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# Transitioning Towards Greener Markets: The Impact of Sustainable Financial Instruments in ASEAN (2018-2023)

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## Abstract

This study explores the impact of integrating sustainable financial instruments into the debt portfolios of emerging ASEAN economies from 2018 to 2023 and how it shapes capital market expansion, growth, and unemployment amongst the regional bloc's members. Traditional bonds remain the dominant instrument in the capital markets, overshadowing the contemporary sustainably linked bonds. The results show that market players in the developing markets do not regard the sustainability label as an important metric for investment given that it moves similarly as a traditional bond. Traders in ASEAN put more importance on income generation and return over impact investing. However, foreign investors– mostly from Europe, are believed to show greater interest in sustainable bonds. Economic barometers indicated a positive relationship between market capitalization, GDP expansion, and lower unemployment in most ASEA countries. Adoption of sustainable bonds provides a viable funding option for many governments and corporations across the ASEAN network, but their impact on the capital markets and the economy needs to be explored further.

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# Abbreviations

Abbreviation	Definition			
ASEAN	Association of Southeast Asian Nations			
Laos PDR	Laos People's Democratic Republic			
CRI	Climate Risk Index			
UNFCCC	United Nations Climate Change Conference			
IMF	International Monetary Fund			
IFC-World				
Bank	International Finance Corporation- World Bank			
ROP	Republic of the Philippines			
ESG	Environmental Social and Governance			
SLL	Sustainability Linked Loans			
FI	Financial Institution			
SFI	Sustainable Finance and Investment			
UNEP	United Nations Environmental Program			
LTVC	Long-term Value Creation			
EU	European Union			
ATB	ASEAN Taxonomy Board			
GDP	Gross Domestic Product			
FF	Foundation Framework			
PS	Plus Standard			
WWF	World Wide Fund for Nature			
MPT	Modern Portfolio Theory			
UNCTAD	United Nations Conference on Trade and Development			
AUM	Asset Under Management			
ETF	Exchange Traded Fund			
YoY	Year-on-year			
ICMA	International Capital Markets Association			
ADB	Asian Development Bank			
EC	European Commission			
SF	Sustainable Finance			

# Introduction

The Association of Southeast Asian Nations (ASEAN), one of the regional economic blocs in the globe is currently the fifth largest economy in the world, comprising of ten 'culturally diverse' member states including Brunei, Cambodia, Indonesia, Laos People's Democratic Republic (Lao PDR), Myanmar, Malaysia, Singapore, Thailand, Vietnam, and the Philippines (Manuamorn et al., 2022). Collectively, the ASEAN with its population size that exceeds 650 million and a combined Gross Domestic Product (GDP) of USD3.11 trillion (Nguyet Minh et al., 2021) is projected to become the fourth largest economic union in 2050 (Manuamorn et al., 2022).

Despite the region's rapid economic expansion, the Global Climate Risk Index (CRI) developed by the German Watch, identified three ASEAN member countries namely– Myanmar, Philippines, and Thailand– to be among the ten most susceptible countries worldwide when it comes to the consequences of natural disasters brought about by extreme climate changes over the past two decades from 2000 to 2019 (Eckstein et al., 2019). These developing nations which have significant exposure to climate hazards also pose limited capacity to cope with the challenges brought about by extreme and unpredictable weather changes. Consequently, it becomes more difficult for these states to transition to a more progressive and more advanced level of economic development.

In 2009 to 2019 alone, 47,000 people lost their lives from adverse weather events resulting in economic loses of around USD2.56 trillion in terms of purchasing power parities (Eckstein et al., 2021). In this climate vulnerability narrative, which is prevalent in low-income economies, developing countries heavily rely on the USD100 billion climate financing pledge made by advanced economies during the United Nations Framework Convention on Climate Change (UNFCC) COP15 in Copenhagen in 2015 (Martinus & Jiahui, 2022).

The challenges brought about by the COVID-19 pandemic in 2019 to 2022 put further strain on the fiscal stability of vulnerable nations. Although developed country partners have pledged financial assistance, the Organization of Economic Cooperation and Development (OECD) noted that climate financing, while on the rise, remains insufficient to meet the annual target of USD 100 billion from 2013 to 2020 (OECD, 2022). It is therefore crucial that developing countries explore alternative sources of financing instead of heavily relying on multi-lateral and bi-lateral aid.

In line with this, the ever changing economic, political, and social landscapes have influenced the continuously evolving global financial markets. Social and sustainably linked financing, such as the Environmental Social and Governance Debt (ESG) and Sustainability Linked Loans (SLL) have been the buzz words in the past five years since its inception. The amount of these products brought in the market dramatically expanded in 2021 according to the International Monetary Fund (IMF) (Gautam et al., 2022) and the International Financial Corporation- World Bank (IFC-World Bank) (de la Orden & de Calonje, 2022), due in part of the pandemic.

Beginning 2017, over USD890 Billion of sustainably linked financial instruments has been issued in the global markets (de la Orden & de Calonje, 2022). Such financial products have been very popular in the developed countries and have remained concentrated in these markets since they were launched. Despite borrowers, investors, and regulators' interests in such instruments, the emerging markets' share only accounted for five percent of the global figures or about USD190 Billion (de la Orden & de Calonje, 2022).

Given such, there is a huge opportunity for the financial sector to play a crucial role in supporting their countries towards more resiliency and sustainability by stimulating capital market activities and broadening the investor ecosystem. The World Bank-International Bank for Reconstruction and Development- International Development Association (WB-IBRD/IDA) reported that sustainable markets remain a small fraction of the traditional markets; thus, suggesting a substantial untapped potential that can be harnessed for sustainable financing if market institutions would only make it more mainstream and part of their core-decision making processes (*Unleashing Sustainable Finance in Southeast Asia*, 2022).

