, diversified, resilient, and adaptable economy ultimately boosts its debt-bearing capacity" (p.2). They go on to say that

their economic assessment of a sovereign incorporates their view that “The country's income levels as measured by its GDP per capita, indicating broader potential tax and funding bases upon which to draw, which generally support creditworthiness” (p.2).

Following the same process as adopted previously, I then reviewed the various websites of the ECAs in order to identify what they were saying with regards to their rating. Table 7.5. reflects the findings of this exercise.

Table 7-5 Extracts from ECA websites on ratings

ECA	Credit Rating
Australia https://www.exportfinance.gov.au/our-organisation/investor-relations/	*Under Section 62 of the EFIC Act, the Commonwealth of Australia explicitly guarantees the due payment by Export Finance Australia of any money that becomes payable. Our funding is underpinned by its AAA rating from Standard and Poor’s (S&P).*
Austria https://www.oekb.at/en/export-services/international-financing-cooperation/financing-lines.html	*Thanks to our excellent ratings, we receive very favourable conditions on capital markets which we then pass on to you.*
Belgium https://credendo.com/en/about-credendo/credendo-export-credit-agency	*Backed by the state, its mission is to promote international trade relations, providing medium-term and long-term trade credit insurance cover… Its solidity is underlined by its AA rating from Standard & Poor’s and cover capacity of EUR 30 billion.*
Canada https://www.edc.ca/content/dam/edc/en/corporate/corporate-reports/annual-reports/annual-report-2019.pdf	*EDC is wholly owned by the Government of Canada and our obligations are backed by the full faith and credit of the Government of Canada which holds a AAA credit rating.*
China	
Croatia	
Czech Republic	
Denmark https://ekf.dk/en/what-we-do/our-services/financing-for-foreign-buyers	*you will be offered a competitive financing deal once you are covered by our AAA-guarantee to back your credit.*
Estonia	
Finland https://www.finnvera.fi/eng/finnvera/investors#toc--credit-ratings-	*Finnvera Group in Brief • Specialised financing company owned 100% by the Republic of Finland • Debt obligations explicitly guaranteed by the Republic of Finland • Rating of debt obligations Aa1/P-1 by Moody’s and AA+/F1+ by Fitch… Finnvera and its subsidiary Finnish Export Credit are the official ECAs of Finland. We offer export financing solutions and export credit guarantees backed by the full faith and credit of the Republic of Finland in a flexible yet responsible manner*
France	
Germany https://www.agaportal.de/en/financing-experts	*The importer benefits from Germany’s excellent credit rating. In many cases, it is this fact that makes financing possible in the first place.*
Greece	
Hungary	

ECA	Credit Rating
India	
Israel	
Italy	
Luxembourg	
Mexico	
Netherlands https://atradiusdutchstatebusiness.nl/en/products/export-credit-guarantee.html	*As the Dutch State has the highest credit rating, this guarantee will increase the bank's chances of raising the required funding.*
New Zealand	
Norway https://www.eksfin.no/en/buy-norwegian/	*A state guarantee from Eksfin, with its AAA rating*
Poland	
Russia	
South Africa https://www.ecic.co.za/resource-centre/ecic-e-mag/	***Sovereign Credit Rating Downgrade:*** *Another economic issue affecting the Corporation is the sovereign credit rating downgrade of South Africa to sub-investment grade, which has the potential to have an increasingly negative impact, largely because it means that any future projects that we get involved in are going to be more expensive, given that South Africa's banks are also equally downgraded to below investment grade, in line with the sovereign rating. The sovereign credit rating downgrade of South Africa to sub-investment grade will have a negative impact on the attractiveness of the ECIC insurance paper for commercial banks. The banks would have to hold additional capital for existing ECIC-related exposures and new transactions will attract a higher risk margin going forward…A competitive funding solution is an important element of the package when South African exporters are bidding for international contracts…Therefore, their cost of funding is going to be higher, and that means they could be less competitive in financing some of the projects the Corporation is involved in on the continent. This could mean other African countries taking advantage through their own or other international export credit agencies, with South Africa viewed as more expensive on the financing side. We may be competitive in terms of quality and pricing, but if you can't be competitive on the financing side, it makes the overall offering, in terms of tenders for projects, that much more expensive.*
Spain https://www.cesce.es/en/corporativo/quienes-somos	*The risk rating agency Standard & Poor's raised Cesce's short-term rating in 2019 to A-1, from A-2, and maintained the long-term A- rating, with a stable outlook.*
Sweden https://www.ekn.se/globalassets/dokument/broschyrer/purchase-from-sweden-ekn.pdf/ https://www.ekn.se/globalassets/dokument/broschyrer/the-swedish-export-credit-system.pdf/	*EKN's guarantees are on behalf of the Kingdom of Sweden and have a triple-A credit rating, resulting in attractive rates and conditions.* *Enjoying a high credit rating, SEK can offer favourable loans to facilitate export deals.*
Switzerland https://www.serv-ch.com/en/organisation/in-the-field/ssb/	*The big advantage for SSB is that SERV benefits from Switzerland's AAA rating, thanks to which creditors categorise SERV's risk as minimal. This helped SSB to obtain financing at extremely attractive terms and low interest rates.*
Turkey	
United Kingdom https://www.gov.uk/government/publications/uk-export-finance-leading-with-finance-product-brochure/uk-export-finance-leading-with-finance-all-products	*Our financing can help buyers in both the public and commercial sectors ensure capital goods or services from the UK come with competitive terms, providing overseas project sponsors with attractive long-term financing…We can help buyers: • borrow at competitive interest rates from banks with the benefit of a strong guarantee backed by the UK government*

ECA	Credit Rating
United States https://www.exim.gov/about	*Because it is backed by the full faith and credit of the United States*

Australia, Canada, Denmark, Norway, Sweden and Switzerland all emphasise the benefit of their AAA-rating. Austria, Germany, Netherlands, the United Kingdom and United States while not specifically referencing their rating all refer to the positive influence of their rating. Slightly lower rated countries like Finland and Spain also refer to their rating.

Most of the low rated countries omit any mention to their rating, an exception being South Africa, the lowest rated country that commented on ratings. The views of the CEO, Kutoane Kutoane, of the South African ECA are enlightening. He highlights the negative effect of South Africa's rating and the detrimental effect that a low rating can have on their business and the international competitiveness of their exporters. Specifically, he states that a South African rating downgrade results in a more expensive South African funding package which has negative implications for the success of South African exporters https://www.ecic.co.za/resource-centre/ecic-e-mag/.

The commentary around ratings, and by association wealth and enhanced competitiveness, would indeed suggest that the better rated countries are at a strategic advantage in terms of international competitiveness. This would seem to support my finding that the wealthier countries are better placed to adjust their policy in order to take greater advantage of changes in how business is conducted.

7.4 SUMMARY OF RESULTS

My initial research commenced with the objective of showing an alignment between a country's involvement within GVCs and their national content policy. Despite the implied commitment to more flexibility by ECAs as a consequence of GVCs, as a general conclusion, the models containing the independent variables relating to GVC integration and value-adding activities within GVCs did not perform to the extent envisaged. Although the small number of cases meant that obtaining statistical significance was always going to be challenging, my analysis identified only a partial association with GVC participation and

basically no association with the value-adding activities within GVCs. Instead, my findings seemed to suggest that the wealth of a country was the significant factor. This outcome surprised me and can be classified as an anomaly requiring further analysis. I approached the further analysis making use of an analytic approach referred to as abduction.

First, to confirm the anomaly, I reviewed the websites and questionnaire responses of the ECAs and confirmed that it was not unreasonable to have assumed that there should be an association between the national content policy of ECAs and a country's participation within GVCs. In addition, I re-estimated the analysis substituting the value-added services variables with an alternative variable, R&D, and still found no significant contribution by this variable. In case my emphasis on the services aspect of value-added was biased towards a certain economic structure, I also estimated the model focusing on the export value-added content of manufactures, but again produced a similar result. I, therefore, felt comfortable that my identification of an anomaly was correct.

