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Manufacturing Exports and Creative Industry Synergies: A Study of Thailand-Canada Industrial Cooperation

Morakot Muthuta[1]*, Pongsak Laoswatchaikul[2]

[1]School of Liberal Arts, King Mongkut's Institute of Technology Ladkrabang, Thailand.
Email: morakot.mu@kmitl.ac.th
[2]Office of Industrial Economics, Ministry of Industry, Thailand.
Email: pongsak_oie@hotmail.com

Corresponding Author Email: morakot.mu@kmitl.ac.th

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Abstract: This study investigates the determinants of Thailand's manufacturing exports to Canada, emphasizing potential avenues for industrial cooperation, particularly within the realm of creative industries. Utilizing an augmented gravity model, the analysis reveals that Canadian GDP per capita, ASEAN Economic Community (AEC) integration, and unexpected shocks exert a positive influence on exports. Conversely, exchange rate appreciation is found to negatively impact export performance. Furthermore, an examination of sector connectivity highlights complementary strengths between the two nations in areas such as advanced manufacturing, digital technologies, agro-food, tourism, and healthcare. The study identifies several promising domains for collaboration in the creative industry, including digital content creation, film production, design, and innovative tourism initiatives. To foster a collaborative ecosystem for creative industries between Thailand and Canada, the study offers a series of policy recommendations aimed at leveraging these complementary strengths. By implementing these strategies, both countries can enhance their competitiveness in the global creative economy, driving innovation and cultural exchange.

Introduction

The Emergence of Creative Economies in Global Trade

In recent decades, the global economic landscape has undergone a significant transformation with the rise of the creative economy. This shift represents a departure from traditional industrial production towards an economy where creativity, innovation, and intellectual property play increasingly central roles (Howkins, 2002). The creative economy encompasses a diverse range of industries, including advertising, architecture, arts, and crafts, design, fashion, film, music, performing arts, publishing, R&D, software, toys, TV, radio, and video games (DCMS, 2001). The importance of the creative economy in global trade is evident in its growing economic significance. According to UNCTAD data, the global market for creative goods expanded significantly, with exports rising from $208 billion in 2002 to $509 billion in 2015 (UNCTAD, 2018). This growth outpaces that of many traditional sectors, highlighting the increasing economic value of creative industries. Creative industries are characterized by their reliance on individual creativity, skills, and talent, as well as their potential to create wealth through the generation and exploitation of intellectual property (Flew, 2012). These industries tend to exhibit particular forms of socioeconomic organization that promote innovation and experimentation, often involving proximate and frequent relations among key actors along the supply chain (Jones, Lorenzen, & Sapsed, 2015).

Thailand and Canada: Potential Partners in Creative Industry Development

In the context of this global shift towards creative economies, the industrial cooperation between Thailand and Canada presents an interesting case study. Canada, one of the most advanced countries in the world economy, is an important economic partner of Thailand, particularly in the industrial sector. This study aims to investigate the industrial cooperation between Thailand and Canada by examining the manufacturing export determinants and the connectivity of major industrial sectors between the two nations. Canada is a G7 member country and the 8th largest economy in the world. According to the International Monetary Fund (IMF), in 2022 Canadian GDP was 2.2 trillion USD, while Thailand's GDP was 534.7 billion USD. Canada is a top high-income country with a GDP per capita of 56,794 USD (11th in the world), while Thailand's was 7,631 USD in 2022. The bilateral trade between both countries is substantial, with a total trade value of 3,275.7 million USD in 2022. Thailand exported to Canada was 2,117 million USD and imported from Canada was 1,158.7 million USD (Ministry of Commerce, Thailand). Despite the continuously increasing bilateral trade, both nations have not established any bilateral or multilateral Free Trade Agreement (FTA). However, on November 17, 2021, Thailand and other ASEAN member countries officially agreed to implement the FTA with Canada and planned to complete the negotiation by the end of 2024. The ASEAN-Canada Free Trade Agreement (ACAFTA) is expected to be advantageous to the overall economy and industrial sector of Thailand, particularly in manufacturing exportation to Canada, supply chain connectivity, and production enhancement (Ministry of Commerce, Thailand). The potential for cooperation between Thailand and Canada in developing creative industries is significant. Canada's experience and advanced position in the creative economy could provide valuable insights and opportunities for Thailand. Conversely, Thailand's unique cultural assets and growing creative sector could offer new markets and collaborative opportunities for Canadian creative industries.

Research Questions and Objectives of the Study

How do current manufacturing export determinants shape the potential for creative industry development between Thailand and Canada?

What synergies exist between Thailand and Canada's industrial sectors that could support growth in creative industries?

To investigate the factors affecting Thailand's manufacturing exports to Canada, with a focus on implications for creative industry development.

To examine the potential connectivity between major industrial sectors of Thailand and Canada, particularly those that could support creative economies.

To provide policy recommendations for enhancing industrial cooperation between the two countries in a way that fosters creative industry growth.

This research contributes to the existing literature by providing new insights into trade determinants between developed and developing countries in the context of the emerging creative economy. The findings from this Thailand-Canada case study can inform similar relationships globally, offering a template for understanding how traditional trade patterns can evolve to support creative economies. The methodological approach used here could be applied to analyse trade relationships between countries in various regions, such as Southeast Asia, Latin America, or Eastern Europe, and their developed counterparts.

