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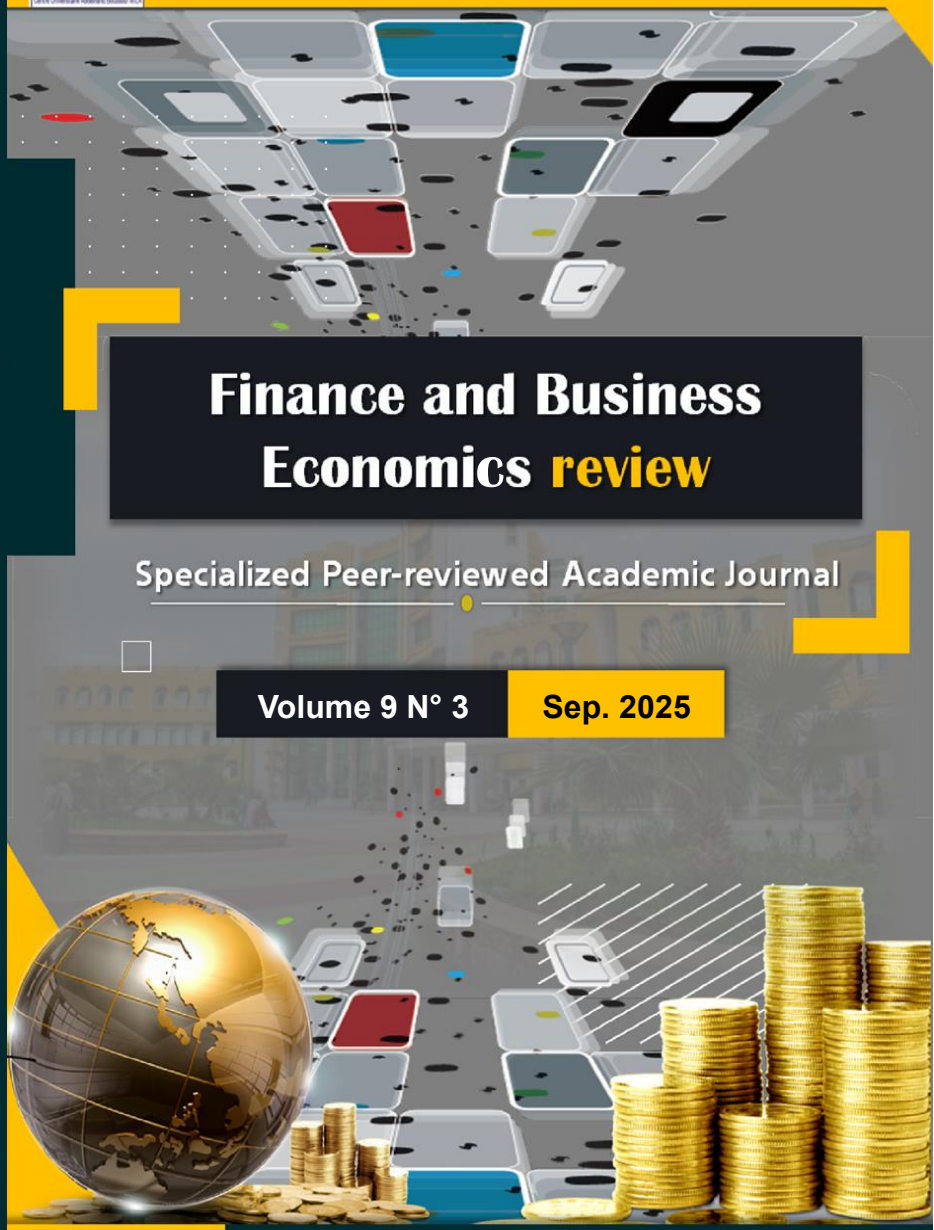


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مجلة دورية دولية علمية محكمة

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اهتمامات المجلة

تنشر المجلة البحوث والدراسات المفاهيمية والتطبيقية الجادة التي تتميز بالأصالة العلمية في مجال **العلوم الاقتصادية والإدارية** بشتى فروعهما في **علم الاقتصاد والاقتصاد القياسي والعلوم المالية والمحاسبة والتسويق وإدارة الأعمال** وغيرها مما يتصل بها، كما تفتح المجلة أوراقها للمراجعات النقدية والردود العلمية حول الاصدارات العلمية المختلفة في مجال اهتمامها.

أهداف المجلة

تهدف المجلة إلى إحداث تكامل بين الفروع المختلفة للعلوم الاقتصادية والإدارية من حيث حرصها على نشر البحوث والدراسات التي تتناول إشكالات راهنة ومهمة على المستوى المعرفي والواقعي.

إجراءات النشر

- **تقديم المقالات :**

- تقديم المقالات المقترحة للنشر في " مجلة اقتصاد المال والأعمال "يتم حصرا عبر صفحة المجلة على المنصة الإلكترونية للمجلات العلمية الجزائرية (ASJP)، ويتطلب ذلك امتلاك أو فتح حساب على المنصة www.asjp.cerist.dz.
- لتقديم المقال، يلتزم المؤلفون بتنزيل الملفات المضغوطة المتواجدة في صفحة المجلة من خلال أيقونات "تعليمات للمؤلفين " و " دليل المؤلفين " على الرابط:

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- يلتزم المؤلفون حتما بإتباع التعليمات والتوصيات المذكورة في "تعليمات للمؤلفين" و "دليل المؤلفين" من أجل تسهيل وتسريع عملية النشر.
- يتم تقديم المقال من خلال النقر على أيقونة "إرسال مقال" / "Paper submission" / " Soumission d'article" في صفحة المجلة على أرضية ASJP المذكورة سلفا.
- إذا كان للمؤلف **اسم مستخدم/ كلمة مرور** لـ "حساب على المنصة": "تسجيل الدخول"/ "Se connecter"/ "Login"
- فإذا لم يكن كذلك فيجب التسجيل من خلال: "تسجيل" / "Inscription" /" Registration " .

ويتيح التسجيل لصاحبه الدخول لتقديم المقالات ومتابعة وضعية مقالاته المقدمة للنشر.

- **المبادئ التوجيهية للمؤلف:**

يلتزم المؤلفون بالتعليمات المذكورة في " دليل المؤلفين " ، ولذلك ندعوهم لقراءة هذه التوصيات بعناية والالتزام بها، حيث يحق لرئيس التحرير رفض المقال شكلا وإعادة الأوراق البحثية التي لم يتم تقديمها وفقًا لهذه التوصيات.

- **إعداد المقال:**

لتسريع عملية نشر المقالات في " مجلة اقتصاد المال والأعمال "، ندعو المؤلفين لاستخدام قالب المجلة، ويمكن للمؤلفين تنزيل القالب من قسم "**تعليمات للمؤلف**"، حيث يمكنهم الوصول إلى هذا الفضاء عن طريق زيارة:

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ثم النقر على "تعليمات للمؤلف" على الجانب الأيسر من الشاشة.

- **الاطلاع على ملف دليل المؤلف:**

بالضغط على أيقونة "دليل المؤلف" يتم تحميل ملف مضغوط، وهو توجيه لصاحب المقال يوضح طريقة إرسال المقال، كما يتضمن حقوق المؤلف الخاص بالمجلة ويتضمن أيضا خطاب تعهد يمضي عليها صاحب المقال توضح أن الملكية الفكرية تعود للمجلة فقط.

- **إرسال المقال:**

بعد إعداد المقال وفقا لقالب " مجلة اقتصاد المال والأعمال " الذي تم تحميله، والإطلاع على دليل المؤلف، يتم الضغط على أيقونة "إرسال مقال". تظهر استمارة للملء تتضمن مختلف البيانات الخاصة بالمقال وبالمؤلفين: لغة المقال؛ عنوان المقال؛ الملخص؛ كلمات مفتاحية؛ الاسم الكامل للمؤلف؛ مؤسسة الانتماء؛ الايميل (ويلزم إضافة المؤلفين الآخرين في حالة وجود أكثر من مؤلف)؛ اقتراح مراجعين.