Next, I considered various hunches as to what else could be influencing the national content policy setting of ECAs. I focussed on unemployment rates and country competitiveness. In my systematic review of the websites of the ECAs I found numerous ECAs referring to the importance of these factors. My statistical analysis identified no links between unemployment rates and high / low national content. However, I did identify a correlation between high / low national content policy and country competitiveness. Country competitiveness did not add any value to my model when I conducted a binary logistics regression. However, when I re-estimated the model with interaction variables considering the interaction of GDP and GDP per capita to the global competitiveness index, my model produced numerous variables that, while they were not significant, were very close to the .05 significance level. In particular, the GDP per capita (wealth) variable, and the wealth variable interacting with global competitiveness, performed well (.055 and .057 respectively) and the unemployment variable (.066) and global competitiveness index (.068) also performed reasonably well. This was striking given my limited degrees of freedom. Thus, the final model suggests that a number of factors remain important, including competitiveness and unemployment. However, it was increasingly obvious from the analysis that wealthy countries and in particular wealthy and competitive countries are better placed to respond to the varying dynamics associated with their economic activity.

In order to verify the importance of wealth, I reprocessed my analysis by substituting my wealth variable, GVC per capita, with an alternative wealth variable. After this analysis, I remained confident that my conclusion that the wealth of the country was facilitating the decisions of ECAs regarding national content policy was reasonable.

Finally, I again reviewed the websites of the ECAs and found a number of references from the ECAs (especially those from wealthy countries) confirming the importance of their country rating. Buoyed by S&P's confirmation of a concrete link between wealth, competitiveness and country rating, I felt confident in concluding that the wealth of a country indeed was playing a critical role in facilitating the decisions that governments make with regards to their national content policies.

I had revisited the evidence from a range of sources. I empirically (re-)examined evidence from global databases, reviewed questionnaires that probed ECAs about their choices and also why those choices had been made, and reviewed all available websites from ECAs, both those that had completed questionnaires and those that had not. Throughout this process a consistent message emerged and that was that the wealth of a country was critical in facilitating the national content policy decisions of the ECAs. This facilitation was even more pronounced in the case of wealthy and competitive countries. This is an important conclusion that I discuss in the next chapter.

8 CHAPTER 8: DISCUSSION

8.1 INTRODUCTION

The decisions that ECAs and their governments make regarding national content policies, are most likely to be associated with the wealth of the economy. This association can be even more pronounced in the case of countries that are both wealthy and globally competitive. While key issues such as GVC participation and unemployment rates all play a role in informing government policy, it appears as if the wealthy and the more competitive countries are better able to adjust policy to take advantage of changing global trade dynamics

Reviewing an article by Drysdale (2014) on GVCs and national content policies, the author refers to the influencing role of GVCs, but concluded that the varying ECA national content policies was most likely a factor of economic size, economic philosophy and economic culture. Drysdale's (2014) reference to economic size differed somewhat to rest of the literature that implied that GVCs were driving the national content policy decisions of ECAs. However; my results, and bringing a new perspective to the ECA and GVC literature, overwhelmingly suggest that the wealth of a country was the strongest influencer and that wealthy countries, particularly those that are more competitive, are better placed to take advantage of global economic factors.

In this chapter, I explain the implications of my findings.

8.2 GLOBAL VALUE CHAINS REMAIN RELEVANT

In attempting to answer my research questions, I expected to determine that GVCs were influencing ECA national content policy and that a country's position within the value-added activities of GVCs would also influence their national content policies. As it turned out this was not to be the case. However, I was able to determine that ECAs have indeed revised downwards their national content policies in recent years, and this has occurred during a similar time to the advancement of GVCs.

Furthermore, several ECAs explicitly recognise the realities of GVCs and the global fragmentation of production and suggest that their policies are adapting to these realities. For example; the act establishing EKF, the Danish ECA, emphasises that they facilitate Danish companies' participation in GVCs (https://ekf.dk/media/risi1b0m/ekf-loven-2020.pdf). Switzerland notes the adaption of their cover policy in response to GVCs and Sweden highlights their shift in focus towards national interest and value-adding activities, in recognition of GVCs.

In addition, this was supported by my questionnaire; GVCs, together with job creation, scored the highest number of 10s, but GVCs as a reason had the highest average and the highest number of high scores from the questionnaire responses received. Even ECAs such as Spain and Germany that have relatively high national content policies stated GVCs as a key reason for lowering their national content policies.

The literature review and the commentary provided by ECAs via their websites and questionnaire responses all pointed towards a strong correlation between national content policy and GVCs, and yet my quantitative research would suggest that in fact this association is limited. This does raise questions about the basis of government decisions regarding national content policy and GVCs. However, these findings suggest that governments are at least acknowledging the existence of GVCs, understand that GVCs matter and see GVC participation as a meaningful policy goal. Governments are prepared to revise their national content policies and to allow for flexibility in terms of sourcing of inputs, which enables their exporters to benefit from GVCs.

8.2.1 FLEXIBLE NATIONAL CONTENT POLICY - A MEANS TO TAP INTO GLOBAL SUPPLY CHAINS OR AN OPPORTUNITY COST?

In a number of cases, ECAs were quite dramatically changing the firms they targeted. Traditionally, ECAs targeted domestic firms encouraging them to expand their sales and activities internationally, in anticipation of this creating domestic jobs. While this remains a key objective of ECAs, a number are supporting foreign firms, encouraging them to enter the country and to make use of local production capacity.

Thus, several ECAs are utilising a flexible approach to national content as a means of encouraging foreign firms to tap into supply chains located within the ECA's country. My research commenced with the understanding that exporting firms were securing inputs from foreign suppliers and in response ECA's were revising downwards their national content policy. However, several ECAs that have revised downwards their national content policy were proposing to foreign firms that if they secured sufficient supplies from within the ECA's country, then the foreign firm could also benefit from the ECAs financial products.

The Italian ECA and the UK ECA are explicitly encouraging international organisations to incorporate Italian and UK companies respectively within their international supply chains and are using their flexible approach to national content to facilitate this. The Italian ECA refers to its push strategy, which is a financing solution to foreign (non-Italian) companies in anticipation of future procurement of goods and services from Italy. Italian suppliers are not yet identified but the target company is encouraged to make use of Italian companies within their supply chain. The UK ECA recognises the importance of showing flexibility with regards to procurement and sourcing and highlights that it remains eligible to support transactions where up to 80% of the content is sourced from outside of the UK. The reference adds that they are also available to help overseas buyers access UK supply chains to maximise the level of UK content within the transaction. Similarly, Canada talks about helping Canadian companies gain access to global supply chains and the Canadian ECA emphasises that they are available to facilitate connections between Canadian suppliers and international buyers. (https://www.sace.it/en/solutions/category-detail/product-detail/Untied-facility-Italian-supplier-yet-to-be-identified ; https://www.great.gov.uk/how-we-assess-your-project/ ; https://www.edc.ca/en/about-us.html).

Countries such as United Kingdom, Canada and Italy believe that a reduced national content policy can facilitate the incorporation of their companies into global supply chains, thereby creating more trading opportunities for its companies and contributing positively to job creation. Van Assche and Gangnes (2019) offer the example of the Canadian ECA providing finance to Volkswagen as an incentive for Volkswagen to consider incorporating Canadian firms into its supply chain. Similarly, Dawar (2020) provides examples of UK and Italy.

This is a relatively recent phenomenon appearing in the literature and my research builds on this recently identified trend by confirming that certain ECAs are utilising a flexible national content approach to encourage large foreign firms to incorporate their country's firms into global supply chains. These ECAs have reduced their content requirements, indicating a willingness to accept the existence of GVCs. However, these ECAs have also expressed encouragement of foreign recipients of their financing to look towards integrating the ECA's companies into future supply chains. Furthermore, these flexible and low national content policy ECAs provide an incentive for foreign companies to establish themselves within the ECA's economy, enabling them to tap into the ECA's funding tools without requiring particularly high content hurdles.

Horner (2017) highlighted that companies, in making location choices, look to benefit from regulatory differences. While outside the scope of this research, there are numerous examples of corporates setting up operations in various countries in order to benefit from the flexible national content policies of those countries. Certainly, exporting companies operating within sectors that generally benefit from ECGs (Export Credit Guarantees) should consider how their locational and input sourcing choices can benefit from setting up operations within countries with flexible national content policies that they can tap into. In particular, this would make sense for companies located in emerging markets that do not have strong governments and ECAs able to provide favourable financing terms for their customers. An emerging market exporter without an ECA, or at best a weak ECA, behind it will continue to lose contracts to exporters that have strong ECA support. Therefore, such companies are likely to consider relocating or at least setting up a part of their operations in countries with strong and flexible ECA support.