Literature Review

Creative Economy: Concepts and Global Trends

The creative economy has emerged as an important driver of economic growth and development in recent decades. Howkins (2002) first introduced the concept of the creative economy, defining it as an economic system where value is based on novel imaginative qualities rather than traditional resources like land or labour. The creative economy encompasses sectors such as advertising, architecture, art, crafts, design, fashion, film, music, performing arts, publishing, research & development, software, toys and games, TV and radio, and video games. A key feature of the creative economy is its reliance on human creativity, innovation, and knowledge as primary inputs. Creative industries are characterized by a high degree of individual skill and talent, with the potential to create wealth through intellectual property (DCMS, 2001). As noted by Potts & Cunningham (2008), the creative sector differs from traditional industries in that it deals with the production and circulation of aesthetic or semiotic content. Globally, the creative economy has seen rapid growth over the past two decades. UNCTAD (2018) estimates that the value of the global market for creative goods doubled from $208 billion in 2002 to $509 billion in 2015. Key trends shaping the creative economy include digitalization, rising disposable incomes, changing consumer preferences, and supportive government policies in many countries (OECD, 2018). Creative industries are increasingly seen as a source of innovation and competitive advantage for national economies.

Key Export Determinants

The literature identifies several key factors that influence

exports, particularly for manufacturing industries:

Economic Size: The GDP or GDP per capita of both exporting and importing countries is widely recognized as a significant determinant of export flows. Numerous studies have confirmed the importance of economic size using gravity model approaches. Rahman (2003) found that the GDPs of both Bangladesh and its trading partners were statistically significant positive determinants of bilateral trade flows. Similarly, Blomqvist (2004) showed that the GDPs of Singapore and its trading partners had significant positive effects on bilateral trade. Several explanations have been proposed for the GDP-export relationship. Larger economies are thought to have greater productive capacity, achieve economies of scale, offer more attractive markets for imports, and often have better trade-related infrastructure (Krugman, 1980). The extensive empirical evidence supporting this relationship makes GDP one of the most robust determinants of export flows.

Exchange Rates: The impact of exchange rates on exports has been extensively studied, with the literature generally suggesting that exchange rate movements can significantly influence export volumes. Early theoretical work proposed that exchange rate volatility would negatively impact trade due to increased uncertainty for exporters (Ethier, 1973). Empirical studies have generally found a negative relationship between currency appreciation and export performance. Fang, Lai, & Miller (2006) showed that currency depreciation tends to encourage exports for Asian economies, though the magnitude varies across countries. However, the relationship is not always straightforward. The rise of global value chains has further complicated the exchange rate-export relationship (Zhao & Xing, 2006). Recent studies have explored exchange rate misalignments, with Freund & Pierola (2008) finding that large real exchange rate depreciations played an important role in initiating export surges in developing countries.

Economic Integration: Economic integration, involving the removal of trade barriers and establishment of cooperative policies among nations, has been shown to positively impact export performance. Seminal work by Aitken (1973) and Bergstrand (1985) found significant positive effects of European economic integration on intra-regional trade using gravity models. Free Trade Agreements (FTAs) have been a particular focus, with Baier & Bergstrand (2007) finding that FTAs approximately double bilateral trade after 10 years. The depth of integration has been found to matter. Baier, Bergstrand, & Feng (2014) showed that deeper forms of integration, such as common markets and economic unions, have larger effects on both intensive and extensive margins of trade compared to simpler free trade agreements. In the context of global value chains, economic integration can have complex effects. Baldwin & Lopez-Gonzalez (2015) discussed how regional trade agreements facilitate the formation of regional supply chains, potentially leading to increased trade in intermediate goods.

Crude Oil Prices: Oil price fluctuations can significantly influence export patterns, though the nature and magnitude of this influence varies across sectors and countries. Chen & Hsu (2013) found that higher oil prices tend to reduce bilateral trade volumes, with a more pronounced effect for geographically distant country pairs. For manufacturing exports, Beine, Coulombe, & Vermeulen (2014) showed that increased oil price volatility reduces both the number of products exported and the average export value per product, particularly for energy-intensive goods. Global value chains add further complexity. Lopez Gonzalez (2016) found that higher oil prices can lead to the reorganization of global value chains, potentially altering established trade patterns. However, the impact can be mitigated by various factors. Oberhofer & Pfaffermayr (2021) showed that firms' energy efficiency investments can help reduce the negative impact of oil price increases on export performance.

External Shocks: External shocks, ranging from economic crises to natural disasters and pandemics, can substantially affect both the demand and supply sides of international trade. Early work by Nitsch & Schumacher (2004) showed that terrorist actions can reduce bilateral trade flows by about 4% on average. The 2008-2009 global financial crisis spurred further research. Behrens, Corcos, & Mion (2013) found the crisis led to significant export declines for Belgian firms, affecting both extensive and intensive margins. The COVID-19 pandemic provided a new context for studying global shocks. Hayakawa & Mukunoki (2021) found significant negative effects on international trade, varying across countries and industries. Their study highlighted how health crises can disrupt international supply chains and trade patterns. The impact of shocks can vary by product type. Levchenko, Lewis, & Tesar (2010) found that the durable goods sectors experienced larger trade reductions during the 2008-2009 US trade collapse.