بعد ملء كل البيانات وتحميل ملف المقال على المنصة، يتم الضغط على أيقونة: "إرسال " الموجودة أسفل استمارة المعلومات.

- **إشعارباستلام المقال:**

في حالة نجاح عملية إرسال المقال على المنصة تظهر رسالة على الشاشة تبين ذلك، وفي مرحلة موالية يستلم المؤلف المرسل على إيميله الشخصي إشعارا بتقديم المقال، وإشعارا للمؤلف الثاني على إيميله لتأكيد اشتراكه في المقال.

- **إشعار برفض المقال:** إذا تبين أن المقال لا يطابق قالب وشروط المجلة فسيتم إشعار المؤلف برفض المقال.

- **عملية معالجة المقال:** وتنقسم إلى ثلاث مراحل:

- المرحلة الأولى -

يتم فحص المقال بشكل سري على مستوى لجنة القراءة للمجلة، التي تجتمع بانتظام وتتدخل في مرحلة ما قبل التقييم، حيث تقدم قرارا بأهلية المقالات قبل إرسالها إلى المراجعين أو المحررين المساعدين، إذا كان القرار سلبيا فسيتم رفض المقال على المنصة مع اعلام صاحب المقال بسبب الرفض (والتي تتعلق عادة بعدم

احترام قالب المجلة وشروط النشر)، ويمكن للمؤلف إعادة إرسال مقاله مع الأخذ بعين الاعتبار التوصيات المقدمة.

- المرحلة الثانية -

في الحالة التي تكون فيها المقالة مؤهلة للتقييم (تم إعدادها وفق قالب المجلة ووفق شروط النشر)، سيتم ما يلي:

- إغفال المقال بحذف المعلومات الشخصية للمؤلف و/أو المؤلفين (الاسم/مؤسسة الانتماء/الايميل...)
- إرسال المقال المغفل للمحرر المساعد المعني حسب تخصص ميدان البحث للمقال.
- يتكفل المحرر المساعد بإرسال المقال المغفل إلى مراجعين اثنين (محكمين) حسب التخصص وتحت مسؤوليته، كما يمكن لرئيس تحرير المجلة إرسال المقال للمراجعين مباشرة دون المرور عبر المحررين المساعدين حسب الحالة.
- يمكن للمحرر المساعد المرتبط أيضًا تقييم المقالة إذا رغب في ذلك حسب التخصص وتحت مسؤوليته.
- يتولى المراجعان مسؤولية تحكيم الورقة البحثية وفقًا لاستمارة تقييم موحدة متوفرة على المنصة ASJP بشكل إلزامي.
- لا يتم الفصل في نتيجة تقييم المقال إلا بعد تقرير المراجعين الاثنين معا، ويتم معالجتها كالآتي:

<u>مقبول دون تعديل</u> في التقريرين، هنا يتم إرسال إشعار بالقبول النهائي للمؤلف المعني.

<u>مقبول مع تحفظ</u> على الأقل في أحد التقريرين، هنا يتم إرسال إشعار قبول بتحفظ للمؤلف المعني، حيث يتوجب عليه تعديل المقال حسب ملاحظات المراجعين في أجل لا يتجاوز شهرا واحدا، ليعاد إرسال المقال المعدل مرة ثانية (بعد استلامه من المؤلف) للمراجعين، على أن تكون نتيجة التحكيم الثانية نهائية بالقبول أو الرفض النهائي.

<u>قبول المقال من طرف مراجع واحد ورفضه من المراجع الثاني</u>، هنا يتم إرسال المقال لمراجع ثالث على أن يكون رأي هذا الأخير مرجحا، وتتم معالجة نتيجة التحكيم وفق ما سبق إلا في حالة الحصول على رفض ثاني حيث يشعر المؤلف بالرفض.

<u>رفض المقال من المراجعين الاثنين معا</u>، هنا يتم إشعار المؤلف بذلك، على أن لا يتم إعادة إرساله مجددا للمجلة بنفس الصيغة.

ملاحظة: توفر سكرتارية " مجلة اقتصاد المال والأعمال "خط التواصل المغفل بين مؤلفي المقالات والمحررين المساعدين والمراجعين حصريا عبر منصة ASJP .

- **مدة تقييم المقالات:** تسريعا لعملية التقييم تُمنح فترة تقييم مدتها 30 يومًا، ويمكن أن تمتد إلى شهرين كحد أقصى مراعاة لضغط التقييم في بعض التخصصات على المحكمين، علما أن العملية تتوقف على

المراجعين، وفي حالة تجاوز هذه الآجال يتم إرسال المقال لمراجعين جدد مما سيؤدي إلى تمديد آجال التقييم.

- **متابعة المؤلف لوضعية مقاله على المنصة:**

يمكن للمؤلف الدخول على حسابه في المنصة ومتابعة وضعية مقاله مرحلة بمرحلة وذلك بالضغط على أيقونة: "المقالات" ثم الضغط على أيقونة: "المقالات المرسلة" سيظهر جدول يحمل تفاصيل المقال من: عنوان؛ تاريخ الإرسال؛ اسم المجلة؛ التفاصيل؛ الحالة. وهذه الأخيرة تمر على عدة مراحل:

- المرحلة 1: قبول أو رفض التحكيم
- المرحلة 2: مقال في انتظار المراجعة
- المرحلة 3: اسناد المقال للمراجعين
- المرحلة 4: قرار المراجعين بقبول المقال أو رفضه أو طلب التعديل.

- المرحلة الثالثة -

بعد القبول النهائي للمقال، يتوجب على المؤلف:

- **المراجع الببليوغر افية:** إدخال المراجع الببليوغرافية لمقاله وفقا للإطار المحدد على المنصة من حساب المؤلف، من المهم الإشارة إلى أنه في حالة عدم إدخال هذه المراجع، لا يمكن نشر المقالات المقبولة.
- **خطاب التعهد:** إرسال إقرار بحق نقل حقوق التأليف والنشر (Letter of Undertaking (Ar).doc) وفق النموذج الخاص بالمجلة الذي يمكن تحميله من أيقونة دليل المؤلفين في صفحة المجلة على منصة ASJP.

- **سياسة الانتحال:**

تشكل السرقة العلمية، بجميع أشكالها سلوكًا غير أخلاقي على العموم ودون استثناء، وبالنسبة لمجلة اقتصاد المال والأعمال لا يتم قبول أي خرق لهذه القاعدة، ولن يتم قبول أي مقال آخر للمؤلف الذي قام بالانتحال.

افتتاحية العدد

الْحَمْدُ لِلَّهِ خلق الخلق وكَانَ بِعِبَادِهِ خَبِيْرًا بَصِيْرًا، وتَبَارَكَ أن خَلق سبعَ فِي سمَاوات طباقا وَجَعَلَ فِيْهَا مَصَابيحَ زينةً وَقَمَرًا مُنِيْرًا، وأَشْهَدُ اَنْ لاَ إِلَهَ إِلاَّ اللهُ وأَشْهَدُ اَنَّ مُحَمَّدًا عَبْدُهُ وُرَسُولُهُ، بَعَثَهُ بِالْحَقِّ بَشِيْرًا وَنَذِيْرًا، وَدَاعِيَا إِلَى الْحَقِّ بِإِذْنِهِ وَسِرَاجًا مُنِيْرًا، اَللَّهُمَّ صَلِّ عَلَيْهِ وَعَلَى آلِهِ وَصَحْبِهِ وَسَلِّمْ تَسْلِيْمًا كَثِيْرًا. أَمَّا بَعْدُ:.

بسم الله نستفتح هذا العدد الثالث من المجلد التاسع، لمجلة اقتصاد المال والأعمال والتي يصدرها معهد العلوم الاقتصادية، التجارية وعلوم التسيير بالمركز الجامعي عبد الحفيظ بوالصوف–ميلة-، هذا العدد من المجلة الذي يمثل امتداد لمسارها في تدعيم البحث العلمي الجاد، حيث تواصل المجلة دربها في أن تكون مجالا تنشر فيه أعمال المنتمين إلى مراكز البحث والجامعات المختلفة داخل الوطن العزيز، وغيرهم من المشتغلين بالبحث العلمي خارجه.