There is a dual strategic approach being followed by these flexible ECAs, who see the opportunities that GVCs and global supply chains can provide to their local firms. On the one hand they are encouraging large global firms to include the ECA's firms within their supply chains in exchange for access to beneficial financing, while on the other hand creating flexible policies that encourage firms to relocate to the ECAs country in order to benefit from the financial support that the ECA can offer to the beneficiaries of exporters. Certainly, these ECAs would fall into the role of the state defined as facilitator by the literature, an active role that creates an environment supportive of GVCs (Alford & Phillips,

2018; De Marchi & Alford, 2021; Mayer & Phillips, 2017). This approach would indicate that while ECAs were accepting the existence of GVCs and thereby agreeing to more flexible policies, this acceptance is not a passive resignation of its reality, but rather a means to enhance the integration of its companies into the global trading environment. Furthermore, this approach recognises the major role that lead firms play in determining how and where activities within GVCs are located, a point which has been raised within the literature (De Marchi & Alford, 2021; Mayer et al., 2017; Pahl et al., 2019).

As highlighted, the literature has started recognising these developments. However, the literature provides scant reference to the implications of such policies, something that scholars, especially those focused on developmental policies for emerging markets need to be aware of. In fact, this study, supports the call by Mayer & Phillips (2017) for a better understanding of state agency and state power within the governance of GVCs required to support the pursuit of more equitable and sustainable development. In particular, the benefits to a country of offering such support are not clear, and it is hardly surprising that the wealthier countries are more prone to offering such a relatively unproven approach.

These ECA policies are designed to strategically improve the competitiveness of firms within the ECAs economy, either by facilitating their incorporation into the global supply chains of large firms or by encouraging the investment within their economy by foreign firms. The economies of ECAs that provide the strongest financing, in other words the wealthier economies, with flexible national content requirements, stand to benefit the most from such policies. These developments emphasise the growing use by governments of ECAs as a means of country competitiveness and highlights the preferential position that the wealthier countries are in. Supporters of ECAs tend to emphasise the affordable funding that emerging markets benefit from when utilising the services of developed market exporters and contractors, and there is an element of truth to this. However, what is overlooked and missing in the previous literature is that the system favours the awarding of these export contracts to the exporters from the wealthier countries and fails to recognise the disadvantaged position that emerging market exporters are in. I come back to this point later on in the discussion chapter.

Looking at these flexible policies from a different perspective, what is unclear and not referenced in the literature nor in any of the findings of my research is the opportunity cost associated to these flexible policies. The UK government is prepared to fund 100% of a foreign project in return for 20% UK content. The assumption is that the benefits for the country and its corporates associated with that 20% are extremely valuable either immediately or in the future and that the government is therefore justified in allocating 100% of the country's finances towards the export. In the case of Canada and its support of Volkswagen where 100% financing was offered, there was no immediate benefit for the country. The decision was based on an anticipation of future benefits. In both these examples, the question can be asked as to whether this was the wisest use of government resources. Clearly these governments and their ECAs are of the view that it is a sensible use of state resources, but what this research has highlighted is that there remains a number of differing views and a multitude of competing factors at play. There is no concrete evidence of the returns outweighing the costs. Furthermore, it tends to only be the wealthier countries that have the luxury of being able to use an exponentially greater portion of state resources than the immediate direct benefit, in anticipation of future returns.

This research has evidenced the downward trend in national content policies and that this is largely a new development. But because of the uncertainty associated with the actual national benefits associated with the ECGs issued by ECAs, governments (and specifically their policy instruments, the ECAs) should be held accountable for flexible policies that utilise state resources. Regular and concrete reports should be provided evidencing the benefits of introducing these flexible products. For example, the Canadian ECA should be regularly reporting back as to whether entities such as Volkswagen actively revised their supply chains to incorporate Canadian companies as a result of the financing support previously offered.

8.3 JOB CREATION AS A CONTINUED KEY CONSIDERATION

My research builds on the traditional literature on ECAs that emphasised the importance of job creation in ECA policy decision making by strongly confirming that job creation remains today an important consideration to ECA policy, despite the radically changed trading

environment within which ECAs now operate. In fact, my research identified examples of both high content and low content policy ECAs emphasising the importance of job creation.

Job creation never falls away as a priority for governments. What remains unclear, is which strategy will produce the most favourable results. Given that governments need to be seen as ensuring that its voters have jobs, poorer countries are less likely to embrace changes if the results on local employment levels are not known. South Africa is a case in point. South Africa; one of the poorer countries in my dataset, with high unemployment, reversed their downward trend in national content policy stating a concern for job losses.

8.4 THE COMPLEXITY OF MUTIPLE INFLUENCES

The nature of government policy is that a government has to decide on an optimal course of action even though it may hold contradictory positions. For example, a country well integrated within GVCs is not necessarily focussing on the high value-adding activities. Countries' strategic approaches to these factors will likely differ.

New Zealand scores low in terms of GVC participation, but high in terms of domestic value-added services, both in terms of manufactures and total exports. New Zealand's national interest approach is more in tune with their focus on domestic services, the higher value-adding activities within GVCs, and not their low GVC integration. The Czech Republic scores high in terms of GVC integration and relatively low in value-adding activities. However, the country, out of line with their significant integration within GVCs and more in line with their positioning within the low value-adding activities, have adopted a high national content policy.

It is noteworthy that New Zealand is a relatively small economy in terms of GDP but quite a wealthy country in terms of GDP per capita. It is easy for such a country to introduce a flexible national content policy given that their exporters potentially have limited options to source product from within their country, and given that the country is already attracting the higher value-adding service-related activities. Again, this is a potential example that decisions may have little to do with GVC integration or value-adding activities and more

about size and wealth. New Zealand, being a small but wealthy country can more easily adopt a flexible national content policy.

My research is enlightening to both scholars and practitioners in that it highlights the importance of multiple factors. Notably; GDP per capita, unemployment, competitiveness and the interaction between GDP per capita and competitiveness were all contributing to the decisions to opt for national interest or low / high national content.

Some countries seem prepared to fully embrace the principles of GVCs and relax policy to support their companies, while other countries do not want to let go of the goal of job creation, preferring to adopt more conservative policies.

Mexico recognises that it cannot outperform the large economies of USA and Germany but understands its ability to play a niche role within the automobile industry and that a flexible content policy approach is the best way to preserve and create jobs while simultaneously acknowledging the realities of the country's positioning within GVCs.

Other countries adopt a different view. Austria, while noting the influence of GVCs, prefers to maintain a higher content policy as it wishes not to lose potential production to other countries.

Various ECAs highlighted both maximising jobs and GVCs as key factors influencing their national content policies and a number of these were in the middle range of national content policy (although reported as category high), ranging between 40% and 50%. This could suggest a compromise decision on their national content policy, recognising the influence of GVCs and therefore amending the national content policy downwards, but at the same time fearing the impact that this would have on maximising jobs, resulting in a decision somewhat in the middle.

Policy decisions are arguably simpler for the larger, wealthier and more competitive countries. Wealthier countries may be less concerned by the negative fallout – whether politically or economically – of the potential loss of jobs than poorer countries when trying out new approaches to reflect changes in the global economy.

This is an important enhancement to the existing literature. Large economies can afford to be more prescriptive on national content knowing that their companies' competitiveness is not that adversely effected by them having to source a larger portion of content within their own country. At the same time, because wealthier economies are already well off, it is reasonable to assume that they are already attracting higher value-adding activities. Even if not, there is an economic buffer sheltering them should it transpire that they are being prejudiced by having lower and more flexible national content policies. The decision is clearly more complicated for countries that are neither the largest nor the wealthiest nor the most competitive.

8.5 EXPORT CREDIT AGENCIES - A MEANS TO ENHANCE COUNTRY COMPETITIVENESS

My systematic review of the websites of ECAs, revealed significant referencing by the ECAs to competitiveness, and the importance of competitiveness was underlined by my analysis. It would appear that ECAs recognise that their offerings play a role in enhancing the international competitiveness of exporters by enabling them to offer attractive financing proposals to their potential customers.

Bearing in mind that my sample was already skewed towards the economically more successful countries, the implications for countries that are relatively poorer are concerning. Lacking the wealth to introduce this additional tool to enhance their competitiveness, they are at risk of falling even further behind. I come back to competitiveness later in this discussion chapter as naturally there is a close tie up between wealth and enhanced competitiveness.

8.6 SIZE DOES MATTER

The focus of my research was specifically on national content policies and GVCs. However, it turned out that what I had initially conceptualised as control variables; the size of the economy and the wealth of an economy, working together, produced strong predictive

results of high / low national content. In the World Bank (2021) book titled The Changing Wealth of Nations 2021 Managing Assets for the Future, the relevance of considering GDP together with country wealth is highlighted.