Industrial Cooperation in the Context of Creative Economies

The relationship between industrial cooperation and the enhancement of creative economies has been a subject of increasing scholarly interest in recent years. Creative industries, characterized by their reliance on creativity, innovation, and cultural production, are seen as pivotal to modern economic development (Flew, 2012). Within this context, industrial cooperation has emerged as a key strategy for fostering innovation and competitiveness in creative sectors. Several studies have highlighted the importance of collaboration and knowledge sharing in driving innovation within creative industries. Potts et al. (2008) argue that creative industries thrive on network effects and social interactions, making cooperation essential for generating new ideas and products. Similarly, Chapain & Comunian (2010) emphasize the role of "creative clusters" in facilitating knowledge exchange and innovation through geographic proximity and inter-firm collaboration. The nature of industrial cooperation in creative economies differs from traditional manufacturing sectors. As Sunley et al. (2008) note, creative industries often rely on project-based work and flexible specialization, leading to more fluid and informal collaborative arrangements. This aligns with Caves' (2003) characterization of creative industries as operating under "flexible production networks" rather than rigid hierarchical structures. Policy initiatives to promote industrial cooperation in creative sectors have gained traction globally. Pratt (2009) examines how cultural policy frameworks in various countries have shifted towards fostering creative clusters and collaborative networks. In the European context, Lazzeretti (2012) analyses how EU regional policies have supported the development of creative districts through cooperative mechanisms. However, challenges remain in fostering effective industrial cooperation within creative economies. Banks & O'Connor (2009) highlight tensions between artistic values and commercial imperatives that can complicate collaborative efforts. Additionally, Oakley (2004) points out that power imbalances between large firms and smaller creative enterprises can hinder equitable cooperation. Recent research has also explored the role of digital technologies in reshaping industrial cooperation within creative sectors. Bakhshi & McVittie (2009) examine

how digital platforms enable new forms of collaborative production and distribution in creative industries. Similarly, Boix-Domenech & Soler-Marco (2017) investigate how smart specialization strategies can leverage digital technologies to enhance cooperation in regional creative economies.

Thailand-Canada Economic Relations: A Platform for Creative Collaboration

Thailand and Canada have maintained a robust economic relationship that has evolved over decades, providing a strong foundation for potential collaboration in creative industries. Bilateral trade between the two countries has shown steady growth, reaching CAD $4 billion in 2019 (Global Affairs, 2023). This existing trade relationship, primarily based on traditional sectors, offers a stepping stone for expanding into creative industry cooperation. The manufacturing goods have been the main products exported to Canada, some of which are processed seafood, microwave ovens and electric heaters, machinery, and automotive and vehicle parts. The export value has considerably improved for almost two decades. The value of Thailand's manufacturing exports to Canada had increased more than 2 times from 857.8 million USD in 2005 to 1,798.5 million USD in 2022 (see Figure 1).
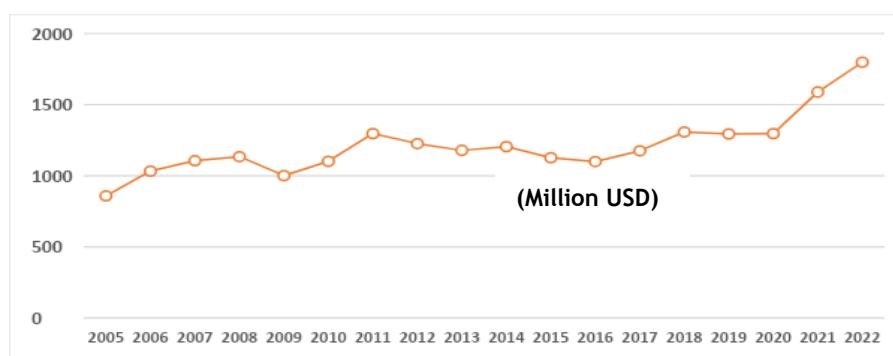

Figure 1: Thailand Manufacturing Export Value to Canada (2005 – 2022)
Source: Ministry of Commerce, Thailand.

Several factors make Thailand-Canada economic relations particularly conducive to fostering creative industry partnerships:
1. Complementary Economic Strategies: Both countries have identified the creative economy as a priority area for future growth. Thailand's "Creative Thailand" strategy aims to increase the contribution of creative industries to 20% of GDP by 2024 (Kenan Institute Asia & Fiscal Policy Institute, 2009), while Canada has been actively promoting its creative sectors, which accounted for 2.7% of GDP in 2017 (Statistics Canada, 2019).
2. Existing Cooperation Frameworks: The ongoing negotiations for ACAFTA, expected to be completed by the end of 2024, present a significant opportunity to strengthen creative industry ties. The Department of Trade Negotiation (2022) projects that this agreement could increase overall exports to Canada by about 244-513 million USD.
3. Complementary Strengths in Creative Sectors: Thailand has developed strengths in areas such as crafts, design, and digital content creation, while Canada is a leader in film/TV production, digital technologies, and creative services (UNCTAD, 2018). This complementarity offers rich potential for knowledge exchange and joint ventures.
4. Established Diplomatic Relations: The long-standing diplomatic ties between Thailand and Canada, dating back to 1961, provides a stable political environment conducive to fostering new areas of economic cooperation, including in creative industries.