وإذ نقدم هذا العدد إلى القراء الكرام؛ فإننا نرجو أن يجدوا فيه ما يفيدهم وينفعهم، كما نسأله تعالى أن يجازي خير الجزاء كل من بذل جهد يسيرا أو كبيرا في صدور المجلة واستمرارها، وأن يبارك في علمهم وعملهم.

والله الموفق.

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The Role of Free Trade Zones in Promoting Integration into Global Value Chains: A Case Analysis of Singapore Using a Musical Chairs Game

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Abstract: This study discusses the strategic function of free trade zones (FTZs) in the integration of national economies into global value chains, using the case of Singapore. Through a descriptive-analytical method and the musical chairs game model, it assesses both the participatory and competitive aspects of Singapore's FTZ policy, based on data from the Economic Development Board and International Monetary Fund. Additionally, the research discusses Singapore's integration into ASEAN networks and its positioning in the global economy. Findings recognize FTZs as closely linked to economic upgrading in pharmaceuticals, logistics, hi-tech manufacturing, and R&D. The paper presents FTZs as drivers of economic change and offers lessons for emerging economies pursuing global integration.

Keywords: Free Trade Zones; Value Chains; Musical Chairs.

1. Introduction

As globalization accelerates and economic transformations reshape global markets, global value chains have become essential drivers of economic growth and sustainable development. In an era marked by increasing globalization and rapid economic transformations, global value chains have emerged as key drivers of economic growth and sustainable development. These chains enable countries to integrate into international production and trade networks, unlocking significant economic opportunities such as expanding exports, attracting foreign direct investment, and fostering technological innovation (UNCTAD, 2016). However, achieving effective integration into global value chains necessitates the adoption of well-formulated policies and strategic initiatives to enhance national competitiveness, particularly for economies that rely on openness as a central component of their development strategies (Yeo, 2020).

Among the various policy instruments designed to enhance economic integration, free trade zones (FTZs) stand out as highly effective mechanisms. By providing investment incentives, world-class infrastructure, and regulatory flexibility, FTZs foster an environment conducive to trade expansion and industrial growth (World Bank, 2019). Singapore exemplifies a country that has successfully leveraged FTZs to enhance its integration into GVCs. Through strategic policy implementation, Singapore has transformed its FTZs into pivotal platforms for economic integration and international trade expansion (Pao-Li et al., 2020)

Nevertheless, a crucial question arises regarding the effectiveness of these zones in facilitating sustainable structural transformation and solidifying Singapore's global economic standing, necessitating further research and analysis.

To analyze the competitive and participatory dynamics within GVCs, this study employs the 'Musical Chairs' framework. This framework serves as an analytical tool to examine how economies compete for positions within global trade networks, where access to trade opportunities is often constrained by shifting competitive advantages. By applying this perspective, the study aims to assess how Singapore's FTZs influence its ability to secure and sustain a favorable position within global value chains.

While extensive research has been conducted on global value chains and their economic impact, there remains a notable gap in understanding the direct role of free trade zones in shaping a country's position within these networks. Specifically, studies on Singapore have yet to provide a detailed assessment of how FTZs serve as strategic instruments for global competitiveness. Most research focuses on general aspects of trade and investment without offering a detailed examination of how FTZs function as strategic instruments for enhancing global competitiveness (Gereffi, 2019; World Bank, 2020). For instance, (Gerrefi, 2019) highlights the role of GVCs in shaping global trade patterns but does not explore the specific contribution of FTZs. Similarly, (World Bank, 2020) discusses trade facilitation policies but falls short of addressing how FTZs serve as mechanisms for deeper economic integration. This research gap highlights the need for a more in-depth investigation into the role of FTZs in facilitating economic integration. (Kim & Zhang, 2018) argue that FTZs can be catalysts for national competitiveness, yet their study does not specifically assess Singapore's strategic approach. Addressing this gap, the present study aims to provide a case-based analysis of Singapore, demonstrating how its FTZs contribute to strengthening its position within GVCs (Pao-Li et al., 2020).

The significance of this research lies in its contribution to a deeper understanding of how FTZs support economic integration while providing practical insights for policymakers on designing and optimizing these zones for sustainable economic benefits. Additionally, it enriches academic discussions on the strategic utilization of FTZs to promote comprehensive and long-term economic development (Kim & Zhang, 2018)

This study aims to assess the role of FTZs in enhancing Singapore's position within GVCs. To achieve this objective, a descriptive-analytical methodology is employed, incorporating both quantitative and qualitative data from reputable sources such as the Singapore Economic Development Board and the International Monetary Fund. Furthermore, the study utilizes the "Musical Chairs" framework to analyze the competitive and participatory dynamics within GVCs, emphasizing the impact of FTZs on economic growth and trade openness indicators.

By conducting this research, the study seeks to provide a comprehensive understanding of how FTZs contribute to economic advancement and strategic positioning within GVCs. It further aims to establish Singapore as a model for global economic integration, offering

insights into the broader implications for other economies seeking to optimize their role in international trade.

Singapore exemplifies how FTZs can be leveraged to drive sustainable economic growth and enhance a nation's role in international trade. However, important questions remain: To what extent do FTZs enable Singapore to sustain its competitive edge in global markets? What key factors determine the long-term success of FTZs in fostering structural and sustainable economic integration? Addressing these questions is crucial for understanding the broader implications of FTZs in shaping future global trade and economic policies.

This study is structured into six interconnected sections. Following the introduction, the second section reviews relevant studies in the literature. The third and fourth sections provide an overview of the free trade zones in Singapore and present the data set and methodology used in the analysis. The fifth section discusses the results, while the final section concludes with evaluations and key findings.

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2. Literary Review

The existing economic literature provides extensive discussions on both free trade zones and global value chains, yet limited studies comprehensively analyze the interaction between these two variables. Understanding this interplay is crucial for evaluating the role of free trade zones in facilitating a country's integration into global value chains. This section critically examines relevant studies in both domains and highlights the research gaps that this study aims to address.

2.1. Free Trade Zones: An Evolving Economic Instrument

Free trade zones have gained increasing significance in global economic development, serving as strategic tools for enhancing trade liberalization and industrialization. Early research by (Jayawardena, 1983; Chen, 1995; Huff, 1997). Highlighted the foundational role of FTZs in attracting foreign direct investment (FDI) and promoting export-led growth. More recent studies estimate that by 2018, there were approximately 5,400 special economic zones worldwide, with around 42.6% of them classified as FTZs (Baldwin & Venables, Spillovers and growth in global production networks, 2013). These zones offer several economic benefits, including investment attraction, knowledge transfer, industrial upgrading, and GDP growth. (Riccardi, 2018; Siti et al., 2022)

However, despite their benefits, FTZs face several contemporary challenges, such as governance issues, adaptation to the Fourth Industrial Revolution, and ensuring sustainable development. (Tan H. X., 2020; Wong, 2020). Highlight the conceptual ambiguity surrounding FTZs, emphasizing the need for clearer definitions and categorizations. Additionally, there is growing attention on the sustainability performance of FTZs, as policymakers seek to align them with long-term economic and environmental objectives (UNCTAD, 2021)

Modern free trade zones have evolved beyond their traditional role of facilitating low-cost manufacturing to become key drivers of technological innovation and integration within global value chains. According to Singapore's Research, Innovation, and Enterprise 2025 plan, these zones play a crucial role in advancing economic development and global competitiveness, FTZs are increasingly focused on areas such as manufacturing, trade, and connectivity, while enhancing research and development (R&D) capabilities to attract multinational corporations (MNCs) seeking advanced infrastructure and regulatory benefits (The National Research Foundation Singapore, 2025)

This transformation reflects a broader shift in investment priorities, favoring knowledge-based industries over labor-intensive manufacturing (Ministry of Trade and Industry Singapore, 2022). Despite these advancements, further research is needed to explore how specific policies within FTZs contribute to sustainable economic growth (Ministry of Trade and Industry Singapore, 2023).