The size of the economy has long been identified as a factor that influenced the ability of firms to source adequate content from within their domestic economy. Drysdale (2014) highlighted that USA firms were much more likely to be able to source content within the large USA economy when compared to Canadian firms trying to source content within the smaller Canadian economy. Bischoff (2014), Hunke (2014) and Schipfer (2017) all commented on size being a factor influencing the national content policies of ECAs.

As a general comment, the larger economies tend to have higher national content policies. For example, the three largest economies in my research; USA, China and Germany all have high national content policies. It would therefore appear that governments from large economies prefer to maintain higher national content policies. Certainly, exporters within a large economy are better able to source products from within their own economy. This means that the country is less likely to risk a loss of competitiveness by insisting on local content. Authors such as Van Assche and Gangnes (2019) and Drysdale (2014) note that the large size of the USA economy ensures that USA firms have a substantially larger pool of intermediate input providers within their own country to consider than other countries with smaller economies such as Canada and Mexico.

8.7 NATIONAL CONTENT POLICIES AND THE WEALTH OF AN ECONOMY

My review of the literature identified very little reference to the impact of the wealth of an economy on the national content policy of ECAs, other than the indirect link that can be drawn based on an inference to value-adding activities. However, GDP per capita was the one variable that was consistently significant in my statistical analysis: wealthier countries were more likely to adopt low national content / national interest policies. This outcome came as a surprise to me, especially given the lack of reference to it in the literature. A review of the dataset confirms that some of the wealthiest economies in terms of GDP per capita,

such as Luxembourg and Norway, have low national content policies, whereas some of the poorer countries like South Africa, Turkey and India have high national content policies.

The strong facilitating role that the wealth of an economy has on ECA national content policy setting is a worrying outcome, in that it highlights the vulnerability that smaller and weaker economies are exposed to when trying to compete in the international trade arena.

8.7.1 CONNECTING THE DOTS: WEALTH, RATING AND COMPETITIVNESS

ECAs and governments are unlikely to claim that they have adopted a flexible policy because they are wealthy. It is far more acceptable to make a statement that they have adopted a flexible content policy in response to GVCs or that they believe that their policies maximise job creation. Therefore, the likelihood of finding some direct reference to an ECA amending their national content policy as a result of them being wealthy is remote. However, my systematic review of the websites of ECAs identified significant reference to country ratings and to country competitiveness. S&P confirms that their rating methodology is strongly influenced by the wealth of a country. Therefore, if wealth facilitates national content policy setting, then one can infer that the best rated ECAs, the AAA-rated ECAs, are best placed to consider their policies.

These AAA-rated ECAs promote the favourable position that they are in and in fact utilise it as a means of attracting interest in their offerings and by association interest in dealing with their exporters. A marketing brochure published by the Danish ECA emphasises the “AAA-guarantee” and refers to their ability to “secure stable financing at competitive rates”. Similarly, in a document produced by EKN titled Purchase from Sweden and benefit from attractive financing, the following quote is provided “If you source from Sweden or Swedish companies you will have access to a very attractive financing offer backed by the Swedish state”. The document also refers to the triple A-credit rating that results in attractive rates and conditions. The same document references various examples where it states that customers in markets like Jordan and Turkey are drawn to Swedish suppliers due to the attractive funding supported by the Swedish ECA. One Swedish supplier is quoted as saying that this provides them with “a continued competitive advantage in a very tough competitive

field". Another example is given involving an Israeli supplier to Suriname, where the combined benefit of low national content requirements (30%) and the attractive financing as a result of the triple-A credit rating were instrumental in encouraging the Israeli contractor to source material from Sweden. Switzerland acknowledges that their big advantage is their AAA-rating which facilitates the obtaining of financing at extremely attractive terms. On the other hand, the South African ECA laments their low rating and emphasise the challenges that exporters from lesser rated countries experience when competing internationally with exporters from highly rated countries.

While these references do not explicitly refer to wealth and national content, they highlight the link between exports and the importance of the credit rating of ECAs and their countries. This establishes a close link between competition and attracting exports and the ability to offer attractive financing, which clearly favours the better rated countries, which generally are the wealthier countries.

This point was not lost on the Prime Minister of Barbados, Mia Amor Mottley, on 14th October 2022 at the Sixth Annual Babacar Ndiaye Lecture, held on the side-lines of the World Bank-IMF Annual Meetings in Washington DC, USA. She called for a reconfiguration of the global financial architecture to reflect the needs and participation of the Global South. In her speech she highlights various examples emphasising the additional challenges being faced by the poorer countries.

Ironically, many of the highly rated, OECD ECAs, are calling for a fairer ECA competitive landscape. The Danish ECA perfectly reflect the irony. In sections of their website, they state:

> We work to ensure that international trade is effected on fair and equal terms, so that exporters can concentrate on competing based on the quality and price of their products.

However, elsewhere on their website they state:

> You can gain a considerable competitive edge on other suppliers if you are able to offer your customer long-term financing on competitive terms. That is where we can

> help. Offer your customer financing and secure the order … It takes more than just a strong product to succeed in export markets. Financing is increasingly used as a competitive parameter in the struggle to fill order books. Many companies find that they win the order if they can offer their customer an attractive financing solution.

The UK, equally ironic, states the following:

> We also operate under international (principally OECD) agreements that seek to create a 'level playing field' by setting terms under which national credit agencies can support exports. However, not all export credit agencies (ECAs) are party to these international agreements and competition for UK exporters is increasingly from non-OECD countries whose ECAs are not bound by these agreements … we aim to: achieve fairer competition by seeking to establish a 'level playing field' internationally through obtaining multilateral agreements in export credit policies and practices.

However, they also refer to the benefit of their state support enhancing the competitiveness of their exports:

> Offering attractive financing terms for buyers of UK goods and services can help exporters make their offering more competitive. UKEF aims to support UK exporter competitiveness.

On the one hand these ECAs fear the rising competition from emerging markets such as China and India, while on the other hand they are happy to consider flexible national content policies and to allow their exporters to offer preferential financing terms to potential foreign buyers based on attractive pricing that is directly as a result of the enhanced rating of these ECAs. These ECAs are calling for a level playing while at the same time claiming that their excellent credit rating provides their exporters with the competitive edge to win more international business.

8.7.2 REBALANCING THE VALUE OF EXPORT CREDIT GUARANTEES

This research anticipated being able to show strong linkages between the national content policies of ECAs and countries degree of GVC participation and their position within the value-adding activities of GVCs. However, the outcome of this research, while confirming the influence of GVCs on the national content policies of ECAs, indicates that reality is much more complex and that multiple factors are at play influencing the decisions of governments.

This research deviates from previous research by confirming that large economies and in particular the wealthy and more competitive economies are much better placed to make decisions regarding national content policies. The larger economies are able to be more prescriptive with regards to insisting on high national content policies and wealthier and competitive economies are much more willing to consider flexible, low content policies.

The research has also highlighted that governments, often through the introduction of flexible national content policies, are using ECAs to influence the competitiveness of their companies and their country, including enticing global lead firms with attractive financing in the hope that they incorporate companies from within the ECAs country within their global supply chains. However, where does this leave countries that are neither large nor wealthy, generally the emerging economies, and how well placed are they to truly compete with other economies and ECAs?

With a few exceptions, like Mexico, emerging market ECAs tend to have higher national content policies. This pragmatic approach by Mexico may not be that surprising. Gereffi, (2015) acknowledges that Mexico is heavily involved in manufacturing GVCs and attributes its success to its high degree of trade openness, noting that the country has free trade agreements with 44 countries – more than double China and four times more than Brazil.

For the rest, it would appear as if these countries fear the potential job losses that may occur if they relax their content requirements. Rather than taking a view, shaped by awareness of the uncertainty of outcomes of such a choice, that a flexible policy will bring long term gains to the country, they look at the more immediate concerns of potential job losses if their companies were to start sourcing a greater portion of inputs from abroad, even if this means that these companies are less competitive when competing in the international trade arena. To what extent such fears are economically motivated, and to what extent they are political, is an avenue for future research.