Research Methodology

This study employs a mixed-methods approach to comprehensively address its two main objectives: (1) to examine the factors affecting Thailand's manufacturing exports to Canada, and (2) to analyse the potential for connectivity between major industrial sectors of both nations. The research methodology is designed to provide both quantitative insights into trade determinants and a qualitative understanding of sectoral cooperation opportunities.

3.1. Model Specification

To investigate the determinants of manufacturing exports, the gravity model is employed to estimate the results. The gravity approach is commonly applied to study international economic activities such as foreign trade and investment (Laoswatchaikul, 2011). The model indicates that the distance between the two countries and their economic sizes can affect both sides' economic activities. The basic equation of the gravity framework can be illustrated as follows,

$$Y_{ij} = \frac{(GDP_i)\,(GDP_j)}{D_{ij}} \quad (1)$$

where Y_{ij} is the bilateral volume between country i and j; GDP is gross domestic product representing the economic size of each country; D_{ij} is the distance between nations. Then, applying equation (1) into logarithm form to obtain a simple log-linear equation:

$$ln\,(Y)_{ij} = \beta_0 + \beta_1 ln\,(GDP_i \times GDP_j) - ln\,(D)_{ij} + \varepsilon_{ij} \quad (2)$$

Next, equation (2) is modified with selected related variables to examine the factors influencing manufacturing exports to Canada. The value of manufacturing exports from Thailand to Canada is selected to be a dependent variable. The first two exogenous variables are the gravity factors including the GDP per capita of both countries. The purpose of using GDP per capita instead of GDP is to eliminate the population effect that may mislead their effects on exportation. Other independent variables consisted of the exchange rate, crude oil price, ASEAN Economic Community (AEC), and the shocks affecting manufacturing exports. The geographic distance between

Thailand and Canada is excluded from the analysis since it is constant over time (time-invariant). Thus, the augmented gravity model can be identified as follows:

$$ln(Export)_t = \beta_0 + \beta_1 ln\,(GDPPcan)_t + \beta_2 ln\,(GDPPthai)_t + \beta_3 ln\,(ER)_t + \beta_4\,ln\,(Oil)_t + \beta_5\,AEC_t + \beta_6\,SHOCK_{it} + \varepsilon_t \quad (3)$$

Variables and Data Sources

The dependent variable Export is the value of Thailand's manufacturing exports to Canada in the year t. The independent variables are GDPP which is the GDP per capita of Canada at time t; GDPP Thai: the GDP per capita of Thailand at time t; ER: exchange rate (Canadian dollar/Baht) at time t; Oil: crude oil price (West Texas) at time t; AEC: a dummy variable if the ASEAN Economic Community is established; SHOCK: a dummy variable if there are internal or external shocks at time t such as the Sub-prime crisis in 2008, the great flood in Thailand in 2011, or the Covid-19 pandemic; ε_t is the error term; and ß is the Coefficient. We employ the data of Thailand's manufacturing export value to Canada during 2005 – 2022 to analyse the important determinants. The variables expected signs from previous studies, and data sources are presented in Table 1.

Table 1: Variables, Expected Signs, and Data Source.

Variables	Expected Signs from Previous Literature	Data Source
Export		The Ministry of Commerce, Thailand
GDP per capita (Canada)	+	IMF and World Bank
GDP per capita (Thailand)	+	IMF and World Bank
Exchange Rate (CAD/Baht)	-	Bank of Thailand
Crude Oil Price (West Texas)	-	U.S. Energy Information Administration
AEC	+	The Ministry of Commerce, Thailand
Shock	-	

To examine equation (3), a multiple regression analysis is employed. Nevertheless, a time series model is likely to have the error terms correlated to each other called Autocorrelation or Serial Correlation. If the Ordinary Least Squares method (OLS) is utilized, the model results might be inefficient leading to statistical insignificance of the estimated coefficients (Greene, 2018). Thus, the Generalized Least Square (GLS) approach is applied to solve this problem. To clarify the concept of GLS utilized in this study, a linear equation (3) model can be written in the matrix form:

$$y = X\beta + \epsilon \quad (3a)$$

(where y = a vector of independent variable, X = the matrix of dependent variable)

Estimation Method

When estimated by the OLS method, we will obtain the estimated coefficient ß and its variance:

$$\hat{\beta} = (XX)^{-1}Xy \text{ and } Var(X) = \sigma^2(XX)^{-1} \text{ or } \sigma^2\Omega \quad (3b)$$

To avoid the serial correlation problem, equation (3a) is weighted with $\Omega^{1/2}$ to derive a robust estimator (Wooldridge, 2020):

$$\hat{\beta} = (X\,\Omega^{-1}X)^{-1}X\Omega^{-1}y \text{ and } Var(X) = \sigma^2(X\,\Omega^{-1}X)^{-1} \quad (3c)$$

Then, apply this to equation (3) to obtain an efficient estimator.