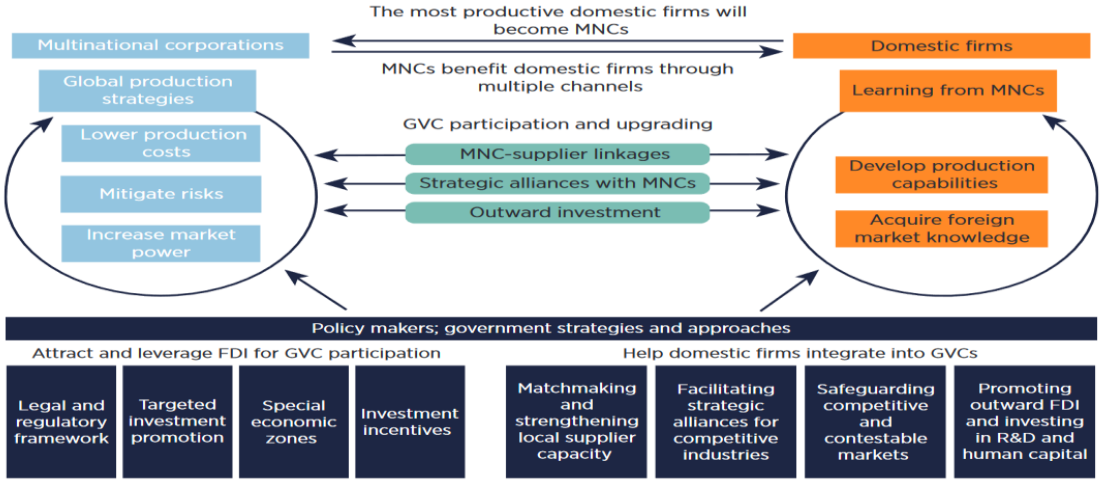
2.2. Global Value Chains: Drivers and Challenges

The World Bank's 2020 Development Report, Trade for Development in the Era of Global Value Chains, underscores the significant role of GVCs in facilitating technological spillovers and productivity growth (Gereffi et al., 2005; Leong, 2021) Local firms integrated into GVCs benefit from knowledge transfers, improved production capabilities, and expanded market access (Zeng, 2019; Arbatli & Hong, 2016) Multinational corporations (MNCs) play a pivotal role in this process, serving as conduits for capital movement and innovation diffusion (Reis et al., 2022; Liu & Cheng, 2021)

The COVID-19 pandemic exposed vulnerabilities in global production networks, prompting discussions on resilience, sustainability, and diversification within GVCs (Humphrey, 2004). (World Bank, 2020)warns against protectionist policies that may hinder GVCs' efficiency, advocating instead for strategies that enhance trade openness and inter-firm collaboration.

This form is evident through government strategies and approaches followed by policy makers in host countries, to help local companies integrate into global value chains, by focusing on the following essential elements:

Figure. 1. A unifying framework for the three key players in global value chains: Multinational corporations, domestic firms, and policymakers



Source: (Christine et al., 2021)

Fig. 1 shows the relationship between local firms and multinational corporations (MNCs) and the role of policymakers in promoting and upgrading participation in global value chains (GVCs). Here is a detailed explanation of the different parts of the figure:

The relationship between multinational corporations and domestic firms, alongside the role of policymakers in enhancing domestic firms' participation in global value chains, is crucial. Domestic firms benefit from linkages with multinational corporations through strategic alliances, the development of production capabilities, and the acquisition of foreign market knowledge. Policymakers facilitate this process by attracting foreign direct investment through legal frameworks, investment incentives, and the establishment of special economic zones. Additionally, they support domestic firms by strengthening local suppliers and investing in research and development and human capital. The ultimate goal is to empower domestic firms to integrate into the global economy and compete effectively.

To achieve these goals, several measures are emphasized:

- Encouraging foreign direct investment abroad, especially investment in research and development, paying more attention to human capital; (Kaplinsky R. , 2010; Antràs & Chor, 2013; Dallas et al., 2019; Raei et al., 2019; Amador et al., 2015)
- Protecting competitive markets and establishing fair competition; (Gereffi & Fernandez-Stark, 2011; Antràs & Gortari, 2020; Gereffi, 2019)
- Encouraging alliances and adopting a competitive industries strategy; (Mahutga, 2012; Cheng et al., 2015; Fernandez-Stark & Gereffi, 2019)
- Creating compatibility between local suppliers and enhancing their capabilities. (Xiao et al., 2020; Kaplinsky R. , 2015; Ravenhill, 2014) (Gereffi, 2019)

These measures enable domestic firms to benefit from the expertise of MNCs, learn from their practices, and develop advanced production capabilities while gaining foreign market knowledge. This, in turn, facilitates greater participation in GVCs by improving linkages between MNCs and suppliers, fostering strategic alliances, and encouraging outward investment.

From the perspective of foreign investors, MNCs benefit from partnerships with local companies by leveraging the incentives provided by host countries. These incentives are designed to attract foreign investment and integrate local firms into GVCs. Key incentives include: (Lee, 2010)

- General investment-related incentives.
- Advantages associated with special economic zones.
- Targeted investment promotion policies.
- Supportive legal and regulatory frameworks

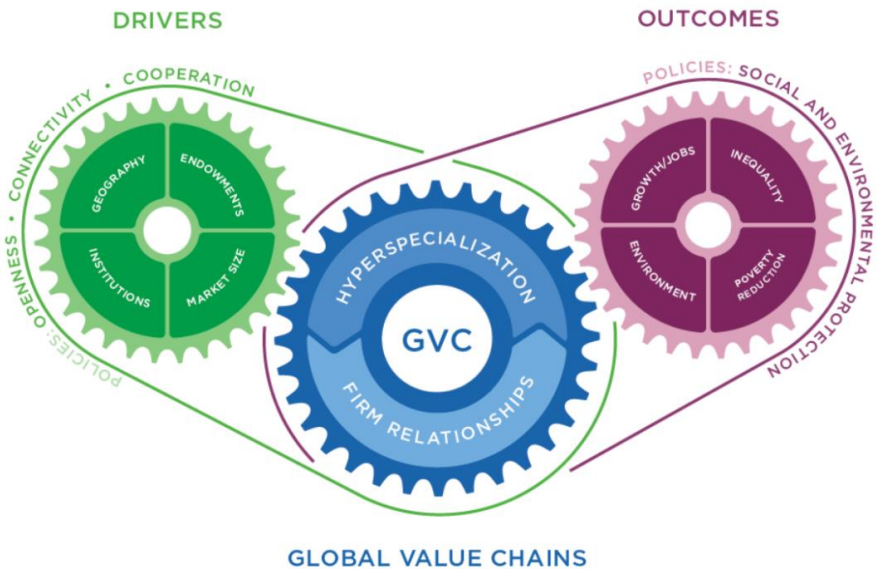
These efforts align with the global production strategies adopted by MNCs, which are primarily aimed at:

- Reducing production costs.
- Mitigating risks.
- Increasing market power.

Such a collaborative approach between domestic firms, MNCs, and policymakers ensures effective integration into GVCs, fostering mutual benefits and sustainable economic growth.

From the above, it can be concluded that the strong relationships between these companies will encourage increased hyper-specialization in upgrading global value chains further. This requires more detail by displaying Fig. 2 below,

Figure. 2. Excessive specialization and strong relationships between firms determine the growth of global value chains



Source: (World development report, 2020)

From this figure, it is clear that global value chains operate on two opposite sides, one of which lies in the leaders who ensure the establishment of policies of openness, interconnectedness and partnership. Depending on the gains of geography, time space, institutions and market size. The other is the outputs related to social policies and environmental protection, which are also based on income, job positions, inequality, poverty reduction and the environment. This is what (JANGAM & RATH, 2024) argued.