A key contributing factor to the value of ECAs is the affordable funding that they bring to the table. The degree of affordability improves the better the international credit rating of the country and hence the ECA. This rating tends to improve the larger and wealthier the country, suggesting that there are to some extent virtuous and vicious cycles at work. This

affordable funding is what encourages buyers to source products from the funding country's exporters and what enables ECAs to offer global lead firms attractive financing proposals in the hope that they start incorporating companies from within the ECA's country into their global supply chains. The ECA system is stacked in favour of the larger and wealthier economies, both in terms of facilitating their strategic choices when it comes to setting policy and also in terms of the attractiveness of the export financing that they are able to offer.
It is extremely hard to influence government strategy, and to convince governments that see themselves as too vulnerable to fully embrace a changed economic global order to implement domestic policy changes that can help it take better advantage of the new economic reality. However, the terms offered by ECAs can provide a means to improve the situation of exporters that are not from wealthy countries.

The literature review highlighted that in the earlier years of ECA activities, certain ECAs and their governments were issuing ECGs that could be deemed to be state subsidies. These ECAs were running at a loss, accepting the consequences of this with the knowledge that their exporters were winning export contracts. This resulted in a stricter regulation of the sector and the introduction of various policies, especially at the OECD level which at the time were where most ECAs were located. These policies were intended to create a level playing field and necessitated certain minimum requirements to ensure fair competition.

However, this fair competition was really focused on ensuring that the advanced countries operated fairly when competing with each other and has very little regard for emerging market ECAs, either as strong competitors or as potential casualties of aggressive advanced economy competition. For example, the OECD Arrangements specify a minimum interest rate which is a commercially indexed rate calculated monthly by the OECD for each participant based on the interest rate on its government bonds + 1% (Hopewell, 2021). Of course, this minimum interest rate for the majority of OECD members is at a level significantly lower than any interest rate that the vast majority of developing markets can offer. In essence, the level playing field envisaged by the more advanced economies of the OECD, an organisation that Hopewell (2021, p.638) describes as the "rich man's club", is at a level where only they can compete.

My literature review on the traditional rationale for establishing ECAs made some reference to the competitive influence of ECAs and Ascari back in 2007 referred to the “war chest” in the trade arena. However, other than the occasional exception regarding grievances against China, much of the more recent literature has emphasised the valuable role that ECAs have played in times of crises, painting a picture of joint collaboration to address global challenges. To a large extent the recent literature has neglected to highlight the competitive nature of ECAs and the strategic use of ECGs by governments to enhance country competitiveness. My research commenced with the objective of trying to understand linkages between national content policies and GVCs and the positioning of countries within GVCs in terms of value-adding activities, but what my research has revealed, is that the system and the ability to determine national content policy is heavily facilitated by the size, wealth and competitiveness of the country involved.

The global trading environment has changed significantly in recent years with the introduction of GVCs and the rise in emerging markets. The OECD ECAs themselves are concerned about the competition posed by the non-OECD ECAs who are not committed to the level playing field requirements of the OECD. This position of the OECD ECAs is paradoxical. The mere existence of ECGs and the fact that governments are able to support the financing of foreign projects ensures that there is never a level playing field. The value of ECGs is heavily weighted in favour of the better rated countries, in essence the OECD countries, or the very large emerging market countries. The better the rating, the cheaper the financing that can be offered and therefore the more likely that exporters from these better rated countries are going to win the contracts.

All things being equal, an exporter from a highly rated country with a strong ECA is in a significantly advantageous position when competing against a similar exporter from a country that is not as well rated, or worse still doesn’t even have an ECA to support it. Even the USA, whose exporters are able to benefit from the strong rating of the USA recognises this point. The President and Chairman of US Exim in the June 2020 Report to the USA Congress on Global Export Competition (Export - Import Bank of the United States, 2020, p. 4) stated “I wholeheartedly agree with those who argue that, ideally, economic freedom and prosperity are greater in a world without government-sponsored export credit agencies.

Indeed, the agency's Charter encourages an end to all "predatory export financing programs and other forms of export subsidies".

It is apparent that ECAs and their governments are likely to increasingly utilise ECA policy to influence the competitive landscape of international trade. Large emerging market economies such as India and China are increasingly able to offer competitive financing terms in support of their exporters which is ensuring that developed market exporters do not always win the foreign contracts because of the backing of their governments. However, there remain many emerging market countries that are not able to provide their exporters with the necessary support to enable them to win contracts.

Some of these exporters could look to tap into the favourable and flexible terms offered by the various ECAs by relocating some of their operations to these strong ECA countries. However, such a move is not in the best interests of the country of origin of these companies and in fact further enhances the competitive position of wealthy, advanced economies.

Institutions such as the World Bank and the African Development Bank, who are rated in line or even better than many OECD countries, can consider counter guaranteeing the ECGs issued by some of the lesser rated, emerging market ECAs. This will enable exporters from these countries to compete on a more even footing with the more developed market exporters. For example, a UK exporter supported by a low national content policy of their ECA and the highly rated ECGs issued by the UK government is in a far more favourable position than a South African exporter backed by a high national content policy and the relatively low rated ECG issued by the South African ECA. However, if the South African ECA's ECG was counter-guaranteed by the World Bank or the African Development Bank, the quality of the South African ECG would be on the same footing as the ECG issued by the OECD ECA. This would allow the buyer of the export contract to access similar financing terms regardless of which exporter won the contract. Only in such circumstances could ECAs claim that there was indeed a level playing field.

If these highly rated institutions were prepared to provide such support to emerging markets, then countries that to date have not established ECAs, probably because of their acceptance that the quality of their ECGs would not attract the necessary beneficial financing terms, may

also now establish ECAs. This approach would ensure that exporters globally would be able to compete on a truly equal footing, negating the negative effects of the current environment that is heavily biased in favour of exporters from the stronger rated countries.

My research thus not only identifies the growing ECA competition occurring within an imbalanced international trade arena, but also proposes a practical suggestion not previously considered, that could be implemented by global developmental institutions. It is my hope that my research will encourage scholars and practitioners to explore this suggestion further.

8.8 THE FUTURE OF EXPORT CREDIT AGENCIES

The recent rise in ECA activity and the particularly valuable role that they have played in recent crises, such as the global financial crisis and the recent global pandemic, likely ensures the continued existence of ECAs. The new crisis being discussed by ECAs involves climate change and ECAs are gearing up to play a catalytic role in supporting projects that will be favourable to the environment.

In all probability, ECAs and the strategic use of ECGs as a means of international competition is likely to intensify. Export - Import Bank of the United States (2020) in their report to the U.S Congress comment that: “Increasingly, some countries employ their ECAs to further their geopolitical aspirations” (p. 5) and in particular emphasise China’s aggressive and strategic use of export credit finance to influence global competition. The report goes on to state that various governments commitments to their ECAs have benefited their national economies through deepening trade relationships and strengthened supply chains. The lack of regulations related to national content provides ECAs and their governments with the flexibility to adjust policy to shape their country’s global competitiveness.

The recent global pandemic has triggered fresh debate regarding GVCs and governments are reconsidering their views given supply chain uncertainties. It remains to be seen whether these concerns will spill over into a change of ECA policy with regards to national content. What is clear is that ECAs are using the pandemic as a reason to intensify their activities. In

November 2021, the OECD ECAs lowered the down payment percentage required from 15% to 5%, quoting market failures by the private sector as the reason for implementing the change https://www.oecd.org/trade/topics/export-credits/documents/valid-common-lines-for-web.pdf. This is likely an indication that ECAs and their associated governments intend to further intensify their role in supporting the international competitiveness of their exporters.

To demonstrate how dynamic this area is, in the period post my data gathering and during the pandemic, at least three ECAs have changed downwards their national content policies, namely SERV from Switzerland, CESCE from Spain and US Exim from the USA. All three ECAs were high national content policy ECAs. SERV have reduced their content from 50% to 20%: https://www.serv-ch.com/en/products/requirements-for-acceptance-of-the-insurance/. CESCE has reduced their national content policy from 70% to 50%: https://www.cesce.es/documents/20122/61247/Eligible+amounts+in+CESCE+coverages+on+behalf+of+the+State.pdf and US Exim have reduced their national content policy from 100% to 51% in ten transformational export areas. All three have become less strict in their requirement of national content, although two would still remain high national content policy ECAs in terms of my definition post the change. This would suggest that the pandemic is unlikely to trigger an immediate reversal of the downward trend in the national content policies of ECAs.

ECAs are particularly interested in exports and therefore do not necessarily carry the same degree of sensitivity as strategic goods required for domestic consumption. Therefore, government policy could still encourage a shift from traditional GVCs to domestic and regional GVCs in order to protect their domestic consumption while allowing their exporters to make use of foreign suppliers through low national content policies. Such a move would likely result in a further decoupling of the correlations between national content policy and GVC integration. It is not unreasonable to surmise from my research that future government policy with regards to ECAs is more likely to be driven by policies that enhance the international competitiveness of exporters and attract foreign firms to relocate to the ECAs country or at least to tap into the supply chains of the ECA country, than GVC integration per se.