Qualitative Analysis: Creative Sector Connectivity

To assess the potential for connectivity between Thailand and Canada's creative industries, this study develops a comparative framework, which incorporates Richard Florida's concept of the "creative class" and Charles Landry's "creative city" model. These frameworks are integral to understanding how urban environments and creative professionals contribute to economic dynamism and innovation in both countries (Landry, 2012).

Data Collection

The analysis utilizes documentary research methods to gather data from secondary sources (Bowen, 2009). Key documents reviewed include:

Policy Documents:

- Thailand's 20-Year National Strategy (2018-2037).
- Canada's Innovation and Skills Plan.
- Thailand 4.0 policy.
- Canada's Digital Charter (Innovation, Science and Economic Development Canada, 2019).

Industrial Reports:

- "The Next Generation of Manufacturing in Canada".
- "Thailand's Eastern Economic Corridor: Opportunities in the ASEAN Gateway".

Economic Data from Government Agencies:

- Thailand's Ministry of Commerce (Ministry of Commerce, 2022).
- Statistics Canada.
- Bank of Thailand.
- Innovation, Science, and Economic Development Canada.

The timeframe for the analysed documents and data spans from 2017 to 2022, reflecting the most recent policy developments and economic trends in both countries.

Analysis Framework for Creative Industry Potential

To assess the potential for connectivity between Thailand and Canada's creative industries, this study develops a comparative framework, which incorporates Richard Florida's concept of the "creative class" and Charles Landry's "creative city" model. These frameworks are integral to understanding how urban environments and creative professionals contribute to economic dynamism and innovation in both countries (Landry, 2012). The framework includes:

- Identification of Key Sectors: Based on policy documents, the study identifies sectors that both Thailand and Canada prioritize, including advanced manufacturing, digital technologies, agri-food, tourism and hospitality, and health sciences (Yeung, 2016).
- Sector Characteristics and Development Needs: The analysis focuses on the characteristics, strengths, and development needs of these sectors, particularly how creative industries intersect with traditional sectors to foster innovation and economic growth.
- Comparative Assessment: This involves assessing

- potential synergies and complementarities between Thailand and Canada's creative industries, such as the integration of digital technologies into manufacturing and the creative application of cultural knowledge in tourism (UNESCO, 2021).
- Evaluation of Connectivity Potential: The study evaluates specific areas where bilateral cooperation in creative industries could deepen, particularly in areas like cultural exchange, digital innovation, and sustainable development (UNCTAD, 2018).

For this study, "creative industries" are defined as those that utilize creativity, cultural knowledge, and intellectual property to produce products and services with social and cultural meaning (UNESCO, 2021). This definition encompasses traditional creative sectors like media and design, as well as innovative applications of creativity in sectors like advanced manufacturing and digital technologies.

Results

Export Determinants: Implications for Creative Industry Development

Model Estimation Results

Table 2: The Estimated Coefficients of Manufacturing Export Determinants.

Determinants	Coefficient
GDP Per Capita of Canada	1.0998*** (0.3233)
GDP Per Capita of Thailand	0.2249 (0.2208)
Exchange Rate (CAD/Baht)	-1.9041*** (0.4094)
Crude Oil Price	-0.0879 (0.1263)
ASEAN Economic Community (AEC)	0.1709*** (0.0535)
Shock	0.0662* (0.0309)
R^2	0.8732
Observations	18

Notes: ***, **, * represents the level of statistical significance at 1%, 5%, and 10% respectively

The results from Table 2 indicate that three factors have positive and statistically significant coefficients consisting of Canadian GDP per capita, ASEAN Economic Community (AEC), and unexpected shock, but the exchange rate has a negative and statistically significant coefficient. However, Thailand's GDP per capita and the crude oil price have no statistical significance. We can see that the economic size or income factor, Canadian GDP per capita has a positive effect on Thailand's manufacturing export to Canada consistent with previous works. This demonstrates that the industrial products imported from Thailand will increase if the income of Canadian people increases. Nonetheless, even having a positive sign, the coefficient of Thailand's GDP per capita is statistically insignificant. This may be because this study focuses on exports; consequently, Thailand's income factor slightly impacts export products, especially manufactured goods. Another positive factor that is similar to former research is economic integration, the ASEAN Economic Community (AEC) was established in 2015 to generate ASEAN to be a single market and product base for the global market helps to enhance the industrial export to Canada. Hence, this indicated that the incoming FTA between ASEAN and Canada (ACAFTA) will help support Thailand's manufactured products in the Canadian market. The unexpected shock is the other positive determinant, but the sign is different from other previous works of literature mostly showing that unpleasant events are unfavourable to international trade. The result indicates that if there are accidental shocks, Canada tends to import more industrial products from Thailand. This may be because Canada will reserve more supplies when confronting external shocks from several sources including Thailand. For instance, the data from Figure 2 shows that Canadian imports outstandingly increased during the Covid-19 pandemic (2020 – 2022).
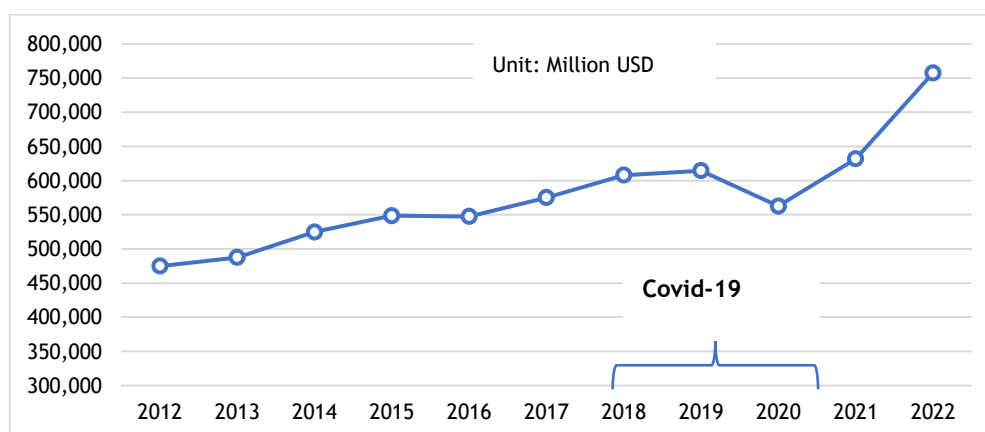