Therefore, GVCs may deviate from traditional trade in another way as well. According to the (WTO, 2020) report. In the former case, there are two characteristics that distinguish it from the latter: strong specialization in a narrow range of tasks and long-term partnerships between the two companies. These highly specialized companies operate at different points along value chains in an attempt to maximize productivity and efficiency. Long-term partnerships between companies also accelerate technology transfer and the use of capital and inputs along resource chains. Which ultimately leads to generating more revenue and increasing productivity. Which is what he discussed. (David & Biederman, 2000; Jones et al., 2020; Wuri et al., 2023)

In this context, and in order to understand more, it is necessary to study the relationship between free trade zones and global value chains according to the following:

2.3. The Intersection of Free Trade Zones and Global Value Chains

Multinational corporations (MNCs) have witnessed continuous growth since the 1970s, with their number increasing from approximately 7,000 in 1970 to over 38,000 by the year 2000. By 2010, this number had risen to more than 103,700, reflecting a 169% increase since the 1990s (Mustafa & Khadija, 2020). According to FDI Intelligence, the top 100 global corporations invested a combined total of $720 billion in research and development (R&D) in 2022, marking a 15.3% increase from 2021. Today, MNCs have emerged as pivotal actors in shaping the global economic and political landscape due to their vast resources, extensive operational reach, and the wide range of goods and services they provide across multiple countries (Al-Haj, 2024)

These corporations play a crucial role in fostering economic development in host countries by creating employment opportunities, attracting foreign direct investment (FDI), and stimulating growth across various industrial and service sectors. (Hussein, 2024) In the context of regional investment, Riyadh, for instance, issued licenses for the establishment of regional headquarters for 517 multinational corporations by mid-2023, surpassing its target of attracting 500 companies by 2030. (Asharqbusiness, 2024) The cumulative number of MNCs worldwide has exceeded 100,000, with approximately 900,000 subsidiaries operating abroad. The contribution of these corporations to global production and trade is substantial; in 2016, MNCs and their subsidiaries accounted for 36% of global output, over half of global imports, and nearly two-thirds of total exports, as reported by the OECD's Multinational Enterprise Analytical Activities Database. (Yue, 2018)

The impact of MNCs is particularly evident in knowledge-intensive industries and regional processing sectors. For example, ninety percent of exports from these sectors are attributed to multinational corporations, making industries such as automobile manufacturing among the most globally integrated (Than, 2000). Notably, MNCs account for approximately 70% of exports within the second most traded product categories, particularly those situated in free trade zones. Due to the large size and perishability of some of these goods, a significant portion of trade within these sectors takes place within regional value chains rather than global value chains. (Ng, 2019)

The integration of external supplier networks and internal affiliate networks has been instrumental in shaping new organizational structures, facilitating the seamless flow of capital, knowledge, and technology across borders. According to the World Bank (2021), the expansion of global production networks has transformed the way multinational corporations engage with host economies, reinforcing the role of free trade zones as essential nodes within GVCs. This dynamic has not only enhanced the competitiveness of participating economies but has also driven innovation, efficiency, and long-term economic growth. (World Bank, 2021)

2.4. Research Gap and Contribution

Despite extensive research on FTZs and GVCs, existing literature lacks a comprehensive analysis of how FTZs function as mechanisms for sustainable GVC integration, particularly in Singapore’s context. Previous studies have largely focused on general trade and investment aspects without providing an in-depth examination of FTZ-specific strategies (World Bank, 2020). Addressing this gap, the present study aims to analyze Singapore’s FTZs using a case-based approach, incorporating the 'Musical Chairs' framework to assess competitive and participatory dynamics within GVCs. By doing so, this research contributes to a deeper understanding of how FTZs support economic integration while offering practical insights for policymakers on optimizing these zones for sustainable development.

3. An Overview of Singapore's Free Zone Outlook

To analyze the role of free zones in Singapore's entry and development into value chains, it is necessary to present the importance of free zones in Singapore's export and investment attraction strategy, identify the products and industries that have particularly benefited from free zones in Singapore, then review how free zones have contributed to attracting foreign direct investment to Singapore, and how they have enabled companies to participate in various production and service activities, and thus identify the main sectors and industries that have benefited from the incentives and facilities provided in free zones, such as electronics, pharmaceutical industries, and logistics services, according to the following: (Bai et al., 2024)

3.1. Contribution of Free Zones to Attracting Foreign Direct Investment to Singapore

Singapore has formed close trade relations with the world through a wide range of free trade agreements, through which this country has come to enjoy a wide network of more than 27 free trade agreements (FTAs) worldwide, which will allow greater freedom in trade transactions, and ease of dealing with major economies in the world.

With free trade agreements, such as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and the Regional Comprehensive Economic Partnership (RCEP), Singapore-based companies can establish closer trade ties with key trading partners such as Canada, Mexico, and China, according to the (Singapore Free Trade Zones Act, 2014; Lim & Choo, 2015). Potentially low or zero tariffs are also a major incentive for exports from Singapore, enabling competitiveness and facilitating preferential pricing and entry into many markets. FTAs, then, can often help ensure long-term business stability or reduce barriers to the flow of goods, as argued by the (Singapore Free Trade Zones Act, 2014; Ramkishen et al., 2002; Laurence et al., 2015)

All of this contributed significantly to the improvement of the most important economic indicators, which can be highlighted in Table 1 below.

Table.1. Development of some of Singapore's overall indicators during the period (2007-2021)

years	GDP at constant princes in billion dollars	Exchange rate (local operation per dollar)	Singapore Logistics Performance Index	Value of Singapore's total exports (million dollars)
2007	211.523	1.51	4.19	28.927
2010	247.501	1.36	4.09	36.361
2012	274.543	1.25	4.13	44.255
2014	299.095	1.27	4.00	54.694
2016	318.969	1.38	4.14	44.352
2018	346.060	1.35	4.00	50.396
2021	360.891	1.34	4.30	63.969

Source: (Al-Diasty et al., 2024)

From the outputs of the overall indicators table for Singapore during the period (2007-2021), the positive change that the country has achieved is evident through its reliance on improving its integration into global value chains through free zones, as the gross domestic product jumped from about 211 billion dollars in 2007, to approximately 361 billion dollars in 2021. The value of this country’s exports also rose from about 29 billion dollars in 2007 to approximately 64 billion dollars in 2021. All of this was the result of Singapore’s interest in some sectors and industries that achieve a margin of competitiveness, by offering a set of incentives and facilities for these sectors. sectors in free zones, and this can be further explained by analyzing the following:

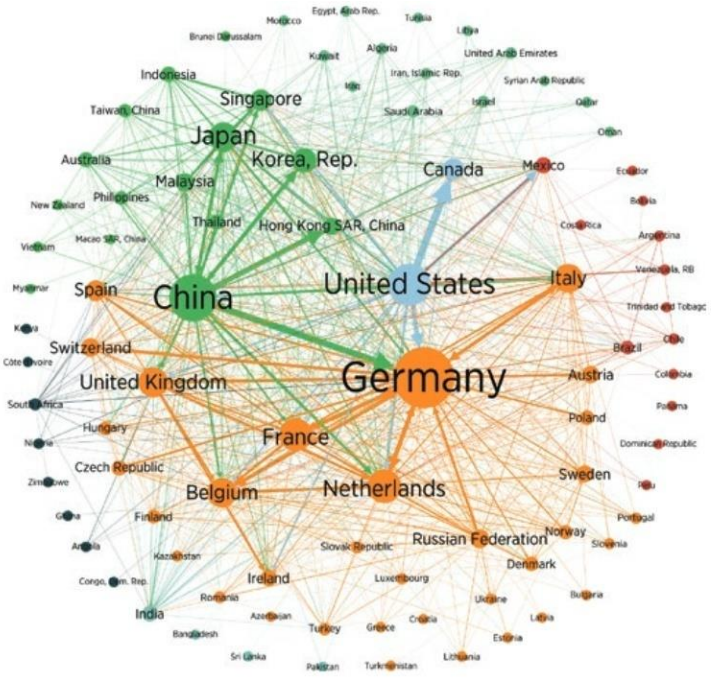
3.2. Free Zone Incentives and Facilities Provided to Key Sectors and Industries

In the context of the incentives approved by the Singapore government, many sectors and industries have benefited from all these facilities, most notably electronics, pharmaceuticals, and logistics. In addition, against the backdrop of Singapore's advanced shipping and air

industries, Tuas Port has been connected to more than 600 ports in the world, and Changi Airport has been connected to more than 100 air routes. All of this has made this country one of the most connected and interconnected economies in the world. (Qiang et al., 2021)

In this context, manufacturers in this country have been able to diversify their supply chains in Asia and the rest of the world within the foreign direct investment network, the importance of which is linked to its importance in the global value chain network, which can be further illustrated through Fig. 3 below:

Figure. 3. The three central nodes in the global value chain trade networks



Sources: (Christine et al., 2021)

Note: The size of each node represents its weighted degree, which measures the corresponding economy's centrality to global value chains. Data for 2018 and 2019 are forecast based on the International Monetary Fund World Economic Outlook.