8.9 CONCLUSION

The traditional view in the literature was that ECAs implemented a high national content policy in order to preserve jobs. However, governments are revising their national content policies in order to make them more flexible and in a number of cases switching from a national content approach to a national interest approach. To some extent these changes are in response to GVCs, however, despite a changed international trading environment and a fundamental shift in the ECA national content policy of many ECAs, job creation remains a key considerate in the national content policy decisions of ECAs.

My research highlights that governments are increasingly using their ECAs strategically to influence the competitiveness of their exporters and that the flexibility that they are allowed in terms of national content policy provides fertile ground to facilitate this competitiveness. This is a fundamental shift from the existing literature that tends to create the impression of joint collaboration amongst ECAs focussing on addressing global crises.

In addition to highlighting the competitiveness of countries and ECAs, this study emphasises that decisions regarding national content are far easier for the larger and wealthier countries. If size and wealth matters and governments are utilising ECAs to enhance the competitiveness of their exporters, then this places exporters from smaller and less wealthy countries in a difficult position, negatively impacting their ability to compete in the international trade arena.

The more conservative policy stance of these smaller and less wealthy countries can be explained by keeping in mind the ongoing importance of job creation and the uncertainty of undertaking some of the more innovative ECA support activities, like supporting foreign firms to participate in local value chains. But there is another relevant consideration.

The smaller and less wealthy countries, generally emerging markets, are also unable to support their exporters to the same extent as the larger and wealthier countries, due to their inability to bring the same degree of financing to the potential customers of their exporters. These conclusions should be particularly enlightening albeit worrying to scholars and practitioners interested in the development of emerging markets. In order to counter balance

the inequality of ECG competition identified within my research, I propose that institutions, such as the World Bank and the African Development Bank, should consider counter guaranteeing the ECGs issued by the weaker ECAs thereby enabling all exporters to compete on an equitable level.

In closing, ECAs have proven their worth in recent years, triggered by the global financial crises and the Covid-19 pandemic, where they were required to step up their activities in support of trade. The important role that they played ensures their continued existence. Initial indications are that, despite potential changes in GVCs with a growing emphasis on regional and domestic GVCs, ECAs are likely to continue their flexible approach to national content driven increasingly by a desire to improve their competitiveness and less by GVCs.

However, the fact that ECA policy decisions are facilitated by size and wealth and that competition is further enhanced by size and wealth, ensures an unfair competitive landscape prejudicing the smaller and poorer economies. This conclusion, not previously raised to this extent in the literature, provides an important new understanding of government policy, GVCs and the international trading environment and should be of particular interest to scholars and practitioners interested in the upliftment of emerging markets.

9 CHAPTER 9: CONCLUSION

This study set out to explore government policy and GVCs, focussing on GVC integration and the value-adding activities of countries within GVCs. The setting that I chose to conduct this research was the national content policy of ECAs. My research confirmed that this was a particularly good setting to consider government policy and GVCs, given the close association between governments and their ECAs. I commenced my research making use of quantitative data, utilising binary logistics regression; a novel approach not previously seen within the ECA literature.

I anticipated that I would find a close association between the national content policy of ECAs and the degree of country integration within GVCs and a country's positioning in terms of the value-adding activities within GVCs. However, my findings deviated from the popular view within the literature, by indicating that decisions regarding ECAs and the national content policy of ECAs is significantly facilitated by the size of an economy and more importantly the degree of wealth of an economy. Large economies are able to be more prescriptive in terms of national content requirements, while wealthy economies are able to be more flexible with regards to national content. This outcome came as a surprise to me and required further investigation. I conducted this further analysis making use of abduction.

I then systematically reviewed the websites of ECAs and the questionnaire responses received and confirmed that my expectations were reasonable and that I was justified in being surprised by the initial outcomes of my research. I then reprocessed my research making use of alternate variables to check that my choice of variable was not the cause of my results. Having ascertained that my results were correct, I then considered various hunches that could be influencing the results. I considered unemployment and country competitiveness as possible contributing factors to the national content policy decisions of ECAs. On their own, they were not factors, and country wealth continued to be prevalent as the dominant contributor. However, when re-estimating my final model with the inclusion of interaction variables, the results reconfirmed the importance of wealth but also highlighted that other variables were also contributing including unemployment and competitiveness, but also wealth interacting with competitiveness. This outcome enabled me to conclude that

various factors were contributing to the decision of ECAs, but that wealth and wealth interacting with competitiveness were strong influences of national content. To verify this conclusion, I reprocessed the results making use of an alternate wealth variable and concluded that my initial results and the associated conclusion remained reasonable. The findings from the statistical analysis were enhanced by identifying extracts from the various websites of ECAs that confirmed the importance that ECAs were placing on GVC, unemployment, competitiveness and country rating. This outcome complicates the decisions of the economies of the smaller and less wealthy nations, who are already struggling to compete with the large and wealthy economies and who have an inherent fear of potential job losses.

In addition, my research builds on recently identified trends within the literature that indicates that certain ECAs are increasingly utilising a flexible approach to national content to facilitate the integration of their companies into the global trading arena. These ECA's are enticing large, global firms to integrate the ECA's companies within their global supply chains by offering them attractive financing. Furthermore, these ECAs are utilising their flexible content policies to encourage foreign firms to invest in the ECA's economy by enabling them to offer their customers favourable ECA backed financing. However, my research goes further than only building on this recently identified trend, by suggesting that governments are increasingly making use of ECAs to enhance the global competitiveness of their exporters. To date, the literature has lost this important dimension by focusing on the collaboration of ECAs in times of crises. My research is particularly relevant in that it not only identifies the competitive nature of governments and ECAs but highlights the preferential position that wealthy, advanced economies are in when it comes to international trade competition.

A critical outcome of this study is that governments and ECAs are strategically better placed to make decisions regarding national content and GVCs if they are large, wealthy and / or competitive. Further, the growing competitiveness amongst governments and ECAs in an environment where more affordable ECGs wins contracts and encourages supply chain integration, is prejudicial towards exporting companies located in the smaller, poorer economies. A key conclusion of my research is that key developmental institutions such as the World Bank and the African Development Bank, should consider counter guaranteeing

the ECGs issued by these smaller, poorer countries in order to negate the privileged position that exporters from advanced, wealthy countries find themselves in.

The following elements of the chapter summarises the key contributions of the research, the limitations of the research, the recommendations for future research and concludes with a summary of my key recommendations.

9.1 CONTRIBUTIONS OF THE STUDY

My research adds to the growing body of research on GVCs, however more specifically it reviews GVCs from the perspective of government policy considered through the unique lens of the national content policy of ECAs. This is in itself a novel contribution. My research findings provide a valuable contribution to the literature in terms of how government policy is responding to changing international trade dynamics and suggests that while governments are responding positively towards GVCs, this response varies and may not be to the extent envisaged. Some ECAs have reduced national content rules to raise their country competitiveness and to support the participation of their companies' activities within GVCs, while others are holding back in order to protect local manufacturing jobs. The varied approaches adopted by ECAs tends to be influenced by the size of the economy and in particular the degree of wealth of an economy, a result previously not highlighted within the literature.

In addition to adding to the research on GVCs and government policy, my research provides a comprehensive insight into ECAs, a somewhat under researched field, surprisingly given its close association to governments and its significant contribution to international trade.

I make a practical contribution to ECAs and governments by highlighting the key dynamics influencing the national content policy decisions of ECAs. The research reflects the complexity of the subject matter, demonstrating that there are numerous influencing factors at play that need to be considered by governments and ECAs when contemplating national content policy and an appropriate response to GVCs. The research also highlights how certain ECAs and their governments are increasingly utilising ECAs strategically as a means

to enhance their country and exporter competitiveness. This increased competition amongst ECAs may not be that obvious to a number of governments and ECAs, with the ECA medium term committee of the Berne Union making the following statement in the Berne Union 2021 Yearbook published on the 26th December 2021 "… may also increase competition among ECAs in the future, which is generally not something we are used to seeing" (p. 21). The recent literature has generally overlooked this competitive dimension of ECAs and their ECGs, preferring to emphasise the collaboration amongst ECAs in times of crises. My research goes even further, by not only identifying this competitiveness, but by suggesting that the environment is imbalanced and hugely beneficial towards the exporters of the large, wealthy and more competitive economies, to the detriment of exporters from the smaller and poorer economies. This is a significant conclusion that provides a fresh, albeit worrying, insight to scholars and practitioners interested in supporting the development of emerging markets.