Figure 2: Canadian Import Value (2012 – 2022).
Source: Statistics Canada.

On the other hand, the negative factor having statistical significance is the exchange rate. Similar to other previous work, the appreciation of the Thai Baht to the Canadian Dollar will cause the manufacturing export to Canada decline because the Thai products are more comparatively expensive for Canadian consumers. Nevertheless, even though the coefficient of crude oil price is negative showing that the high crude oil price can be unfavorable to exports, the study result shows that it is statistically insignificant. This may be because, besides the manufacturing field, the crude oil price impacts other economic sectors such as transportation, logistics, agriculture, and services as well.

Interpretation of Coefficients in the Context of Creative Economies

Canadian GDP per capita showed a strong positive relationship with Thailand's manufacturing exports (coefficient: 1.0998, p<0.01). This suggests that as Canadian incomes rise, demand for Thai manufactured goods, including those from creative industries, increases. The positive impact of economic growth on creative industry

exports aligns with findings from other studies on the relationship between income levels and demand for creative goods (UNCTAD, 2018). The formation of the ASEAN Economic Community (AEC) also demonstrated a positive effect on exports (coefficient: 0.1709, p<0.01). This highlights the importance of regional economic integration in fostering creative industry growth, as noted by Kawai & Naknoi (2015) in their study of ASEAN economic integration. Interestingly, the shock variable showed a small positive effect (coefficient: 0.0662, p<0.10), contrary to expectations. This could indicate resilience in Thailand's manufacturing sector, including creative industries, during periods of global economic uncertainty. Such resilience has been observed in creative sectors in other countries during economic downturns (UNESCO, 2021). The exchange rate (CAD/Baht) exhibited a strong negative relationship with exports (coefficient: -1.9041, p<0.01), indicating that appreciation of the Thai Baht relative to the Canadian Dollar reduces exports. This underscores the importance of exchange rate

management for maintaining competitiveness in creative industry exports.

Creative Sector Connectivity and Innovation Potential

Emerging Creative Industries in Thailand and Canada

The Canadian economy has suffered from the Covid-19 outbreak, particularly in 2020, causing production, trade, and the overall economy to substantially decline (see Figure 4). Therefore, to strengthen the growth of domestic production, the Ministry of Innovation, Science, and Industry of Canada has developed new industrial policies to be an important economic engine to recover the economy from this crisis containing 4 main pillars, which are (1) Become a digital and data-driven economy; (2) Be the environmental, social, and governance world leader in resources, clean energy, and clean technology; (3) Build innovative and high-value manufacturing where can lead globally; and (4) Leverage Agro-food advantage to feed the planet.
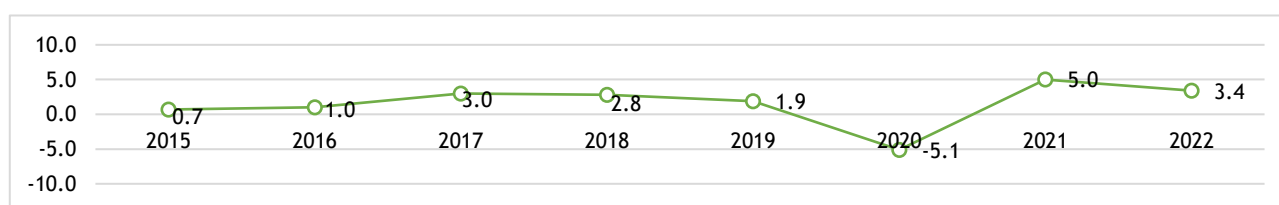

Figure 3: The Economic Growth of Canada (2015 – 2022).
Source: International Monetary Fund (IMF).