Fig. 3 shows the increasing importance in the global value chain network of countries despite taking different paths in achieving development. This importance is based on the preceding improvement in foreign direct investment links with various other countries of the world. Hence, it appears that global value chains and participation in foreign direct investment are centered around three main regions, each region built around a central node. Focusing on the East Asia and Pacific region, China has replaced Japan as the main node of this region since 2011, and thus has become a center for foreign direct investment and global value chains.

It is also noted that Singapore comes in third place in the East Asia and Pacific region, behind China (the primary center of the region) and Japan and South Korea (the two secondary centers in this region), meaning that it represents the third secondary node in the region, which reflects the extent of its progress in global value chains. By benefiting more from access to foreign capital.

3.3. Industries Benefiting from Singapore's Free Zones

Singapore's free trade zones have been instrumental in enhancing the competitiveness of various industries by providing tax incentives, streamlined customs procedures, and leveraging the country's strategic geographic location. Among the most significantly impacted sectors, the electronics industry stands out, contributing approximately 40% of Singapore's total manufacturing output. Leading multinational corporations, such as Samsung and Intel, have capitalized on these advantages to optimize their global distribution networks. The manufacturing sector plays a vital role in Singapore's economy, accounting for 22% of the national GDP. This sector encompasses a diverse range of industries, including energy, chemicals, biomedical technology, electronics, semiconductors, precision engineering, electric vehicles, and aerospace. In recent years, Singapore has also intensified its efforts to expand activities in the agricultural sector, with a particular emphasis on the development of renewable energy technologies. These initiatives align with the broader national strategy to advance and diversify the manufacturing industry, reinforcing Singapore's position as a global economic hub. (Singapore Economic Development Board, 2023)

Under Singapore's "Industrialization 2030" plan, from a macroeconomic perspective, Southeast Asia is a very important location for manufacturers due to its low labor costs, availability of a highly skilled workforce, and a strong consumer market size, valued at $650 million. In this context, companies can benefit from the Southeast Asian Manufacturing Alliance (SMA), built on a partnership between the Economic Development Board of the entity and strategic private sector partners, which will help the consortium of companies planning to use the Singapore Strategy (SG) to expand further into Southeast Asia. (Ministry of Trade and Industry, 2022)

In this regard, Singapore's highly skilled talent pool, innovation focus, advanced technology infrastructure and easy global connectivity have attracted a large number of the world's leading pharmaceutical companies, who have established their production bases here. The country is now home to more than 80 pharmaceutical and medical device manufacturing plants, employing a total of 24,000 people. (Economic Development Board of Singapore, 2023)

An additional 14 companies have recently been established, employing around 7,000 workers. The Tuas Biomedical Park has built several buildings and laboratories, such as the Biomedical Park, complementing Biopolis in the North, and is home to companies such as GSK, Pfizer, Sanofi, MSD, Novartis, Roche and AbbVie. All of these companies form Singapore's thriving biopharmaceutical ecosystem, which includes leading manufacturers of small molecules, biologics, drugs, vaccines and other pharmaceutical and medical products. (Economic Development Board, 2023)

To name a few, companies that have benefited most from Singapore's R&D advantage, talent and regional connectivity to serve Southeast Asian markets include US biotech giant Amgen and Swiss eye device maker Alcon. Singapore's biopharmaceutical exports have more than tripled over the past two decades to reach nearly $14.27 billion in 2022, an indication of the sector's strong growth, positively impacting the country's healthcare ecosystem and cementing its position as a leading biopharmaceutical hub in Asia. (Economic Development Board, 2022)

3.4. Key Players in The Value Chains Linked to Singapore's Free Zones

This includes multinationals, large local companies, and relevant government institutions. Southeast Asia is the main sub-region, with 48% of companies planning to invest or expand

their manufacturing capacity over the next three years, while 11% plan to reduce or exit their manufacturing capacity. South Asia follows, with 36% planning to expand or create new manufacturing capacity and 11% planning to reduce it. This is not surprising given the growth in this region over the next two years, as forecasted by the International Monetary Fund II.

Interestingly, while 16% of companies surveyed plan to reduce or exit their manufacturing footprint in North Asia, 27% are investing there. As companies are concerned about the ongoing geopolitical tensions between the US and China and are trying to de-risk their supply chains in this region, the huge markets and growth represent business opportunities that cannot be ignored and withdrawn from. Here are some examples of companies investing in manufacturing capabilities in the Asia-Pacific region: (International Monetary Fund, 2018)

Apple is increasing manufacturing capacity in India for products such as iPhones, which are assembled by electronics makers Hon Hai Technology Group (Foxconn), Wistron, and PEGATRON3.3. Hon Hai Technology Group (Foxconn) announced a major new factory in Vietnam with an investment of $300 million to expand its existing operations in the country.

Millipore Sigma, the US and Canadian life sciences subsidiary of Merck KGaA, in Darmstadt, Germany, plans to invest $100 million over six years to accelerate the manufacturing of single-use biopharmaceuticals in Wuxi, Germany, to support demand from China and the Asia-Pacific region. Mitsubishi Motors has committed to investing $666 million in Indonesia between 2022 and 2025 during its construction project to expand manufacturing operations to produce hybrid and electric vehicles. Elsewhere, Siemens is investing €200 million in a new high-tech factory in Singapore to meet growing demand in Southeast Asia, using leading digital twin and smart device technologies. (International Monetary Fund, 2018)

3.5. Influence and Control in the Network: The Role of Free Zones

During a period of global economic uncertainty (the pandemic crisis) coupled with geopolitical risks, many companies are focusing on tightening their belts to reduce costs, increase efficiency, and build supply chain resilience. Based on the IMF's World Economic Outlook projection in July 2023, global growth is expected to contract by 0.5% in 2023 compared to 2022, with the potential to continue to increase by 3% in 2024. (Ziltener, 2022)

The emergence and development of the Asian region, including China and India, is the most prominent event, with growth reaching 5.3% and 5.0% in 2023 and 2024, respectively. Economic growth in China and India is expected to boost growth in the Asia-Pacific region. In this context, companies are planning to invest in manufacturing capabilities in this region over the next three years. (Zreik, 2024)

Prior to August 2023, free zones in Singapore and several other countries played a pivotal role in facilitating cross-border production and trade. These zones provided favorable tax and regulatory incentives for multinational corporations to organize their global supply and distribution networks. The free zones also strengthened Singapore's position as a key node in global economic networks. This contributed to strengthening Singapore's position as a regional hub for precision manufacturing and logistics. In turn, this may have reduced the direct influence of multinational corporations at some stages of the value chain.

4. Dataset and Methodology

4.1. Dataset

This study utilizes data from reputable sources, including the Economic Development Board of Singapore (EDB), the Ministry of Trade and Industry (MTI), the ASEAN Secretariat, the International Monetary Fund (IMF), the World Bank, and the United Nations Conference on Trade and Development (UNCTAD).

Key Economic Indicators

- **Singapore's Trade Volume:**
  - Singapore's total external trade volume reached USD 1.2 trillion in 2023, marking a 7.5% increase from 2022. (Singapore Ministry of Trade and Industry, 2023)
  - Exports account for 55% of total trade volume, while imports constitute 45%.
  - Non-oil exports grew by 4.8% year-on-year, driven by strong demand for semiconductors and advanced technology products (Economic Development Board Singapore, 2022).