Finally, my research proposes a very practical solution that could very realistically be implemented. I propose that institutions such as the World Bank and the African Development Bank consider counter guaranteeing the ECGs issued by lesser rated, emerging market ECAs in order to ensure that exporters from these markets are able to access the best forms of ECA backed funding available enabling them to compete on a more equitable footing to the exporters located in the larger and wealthier countries. It is my hope that scholars and practitioners will seriously look into this suggestion.

In addition to the practical contribution of my research, my research provides an example of the value of the increasingly important abductive approach to deal with puzzling phenomena. It is hoped that other studies will follow this example.

9.2 LIMITATIONS OF THE STUDY

There are a number of limitations to my study which are worth highlighting.

Because of the small number of cases (countries) and the lack of a uniform definition of national interest, I felt it most appropriate to opt for a binary model. However, the binary

nature of the models required selecting national content as either high or low, resulting in some loss of nuance. While an ECA may recognise the role that GVCs are playing, it does not necessarily mean that they will automatically reduce their national content policy in line with this, or they may reduce it but not to the extent of other countries. It may appear as if their national content policy is high and therefore, they have not responded to GVCs while in fact they may very much be aware of the influence of GVCs.

In particular, this binary approach fails to reflect changes made by a country when that country stays within the original category. For example, both Spain and Germany confirm the influence that GVCs are having on their policies and confirm that they have reduced their national content policies, but the extent of the influence is not yet recognised in my models, due to their content requirements still remaining in the high category.

My research has raised questions regarding the effectiveness of services as a measure of high and low value-adding activities. Timmer et al., (2019) have also raised this point and have therefore begun developing more granular functional task data. In their research they trace not only the value-added statistics but also the characteristics of the activities that a country performs within its exports. This functional data considers fabrication, R&D, management and marketing. A preliminary analysis of these functional task data would indicate that they are indeed a better measure of value-adding activities. Unfortunately, I was only able to access this data for 26 countries, which would have further reduced my dataset. Therefore, my results may be negatively affected by my choice of data to measure the value-adding activities of countries within GVCs. I tried to minimise these risks by robustly reconsidering the analysis from various angles and with different variables, but the possibility remains that my choice of variables may have had some impact on the results.

Finally, the relatively small dataset of 31 countries potentially impacts the generalisability of my findings. While this dataset remains meaningful in terms of total global exports, my results would have been enhanced had I been able to have a larger dataset of countries.

9.3 FUTURE RESEARCH

The research has highlighted the conundrum facing ECAs and governments. Does the country embrace GVCs and reduce national content policy believing that the net gains for the country will be positive? Alternatively, does the country adopt a more circumspect approach implementing higher national content policies with the belief that this preserves jobs? I believe that more research is required with regards to understanding jobs within GVCs, which would assist governments to better articulate their ECA policies

Timmer et al., (2019) have begun developing data based on the functional tasks within GVCs, believing this to be a more accurate measure of the value-added activities within GVCs. They refer to this as a third wave of trade statistics that traces both the value-added activities of a country and the characteristics of the activities a country performs within its exports. These characteristics include fabrication, R&D, marketing and management. I did some preliminary analysis of this data, comparing it to the national content policy of ECAs, and in certain areas the correlations appeared stronger than my value-adding services data, however, my dataset only comprised 26 countries which meant the results were not meaningful. Future research that compared the national content policy of ECAs and the functional task data but involving a larger dataset would be enlightening.

There is an opportunity for future research to build on my preliminary findings, firstly by trying to build a larger data base of ECA national content policy in order to increase the generalisability of the findings. Secondly, there is an opportunity to add a qualitative dimension to the research by discussing with a range of ECAs their view on the apparent opposing forces of flexible national content policy and increased exporter competitiveness, verse higher national content policy and job preservation. The current global trading dynamics, spurred on by supply chain concerns brought on by the Covid-19 pandemic, raises new questions about the role of governments in general and the use of ECAs in particular in facilitating trade in an integrated but competitive world trading system.

My research concludes with recommendations associated with emerging market exporters considering relocation choices to tap into the flexible national content policies of certain ECAs and that global institutions should look towards counter guaranteeing the ECGs of the

smaller and less wealthy ECAs. The value of these recommendations would benefit from research that specifically focuses on the challenges faced by emerging market exporters and ECAs trying to compete with the larger and wealthier countries.

9.4 RECOMMENDATIONS

This research has highlighted the influencing factors of GVCs and the increasing competitiveness amongst countries and ECAs. Governments and their ECAs need to consider these factors and determine which policies are best suited to the country and ECA based on their specific priorities and characteristics.

Exporters that are competing globally need to consider their location and sourcing strategies that potentially enable them to access the best ECGs available from ECAs in order to enhance their global competitiveness.

Exporters from the smaller and less wealthy countries are at a disadvantage when competing with exporters from larger and wealthier countries. Institutions such as the World Bank and the African Development Bank should consider how they can better support these countries and their ECAs in order to ensure that all exporters gain access to preferential export credit finance and not just the exporters from the larger and wealthier countries.

By conducting this research, I have shed light on an understudied government policy instrument, ECAs, and the complex ways in which a country's ECA makes sense of the ongoing transformation of global trade through GVCs. I have highlighted a number of important mechanisms shaping government policy via ECAs. I hope that my work spurs additional scholarship in this area.

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11 APPENDIX A – LIST OF ECAS

(Source: https://www.berneunion.org)

Country	Abbreviated Name	Full Name
Brazil	ABGF	Brazilian Export Credit Insurance Agency
Latvia	ALTUM	SIA Latvijas Garantiju aģentūra
Serbia	AOFI	Serbian Export Credit and Insurance Agency
Israel	ASHRA	The Israel Foreign Trade Risks Insurance Corporation
Netherlands	ATRADIUS	ATRADIUS
Bulgaria	BAEZ	Bulgarian Export Insurance Agency
Mexico	BANCOMEXT	Banco Nacional de Comercio Exterior, SNC
Botswana	BECI	Export Credit Insurance & Guarantee Company (Botswana) (Pty) Ltd
France	BPI France	Bpifrance Assurance Export
Spain	CESCE	CESCE Credit Insurance
Portugal	COSEC	Companhia de Seguro de Créditos, SA
Belgium	CREDENDO	Credendo
Oman	Credit Oman	ECGD
Kuwait	DHAMAN	The Arab Investment & Export Credit Guarantee Corporation
India	ECGC	ECGC Limited
Egypt	ECGE E	Export Credit Guarantee Company of Egypt
South Africa	ECIC SA	Export Credit Insurance Corporation SOC LTD
Singapore	ECICS	ECICS Limited
United Arab Emirates	ECIE	Export Credit Insurance Company of the Emirates
Greece	ECIO	Export Credit Insurance Organisation
Canada	EDC	Export Development Canada
Australia	EFIC	The Export Finance and Insurance Corporation
Czech Republic	EGAP	Export Guarantee and Insurance Corporation
Iran	EGFI	Export Guarantee Fund of Iran
Germany	EH GERMANY	Euler Hermes Aktiengesellschaft
Armenia	EIAA	Export Insurance Agency of Armenia
Denmark	EKF	Denmark's Export Credit Agency
Sweden	EKN	Exportkreditnämnden
Russian Federation	EXIAR	Export Insurance Agency of Russia
Hungary	EXIM Hungary	Hungarian Export-Import Bank
Jamaica	EXIM J	National Export Import Bank of Jamaica Limited
Romania	EXIM R	Eximbank of Romania
Slovak Republic	EXIMBANKA SR	Export-Import Bank of the Slovak Republic
Belarus	EXIMGARANT	Eximgarant of Belarus
Finland	Finnvera	Finnvera plc
Norway	GIEK	The Norwegian Export Credit Guarantee Agency (GIEK)
Croatia	HBOR	Croatian Bank for Reconstruction and Development