From the 4 key pillars above, the industrial sectors that Canada has potential and should target are (1) Resources of the future which are the largest fields accounting for 30% of the overall industrial sector including mining, forestry, oil and natural gas; (2) Advanced Manufacturing including automotive, aerospace, food, and machinery; (3) Tourism and Hospitality which employs about 10% of Canadian jobs; (4) Agro-Food such as planted-based or healthy food; (5) Clean Technology such as alternative fuels, renewable electricity, water management and recycling, and energy-efficient equipment; (6) Digital including cloud system, AI, Big data, and Internet of Things (IOTs); (7) Health and Bio-science which is one of the fastest growing industries in Canada containing Biotechnology, Medical Technology, Digital/AI Health Technology, and Vaccine development. In the meantime, Thailand has also formulated modern industrial policies and established the target industrial sectors to transform the traditional economy into a knowledge-based and innovative-driven economy and be resilient to unfavourable situations like the Covid-19 pandemic (www.eeco.or.th). When comparatively analysing the main industrial sectors between both countries, we found that 5 priority sectors of Canada can cooperate with 7 key sectors of Thailand which can be presented in Table 2.

Table 2: Major Industrial Sector Connectivity between Canada and Thailand.

Canada's Target Sectors	Thailand's Target Sectors
- Advanced Manufacturing	Next-Generation Automotive, Aviation and Logistics
- Digital	Digital
- Agro-Food	Advanced Agriculture and Biotechnology Food for the Future
- Tourism and Hospitality	High Value and Medical Tourism
- Health and Bio-science	Medical and Comprehensive Healthcare

Source: Industrial Strategy Council (Canada) and Eastern Economic Corridor (Thailand)

Potential Areas for Creative Collaboration

Analysis of industrial policies and sector strengths reveals several promising areas for creative industry collaboration between Thailand and Canada:

1. Digital Content and Technologies: Both countries have prioritized digital sectors. Canada's expertise in areas like artificial intelligence and big data analytics could complement Thailand's growing digital content industry, potentially leading to innovative applications in areas such as interactive media and smart city solutions.
2. Film and Television Production: Canada's established film industry could partner with Thailand's emerging sector. This collaboration could leverage Thailand's diverse locations and lower production costs with Canada's technical expertise and global distribution networks, potentially creating unique cross-cultural content.
3. Design and Advanced Manufacturing: Thailand's strengths in product design and Canada's focus on innovative, high-value manufacturing present opportunities for collaboration in areas like industrial design and smart product development. This could lead to the creation of innovative, culturally-infused products for global markets.
4. Creative Tourism: Combining Canada's expertise in experiential tourism with Thailand's cultural assets could lead to innovative tourism products. For example, augmented reality applications could be developed to enhance heritage site interpretation, creating immersive cultural experiences.
5. Agro-Food Innovation: Both countries have strong agricultural sectors. Collaboration could focus on developing creative solutions for sustainable agriculture, innovative food packaging design, and novel food products that blend Thai and Canadian culinary traditions.

These potential areas for collaboration align with global trends in creative economy development, where cross-

sector and international partnerships are increasingly driving innovation (UNESCO, 2021). The complementary strengths of Thailand and Canada in various creative domains suggest significant potential for mutually beneficial cooperation in developing their creative economies.

Discussion

From Traditional Manufacturing to Creative Value Chains

The analysis of Thailand's manufacturing exports to Canada and the examination of potential sector connectivity reveal a pathway for transitioning from traditional manufacturing to creative value chains. This transition aligns with the global shift towards knowledge-based economies, where creativity and innovation drive economic growth. Thailand's manufacturing exports to Canada have shown significant growth, increasing from 857.8 million USD in 2005 to 1,798.5 million USD in 2022. This growth trajectory, combined with the positive impact of factors such as Canadian GDP per capita and the ASEAN Economic Community (AEC) on exports, suggests a strong basis for further development of value-added industries. This finding aligns with research by Kawai & Naknoi (2015), who highlight the importance of regional economic integration in fostering trade and economic development. The potential for Thailand to leverage its manufacturing strengths in developing creative industries mirrors the experience of other emerging economies. For instance, Kong et al. (2006) describe how Singapore successfully transitioned from a manufacturing-based economy to one driven by creative and knowledge-based industries. Similarly, Thailand could evolve its electronics manufacturing expertise into digital content creation and software development industries, aligning with global trends in the creative economy (Flew, 2012).

Building a Collaborative Ecosystem for Creative Industries

The study's findings on sector connectivity highlight the potential for building a collaborative ecosystem for creative industries between Thailand and Canada. This approach aligns with the concept of 'creative ecology' proposed by Howkins (2010), where diverse individuals and organizations interact to produce new ideas and creative outputs.

Key elements of this collaborative ecosystem could include:

1. Knowledge Exchange: Facilitating the transfer of expertise in areas where Canada has a competitive advantage, such as digital media and film production.
2. Co-creation Initiatives: Encouraging joint projects that combine Thai cultural assets with Canadian technological know-how.
3. Market Access: Leveraging Canada's position as a gateway to North American markets for Thai creative products and services.
4. Innovation Hubs: Establishing joint innovation centres focused on key areas such as digital content, biotechnology, and advanced manufacturing.