- **Foreign Direct Investment (FDI) and Free Trade Zones (FTZs)**
  - Singapore received USD 110.3 billion in foreign direct investment (FDI) in 2023, making it the largest FDI recipient in the ASEAN region (ASEAN Secretariat, 2023).
  - FTZs accounted for approximately 31.2% of total FDI inflows, particularly in the FinTech and advanced logistics sectors (Ministry of Trade and Industry Singapore, 2023).
  - 60% of multinational corporations (MNCs) operating in Singapore have established operations in FTZs, indicating their strategic significance (Economic Development Board Singapore, 2022).

- **Export Performance of FTZs**
  - 40% of Singapore's total exports comprise electronic products, particularly semiconductors and precision components (ASEAN Secretariat, 2023).
  - Logistics and supply chain technology services account for 22% of total exports, with an annual growth rate of 6.3% (Economic Development Board Singapore, 2022).
  - Exports to ASEAN countries constituted 28% of total exports, while China and the United States accounted for 25% and 15%, respectively, in (Ministry of Trade and Industry Singapore, 2023).

- **Gross Domestic Product (GDP) and Foreign Trade**
  - Singapore's GDP grew by 3.6% in 2023, reaching a total value of USD 490 billion (World Bank, 2023).
  - The total value-added contribution of Singapore's manufacturing industries amounted to USD 86 billion, representing 17.5% of GDP (Economic Development Board Singapore, 2022).
  - Foreign trade contributed approximately USD 320 billion to annual GDP, underscoring the critical role of trade integration in Singapore's economic strategy (International Monetary Fund (IMF), 2023).

4.2. Model and Methodology

The study employs a descriptive-analytical approach, integrating both quantitative and qualitative methods to evaluate the role of free trade zones in Singapore's integration into global value chains.

The game of musical chairs serves as a model reflecting the dynamics of competition in resource-limited environments, where individuals compete for a limited number of available

seats when the music stops, leading to the elimination of some participants in each round (Smith, 2015). In an economic context, this game is used as a metaphor to understand the competition among nations and companies for strategic positions in global markets, particularly amid rapid shifts in value chains and technological advancements (Johnson & Brown, 2018). Despite its exclusionary nature, it does not merely illustrate the elimination of some players; rather, it highlights processes of strategic repositioning, where nations and companies seek to enhance their competitive capabilities and capitalize on structural changes to ensure survival or even rise to higher levels (Williams, 2020).

The game of musical chairs serves as a model reflecting competition for limited resources and positions, which applies to Singapore's economic environment, particularly in the context of global value chains. As a small country with limited natural resources, Singapore relies on integration into global trade networks to maintain its competitive position in the global economy (Athukorala & Ekanayake, 2024).

In this game, if a player fails to find a chair, they are eliminated, resembling the intense competition in international markets, where nations strive to secure their place within supply and production chains. Through free trade zones and investment-attraction policies, Singapore continuously repositions itself within these networks rather than exiting them (Baldwin & Venables, Spillovers and growth in global production networks, 2013).

Therefore, its strategy is not merely about securing a "chair" in the game but about redesigning the game itself by fostering innovation and developing high-value-added sectors such as technology and pharmaceuticals.

Thus, the "musical chairs" model can be used to understand how Singapore remains competitive in the global economy through rapid adaptation, strategic investments, and flexible trade policies, rather than simply accepting traditional competition rules.

The ‘Musical Chairs’ Framework

Simulating the musical chairs game, the importance of Singapore’s free trade zones in enhancing the integration of its economy into global value chains can be highlighted by confirming the country’s pivotal role in global supply chains through its extensive reliance on foreign components in exports and production, with successful progress in the value chain, and the ability to export advanced and economically complex goods, as discussed by (Pao-Li & Lee, 2011; Choi & Nakgyoon, 2019). This has led to a steady penetration into various global production networks, as the country’s trade volume has jumped to about 350% of its GDP, which confirms the degree of its openness to international trade, according to (Elif et al., 2016). In their analysis of value chains, they found that Singapore is actively involved in GVC-related trade, despite the challenges it faces with other East Asian countries such as Taiwan, Korea, etc., according to (Elif et al., 2016). In this context, the impact of deep regional integration on GVCs varies across regions, with Asia importing more intermediate goods than Europe and America. This underscores the dynamic nature of GVCs and Singapore’s evolving role within them. According to (Athukorala & Ekanayake, 2024), this can be explained in more detail by addressing the following core elements:

This framework conceptualizes economic competition within GVCs as a dynamic and evolving process, where economies must continuously adapt their trade policies, industrial strategies, and regulatory frameworks to sustain a competitive position. Singapore’s FTZs act as key strategic tools that enable the country to adjust to shifting comparative advantages and strengthen its role in regional and global production networks (Baldwin & Venables, Spillovers and growth in global production networks, 2013).

- **Integration Role**

Singapore's participation in regional and global trade networks is significantly reinforced by its well-established FTZs, which serve as critical hubs for facilitating cross-border trade and investment. According to data from the (Economic Development Board Singapore (EDB), 2022), approximately 75% of companies operating within Singapore's FTZs export their products to regional markets, strengthening economic ties within ASEAN and contributing to the region's supply chain integration. The strategic location of these FTZs has enabled businesses to efficiently process, store, and re-export goods with minimal tariffs, making Singapore a key gateway for international trade. Additionally, FTZs have played a pivotal role in trade diversification, with exports to the European Union rising by 12% and exports to the Middle East growing by 8% between 2021 and 2023 (ASEAN Secretariat, 2023). The ability to diversify trade partners has enhanced Singapore's resilience against external economic shocks and shifting global demand patterns. Furthermore, the expansion of Chinese investments in Singapore's FTZs by 18% between 2020 and 2023 highlights the increasing role of Chinese enterprises in the region, particularly within the framework of the Belt and Road Initiative (BRI) (Ministry of Trade and Industry Singapore, 2023). This surge in investment underscores Singapore's strategic importance as a regional logistics and distribution center, facilitating China's trade connectivity with Southeast Asia and beyond. Collectively, these factors demonstrate how Singapore's FTZ policies actively reinforce its integration into global value chains, positioning the country as a crucial player in international commerce.

- **Competitive Role**

Singapore's FTZs play a crucial role in sustaining the country's competitiveness by fostering high-value industries, innovation, and employment growth. A significant contributor to this competitiveness is the advanced logistics and biotechnology sectors, which accounted for 45% of industrial GDP in 2023 (Economic Development Board Singapore (EDB), 2022). These industries benefit from Singapore's strategic location, cutting-edge infrastructure, and investor-friendly policies, making FTZs attractive destinations for multinational corporations (MNCs). Furthermore, Research and Development (R&D) investments within FTZs have grown at a compound annual growth rate (CAGR) of 12.4% between 2020 and 2023, highlighting Singapore's commitment to fostering innovation and productivity (ASEAN Secretariat, 2023). These investments have accelerated the development of high-tech manufacturing, artificial intelligence applications, and supply chain digitalization, positioning Singapore as a leader in knowledge-based industries. The country's FTZs also play a vital role in job creation, with employment in MNCs operating within these zones increasing by 9.5% between 2021 and 2023 (Ministry of Trade and Industry Singapore, 2023). This surge reflects Singapore's ability to attract global talent and sustain a dynamic labor market, ensuring continuous economic growth. Additionally, favorable tax policies, streamlined customs procedures, and regulatory incentives within FTZs have further strengthened their role in boosting Singapore's global competitiveness. As a result, Singapore remains a premier hub for trade, innovation, and high-value economic activities, securing its position in global value chains.

- **Competitive Role:**

Singapore's FTZs have been instrumental in sustaining the country's global competitiveness by fostering industrial growth, technological innovation, and employment expansion. One of the key contributors to this competitiveness is the advanced logistics and biotechnology sectors, which accounted for 45% of industrial GDP in 2023 (Economic Development Board Singapore (EDB), 2022).These industries benefit from Singapore's world-class infrastructure, investor-friendly regulations, and strategic location, making FTZs attractive hubs for high-value economic activities. Additionally, Research and Development (R&D) investments within FTZs have grown at a compound annual growth rate (CAGR) of 12.4% between 2020 and 2023, underscoring the government's commitment to fostering

innovation and technological advancement . (ASEAN Secretariat, 2023) This surge in R&D spending has led to breakthroughs in artificial intelligence, biotechnology, and digital supply chains, further strengthening Singapore's position in global markets. Moreover, the FTZs have played a pivotal role in job creation, with employment in multinational corporations operating within these zones increasing by 9.5% between 2021 and 2023 (Ministry of Trade and Industry Singapore, 2023).This employment growth reflects Singapore's ability to attract global talent and sustain a highly skilled workforce. Furthermore, tax incentives, trade facilitation policies, and regulatory efficiencies within FTZs have reinforced their role in maintaining Singapore's competitive edge. By continuously adapting policies to align with global economic trends, Singapore ensures that its FTZs remain key enablers of industrial dynamism and sustained economic success.