Hong Kong	HKEC	Hong Kong Export Credit Insurance Corporation
Jordan	JLGC	Jordan Loan Guarantee Corporation
Kazakhstan	KazakhExport	Kazakh Export Credit Insurance Corporation
Estonia	KredEx	KredEx Krediidikindlustus AS
Korea	KSURE	Korea Trade Insurance Corporation
Poland	KUKE	Export Credit Insurance Corporation Joint Stock Company
Indonesia	LPEI	Indonesia Eximbank
Macedonia	MBDP	Macedonian Bank for Development Promotion
Malaysia	MEXIM	Export-Import Bank of Malaysia Berhad
Sudan	NAIFE	National Agency for Insurance and Finance of Export - Sudan
Japan	NEXI	Nippon Export Investment Insurance
New Zealand	NZECO	The New Zealand Export Credit Office
Luxembourg	ODL	Luxembourg Export Credit Agency
Austria	OeKB	Oesterreichische Kontrollbank Aktiengesellschaft
Qatar	QDB	Qatar Development Bank
Italy	SACE	SACE
Saudi Arabia	SEP	Saudi Export Program
Switzerland	SERV	Swiss Export Risk Insurance
Slovenia	SID Bank	SID Bank
China	Sinosure	China Export & Credit Insurance Corporation
Sri Lanka	SLECIC	SLECIC
Senegal	SONAC	Société Nationale d'Assurances du Crédit et du Cautionnement
Taiwan, China	TEBC	Taipei Export-Import Bank of China
Thailand	THAI EXIMBANK	Export-Import Bank of Thailand
Turkey	Turk Eximbank	TURK EXIMBANK
United Kingdom	UKEF	UK Export Finance (Export Credit Guarantees Department)
Ukraine	Ukreximbank	The State Export-Import Bank of Ukraine
United States	US EXIM BANK	Export-Import Bank of the United States
Uzbekistan	UZBEKINVEST	National Export-Import Insurance Company

12 APPENDIX B – NATIONAL CONTENT POLICY OF ECAS

Country	National Content
A (Luxembourg)	National Interest
B (Italy)	National Interest
C (Canada)	National Interest
D (Sweden)	National Interest
E (New Zealand)	National Interest
F (Denmark)	20%
G (Netherlands)	20%
H (United Kingdom)	20%
I (Israel)	25%
J (Mexico)	30%
K (Belgium)	30%
L (Norway)	30%
M (Russia)	30%
N (Finland)	33%
O (Australia)	33%
P (Poland)	40%
Q (Croatia)	40%
R (Czech Republic)	50%
S (Austria)	50%
T (Switzerland)	50%
U (France)	50%
V (Hungary)	50%
W (Germany)	51%
X (China)	60%
Y (Spain)	70%
Z (South Africa)	70%

AA (India)	75%
BB (Greece)	100%
CC (Turkey)	100%
DD (USA)	100%
EE (Estonia)	Majority

13 APPENDIX C – FACTORS INFLUENCING NATIONAL CONTENT POLICY – RESPONSES RECEIVED FROM THE QUESTIONNAIRE

National content percentage	National content high / low category	Rise in GVCs	In response to other ECAs	Lack of diversification in country	In response to larger exporters	Maximise jobs
National Interest	Low	10	2	10	0	0
National Interest	Low	10	4	10	3	2
National Interest	Low	10	0	10	10	5
20	Low	8	10	10	7	5
20	Low	9	7	8	0	10
30	Low	9	1	3	8	0
33	Low	9	8	0	3	5
40	High	10	7	5	0	10
50	High	10	5	10	5	10
50	High	10	8	7	10	10
50	High	10	8	6	7	10
51	High	10	7	2	6	0
60	High	5	5	0	2	6
70	High	8	10	7	0	0
70	High	0	0	5	0	10
100	High	0	0	3	0	10
100	High	7	10	0	5	10
No. of 10		8	3	5	2	8
No. of high scores (7 – 10)		14	9	8	5	8
No. of low scores (0-5)		3	8	8	11	9

14 APPENDIX D – QUESTIONNAIRE

RESEARCH PROJECT – THE NATIONAL CONTENT POLICIES OF EXPORT CREDIT AGENCIES AND GLOBAL VALUE CHAINS

This questionnaire forms part of a research project that I am conducting into the national content policies of Export Credit Agencies, how these are being impacted by global value chains and the degree of a country's integration within global value chains. The research is being conducted as part of my Doctorate of Philosophy with the Gordon Institute of Business Science, University of Pretoria.

Your responses are important in enabling me to obtain as full an understanding as possible on this important issue. The information that you provide, together with information obtained from other sources, will be used as data required for conducting my research necessary to complete my Doctorate. If you would be interested in receiving a copy of the research once complete, please tick the appropriate box in question 8.

All information provided will be treated in the strictest confidence. Your decision to participate in this research is entirely voluntary and you are free to withdraw from the process at any time. It should take a maximum of 20 minutes to complete the questionnaire.

By completing and returning the questionnaire, you confirm that you are happy to participate in the research, that you understand the purpose of the research, that you are aware that you have the opportunity to ask any questions, that you understand that your participation in the research is voluntary and that you are free to withdraw from participating in the research at any time.

When you have completed the questionnaire, please return the questionnaire to me on e-mail michaelvcreighton@gmail.com.

I hope that you will be able to complete and return the questionnaire and I thank you for your time. Should you have any queries regarding the questionnaire and process please feel free to either contact myself, Michael Creighton, on telephone +44 7979 228844 or e-mail michaelvcreighton@gmail.com or to contact my supervisors, Prof. Helena Barnard on barnardh@gibs.co.za and + 27 82 657 4470 and Dr. Matthew Stern on matthew.stern@dnaeconomics.com and + 27 82 885 8895.

Thank you for your assistance.

Michael Creighton

1. Date: _____

2. Name of Organisation: _____

3. Country of Organisation: _____

4. Name of person completing this questionnaire: _____

5. Position of person completing this questionnaire: _____

6. Contact details - E-mail: _____

   Phone: _____

	Please tick box *Yes*	*No*
7. I agree to the use of anonymised quotes in publications:	☐	☐
8. We would like to receive a copy of the research once completed:	☐	☐

9. What is your organisation's current national content policy? If this varies across different product types, please specify and please indicate the level of business that each product contributes to your total business. Please also indicate when this policy came into effect.

Product	National Content Policy (specified as a percentage of the export contract)	Product as % of total business	Date policy came into effect

(Product types could include: Buyer Credit, Supplier Credit, SME Product, construction projects etc.)

Please provide any other comments you feel relevant regarding your current national content policy:

If your organisation does not have a national content policy, please explain the reason for this and how you determine the eligibility of export contracts to be supported by your organisation:

10. Prior to the current national content policy being put in place, what was your organisation's national content policy?

Product	National Content Policy (specified as a percentage of the export contract)	Product as % of total business	Date policy came into effect

11. If there was a different national content policy prior to the preceding one, please highlight that policy as well:

Product	National Content Policy (specified as a percentage of the export contract)	Product as % of total business	Date policy came into effect

12. Please highlight on a scale of 0 to 10 with 0 indicating that it was not a reason at all and 10 being that it was a significant reason, the reasons for your organisation changing its content policy to its current policy.

Global value chains have resulted in exporters sourcing products globally in order to remain internationally competitive:

0	1	2	3	4	5	6	7	8	9	10

In response to other Export Credit Agencies reducing their national content policies:

0	1	2	3	4	5	6	7	8	9	10

The structure of our economy is not diversified enough to allow our exporters to source large quantities of content from within our country:

0	1	2	3	4	5	6	7	8	9	10

In response to large, key exporters within our economy requesting us to do so:

0	1	2	3	4	5	6	7	8	9	10

The current policy was implemented to maximise jobs in our country:

0	1	2	3	4	5	6	7	8	9	10

Other, please specify ____:

0	1	2	3	4	5	6	7	8	9	10

Other, please specify ____:

0	1	2	3	4	5	6	7	8	9	10

Other, please specify ____:

0	1	2	3	4	5	6	7	8	9	10

Other, please specify ____:

0	1	2	3	4	5	6	7	8	9	10

If you have any other comments that you feel relevant with regards to your organisations decision to change its national content policy then please state them here:

13. If applicable, what impact has a change in national content policy had on your organisations business?

14. Should your organisation have any additional documentation related to your national content policies that you are able to share, it would be appreciated if you could also attach this documentation

	Please tick box	
	Yes	*No*
Additional documents attached	☐	☐

15. Should your organisation have any additional information regarding national content located on your website, it would be appreciated if you could add the website link:

	Please tick box	
	Yes	*No*
Website link included	☐	☐

Add website link here:

Thank you for taking the time to complete this questionnaire.

Please return the completed questionnaire by [_____] via e-mail to michaelvcreighton@gmail.com.

Michael Creighton
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michaelvcreighton@gmail.com