This collaborative approach reflects the importance of cross-cultural collaboration in fostering innovation, as highlighted by Chapain & Comunian (2010), and aligns with research by Pratt (2009) on the importance of creative clusters in driving innovation and economic growth.

Challenges and Opportunities in Transitioning to a Creative Economy Model

The transition to a creative economy model presents both challenges and opportunities for Thailand and Canada. Among the challenges, there exists a significant skills gap in Thailand, which may lead to a shortage of qualified workers in creative sectors. Additionally, the enforcement of intellectual property rights requires strengthening to protect creative outputs effectively. Navigating cultural differences in business practices poses another challenge, as it may hinder collaboration between the two countries. Moreover, exchange rate volatility could impact the stability of exports, complicating international trade in creative goods and services. On the other hand, there are several notable opportunities. The digital transformation offers the potential for digital technologies to stimulate growth within the creative industries. Furthermore, these industries can play a vital role in contributing to sustainable development goals, aligning economic growth with environmental and social objectives. Improved integration into global creative value chains presents another opportunity, allowing both countries to enhance their market reach and competitiveness. Lastly, the ability to leverage unexpected shocks such as global crises can drive innovation and adaptation, fostering resilience within creative sectors. In summary, while the transition to a creative economy model poses distinct challenges for Thailand and Canada, it simultaneously opens avenues for growth and development that can be strategically pursued. These challenges and opportunities reflect broader trends in the development of creative economies globally, as discussed by UNCTAD (2018) and UNESCO (2021).

Conclusion and Policy Recommendation

This study examined the determinants of Thailand's manufacturing exports to Canada and explored potential areas for industrial cooperation between the two countries, with a focus on creative industries. The key findings suggest that factors such as Canadian GDP per capita and regional economic integration positively influence Thailand's exports, while exchange rate appreciation has a negative impact. The analysis highlights the complementary strengths of Thailand and Canada in various sectors, including advanced manufacturing, digital technologies, agro-food, tourism, and healthcare. These findings indicate substantial opportunities for mutually beneficial collaboration in the development of creative and high-technology industries. To capitalize on these opportunities, several policy recommendations are proposed. First, the establishment of a Thailand-Canada Creative Industries Collaboration Fund is suggested to support joint initiatives in key areas such as digital content creation and innovative tourism experiences. Additionally, bilateral programs focused on knowledge transfer and skill development in creative sectors should be developed, incorporating exchange programs for artists, designers, and digital content creators. Furthermore, the creation of a joint task force is recommended to address issues related to intellectual property protection specific to creative industries, thereby fostering a supportive environment for cross-border collaborations. Targeted support programs are essential for aiding small and medium-sized enterprises (SMEs) in both nations to integrate into global value chains within creative and high-technology sectors. The establishment of innovation hubs at the intersection of technology and traditional cultural industries is also crucial, as they can promote the development of culturally rich digital content and products. Additionally, the formulation of co-production agreements for creative content, particularly in film, television, and digital media,

would facilitate joint projects and enhance market access. To enhance connectivity among stakeholders, the creation of sector-specific digital platforms is recommended to link businesses, researchers, and policymakers within target creative industries. Promoting cross-cultural design thinking workshops and innovation challenges would further stimulate new ideas and collaborations in product design and creative services. Moreover, the development of creative clusters in both countries should be supported, with an emphasis on facilitating international linkages among these clusters. Finally, implementing policies that encourage the export of creative services, including tax incentives for companies engaged in international collaborations, is vital. Collectively, these recommendations aim to cultivate a robust collaborative ecosystem for creative industries between Thailand and Canada. By leveraging their respective strengths and addressing potential challenges, both countries can enhance their competitive positions within the global creative economy, driving innovation, fostering cultural exchange, and promoting sustainable economic growth. These recommendations aim to foster a robust collaborative ecosystem for creative industries between Thailand and Canada, leveraging their complementary strengths and addressing potential challenges. By implementing these strategies, both countries can enhance their competitive positions in the global creative economy, driving innovation, cultural exchange, and sustainable economic growth. Future research could focus on in-depth case studies of successful collaboration between Thai and Canadian firms in creative and high-technology industries, as well as a more detailed investigation of the potential impacts of free trade agreements on specific creative industry subsectors. Additionally, exploring the sustainability aspects of creative economy development and its potential contributions to broader sustainable development goals could provide valuable insights for policymakers and industry stakeholders. In conclusion, this study not only illuminates the potential for enhanced economic cooperation between Thailand and Canada but also provides a framework for understanding and fostering creative economic partnerships between developed and developing nations more broadly. As the world continues to navigate technological advancements and economic challenges, such collaborative approaches to creative industry development offer promising pathways for shared prosperity and cultural enrichment.

Notes

Currently, Thailand targets 12 national industrial sectors consisting of Next-Generation Automotive, Intelligent Electronics, Advanced Agriculture and Biotechnology, Food for the Future, High Value and Medical Tourism, Automation and Robotics, Aviation and Logistics, Medical and Comprehensive Healthcare, Biofuel and Biochemical, Digital, Defence, and Education and Human Resource Development (https://www.eeco.or.th).

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