5. Discussion

5.1. Results and Discussion

The findings reflect the pivotal role that free trade zones play in enhancing Singapore's integration into global value chains. This role can be analysed from two main perspectives: a participatory perspective, which reflects how these zones contribute to enhancing cooperation and connectivity with the global economy, and a competitive perspective, which explores their role in enhancing Singapore's competitiveness within these chains.

5.2. Analyzing the role of Singaporean FTZs To Further Integrate İnto GVC From A Participatory Perspective

In a musical chairs style, Singapore's integration into global value chains can be represented by taking key initiatives such as encouraging foreign investment, enhancing infrastructure, creating technological innovation, etc. In light of this, it becomes clear how important free trade zones are in enhancing countries' integration into international value chains and improving economic growth.

In this regard, Singapore's free trade zones are essential to raise its competitiveness and deepen its integration into international value chains. The country's free trade zones also serve as places to bring advanced infrastructure and contemporary technology, which enhances economic growth and sustainable development. This has made Singapore better able to attract foreign direct investment, develop its infrastructure, and foster innovation and technology thanks to its free trade zones. The country's ability to create an ideal business environment for multinational companies is a result of these factors, which also help strengthen Singapore's position within global value chains.

As one of the pioneers in implementing free trade policies to improve its integration into international value chains, Singapore is widely recognized. With the help of free trade zones such as Changi and the Singapore Maritime Zone, Singapore is strengthening its important economic sectors such as logistics and transportation, thus becoming a more successful attraction for foreign investment.

In the same vein, Huang conducted a study that showed how the country's free trade zones support innovation and technology transfer, thereby enhancing the ability of local companies to compete globally. This is a crucial factor in improving Singapore's added value in the international market and its integration into global value chains. (Huang & Yeung, 2018).

Jones's interesting findings confirm the positive role that free zones have played in enhancing Singapore's integration into global value chains, particularly in critical industries such as technology and logistics (Jones G. , 2013).

It is clear from these studies and research that free trade zones are necessary to enhance Singapore's integration into international value chains. We can see how this integration can

be achieved by enhancing infrastructure, encouraging innovation and technology transfer, attracting foreign investment, and enhancing the business environment.

5.3. Analysis of the Role of Singaporean FTZs to Further Integrate into GVC from A Competitive Perspective

The role of Singapore FTZs to further integrate into the GVC will be analyzed from a competitive perspective, based on the musical chairs game style by addressing the following:

5.3.1. Assessing the Extent to which Singapore's Economy Relies on Free Zones to Build Competitive Capabilities and Expand its Participation in Global Value Chains: Singapore's pivot to FTZs is envisioned to further enhance its integration into global value chains, as it attempts to gain a significant share of the global labour market. The Singaporean economy can be seen as one of the wheelchairs in the game, relying more on FTZs as one of the main drivers of its growth and development. As one of the world's largest trading hubs, its competitive role in enhancing its integration into global value chains is essential.

Thus, according to (Cuzzort et al., 2008), the musical chairs game is an innovative example of boosting the economic activity of countries with limited space in global value chains, in line with Singapore's focus on trade liberalization and economic partnerships, according to (Laurence et al., 2015). Thus, Singapore has explicitly pursued free trade agreements, such as the ASEAN Free Trade Area (AFTA) and the Japan-Singapore Economic Partnership Agreement (JSEPA), to boost its exports and imports, and demonstrate its commitment to open markets and comparative advantage, as argued by (Siti et al., 2022; Ramkishen et al., 2002). In this vein, Singapore's investment in physical and technological infrastructure has contributed significantly to its success as a major trading hub, underscoring the importance of continuous development and adaptation in global trade dynamics (David & Biederman, 2000). By engaging in trade agreements and investing in infrastructure, Singapore demonstrates a strategic approach to economic growth and international trade relations, reflecting its position as a major player in the global market (Cuzzort et al., 2008).

This approach will enable us to understand the dynamics of relationships and interactions between the various actors in the value chains linked to Singapore's free zones, revealing the extent to which the Singaporean economy relies on these zones to compete further up global value chains. (Lim W. J., 2019; Tan M. H., 2017)

5.3.2. Changes in the Balance of Power between Players: Singapore was considered one of the most important regional centers in global value chains. It has benefited from investments and industries producing goods for international markets due to its prime location and modern infrastructure.

Singapore has also developed significant competencies in areas such as technology, logistics and precision manufacturing. Their contribution to the production and distribution networks of multinational corporations in developed countries has been significant. A number of important points that embody the competitiveness of the Singaporean economy in securing an important position in value chains can be discussed as follows:

A. **Singapore's Role as a Key Regional Hub**: This role has enabled Singapore to build a highly sophisticated infrastructure, and its strategic location has made it a key regional hub in global value chains.

B. **Specialization in Logistics and Precision Manufacturing**: Singapore has been able to attract significant foreign investment due to its strong capabilities in these logistics and precision manufacturing areas.

C. **Relations with Multinational Corporations**: Singapore is an important element in the production and distribution systems of developed countries and major global companies, which has enabled it to occupy a distinguished position in terms of the competitiveness of its economy with other economies in seizing advanced places in value chains.

6. Conclusion

This study has examined the role of Free Trade Zones (FTZs) in enhancing Singapore's integration into global value chains (GVCs) through a multifaceted analysis that incorporates economic indicators, the "musical chairs" model, and empirical data. The findings confirm that FTZs are a cornerstone of Singapore's economic strategy, facilitating participation in international trade networks while reinforcing the country's global competitiveness.

From a participatory perspective, Singapore's FTZs streamline trade flows, attract substantial foreign direct investment (FDI), and provide a robust infrastructure for multinational corporations (MNCs). The country's ability to leverage FTZs as strategic trade gateways has cemented its status as a regional and global trade hub. This advantage is further strengthened by Singapore's commitment to trade liberalization, regulatory efficiency, and investments in cutting-edge industries such as advanced manufacturing, logistics, and biotechnology.

From a competitive standpoint, Singapore's FTZs serve as dynamic catalysts for sustaining its strategic advantage in the global economy. The country's adaptability to evolving market conditions, combined with its focus on fostering innovation and technology transfer, has positioned it favorably within GVCs. Notably, the increasing role of Chinese investments, trade diversification, and the expansion into high-value industries highlight the agility of Singapore's economic model. Additionally, FTZ-driven industrial growth, employment generation, and research and development (R&D) initiatives have strengthened the nation's resilience against economic shocks and fluctuations in global demand.

The study also underscores how the musical chairs framework serves as a compelling metaphor for Singapore's approach to economic competition. Rather than merely securing a place within the existing global trade order, Singapore actively reshapes the competitive landscape by investing in strategic industries, fostering innovation, and capitalizing on structural shifts in GVCs. This proactive strategy ensures that Singapore remains a key player in global trade, rather than being displaced by emerging competitors.

In conclusion, Singapore's FTZs are not only instrumental in deepening its integration into GVCs but also serve as a model for other nations seeking to enhance their global trade competitiveness. Future research could explore the long-term sustainability of Singapore's FTZ-based economic model in light of evolving global trade policies, technological disruptions, and geopolitical shifts. Additionally, comparative studies with other leading trade hubs could provide further insights into best practices and potential policy enhancements. Ultimately, Singapore's continued success in global trade will depend on its ability to adapt, innovate, and strategically position itself within an increasingly complex and competitive international economic landscape.

7.References

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