With the rising trend of ESG and SLL issuances and investing, along with the induced effect of the pandemic on the surge in demand for sustainable products, it is apt and timely to examine the effects of sustainable financing on emerging markets and developing countries within the ASEAN. State members of the economic bloc are particularly vulnerable to the impacts of climate change and face higher risk of disasters. Henceforth, sustainability issues can

significantly disrupt business operations in developing economies, drastically impacting their production–GDP – as well as their growth expansion.

While the IMF noted the presence of "sufficient capital and liquidity" in the global financial system (Adrian, 2022), closing the investment gap remains one of the major stumbling blocks that regulators face. Such hurdle is more pronounced in emerging economies due to capital barriers for foreign investors, valuation issues brought about by the quality and consistency of climate data, transaction costs, a limited local investor base, project and country risks, as well as the congruence of public sector finance with national policies.

The researcher therefore aims to assess the opportunities for developing economies in terms of accessing alternative sources of funding apart from the traditional borrowing, specifically the more stable sustainably-linked debt products as well as its impact on the capital markets and the risks associated with such instruments. Given that many emerging economies are exposed to climate related hazards, it is highly relevant to look at instruments that can mitigate climate risks and consequently strengthen the financial sector of the country– enhancing the performance of its capital markets and ultimately achieving a stable economy.

Examining the capital markets of a country can provide a good snapshot of its economic growth as a robust financial market is a good indicator of development (Ipeghan & Marshall, 2019). In separate studies, Goldsmith; King and Levine; and Levine and Zervos were able to prove that there is a 'positive correlation between financial development and economic activity' (Levine, 2005). The empirical studies conducted by the aforementioned have shown that there is a positive link between the development of the financial system and the long-run economic growth and that the relationship of the two is economically large (Levine, 2005).

By looking at country comparison within ASEAN, in terms of the regular bond issuances versus sustainable linked debts throughout 2010 to June 2023, market size in terms of supply and demand opportunities can be evaluated. Liquidity of these non-traditional products, which usually reflects capital flows, and the health of a country's capital markets can be assessed through market data on sustainable financial instruments in relation to their turnover ratio, bid to cover ratio, bid-ask spread, yield-spread, volume of transactions, size of issuances, and market capitalization. Additionally, maturity towers of government issued SLLs can also be used to

measure the depth of a nation's financial markets as it can aid in providing a yield curve that guides the credit market for both sovereign and private issued instruments.

A combination of the aforementioned measures can provide a snapshot of the degree and strength of capital market development in the ASEAN. It can be valuable to look at this facet of the economy as a well-developed capital markets can provide a wide range of economic benefits such us "higher productivity growth, higher real-wage growth, greater employment opportunities, greater macroeconomic stability, and greater homeownership (Dudley & Hubbard, 2004)".

It is important to note that movements in the capital markets reflect not just the supply and demand of securities. Changes in instrument prices are immediate feedback mechanisms that can signal alterations in behavior of the allocation of risk and capital of investors and borrowers, therefore reflecting market sentiment regarding policies. The quality of existing policies can be observed in the fluctuation of risk premia– wherein relatively good policies are accompanied by higher asset prices, while relatively bad policies are accompanied by lower asset prices. An important facet of the capital markets that can influence economic policies which can lead to expansion and growth.

The impact of regulators and the related policies present, thus, plays a huge impact on the realm of sustainable financing and highly influences market behavior and instrument fluctuations. Conducting a comprehensive assessment of these emerging alternative financial products can enable the researcher to formulate policy recommendations that can be utilized by governments of emerging markets which can guide the redirection of capital flows from developed economies, fostering a more resilient capital market.

The result of this study will be particularly useful for the Republic of the Philippines (ROP) which is late in the adoption of sustainably linked debt and a new entrant in the market– issuing its first ever Sustainability Dollar Global Bonds in March 2022 wherein it raised USD2.23 billion (Rosales, 2022) for its debut borrowing with tenors of five, 10.5, and 25 years (*Republic of the Philippines Prices 5-Year, 10.5-Year, and Debut 25-Year Sustainability Dollar Global Bonds*, 2022). It will also contribute to the knowledge gap in the area of finance and development in the capital markets of developing nations within the ASEAN as most of the literature are highly focused in the developed and already huge markets of the West.

### **1.1Research Problem**

With the rise of new financial instruments such as the SLLs and ESGs, **this paper aims to understand how sustainable financing impacts emerging markets and developing countries withing the ASEAN and the role that regulators play in terms of investment diversion towards these products.** It seeks to answer whether these sustainable linked products aid in the expansion of the capital markets of the ASEAN in terms of liquidity and enhances the depth of transactions amongst market participants of each country; ultimately leading to economic expansion as projects funded by such instruments are geared towards addressing social and sustainable issues that can catalyze production output – GDP, as well as job creation.

As such, the main thesis of this paper is, **incorporating sustainable financial instruments in a country's debt portfolio have a positive impact in the capital markets of the emerging economies of the ASEAN member states and ultimately drives economic growth through higher GDP and lower unemployment.** By inspecting this aspect of the economy, it can provide a better picture a macroeconomic perspective on the importance of a more conscious drive towards financial development through a more socially beneficial mode of debt and investment diversification. Moreover, this paper can help open the possibility of expanding further studies about the ASEAN capital markets and other emerging market economies as there is a dearth of literature that investigates these cases. It can provide a foundation for future research and policy making efforts in the ASEAN region.

## **Chapter 1: Concepts**

#### **1.1 Sustainable Finance and Investment**

The Industrial Revolution spurred business activity and economic growth which then led to prosperity and eventually to higher consumption as well as excesses. Economic and finance models were created at a time when resources were abundant (Schoenmaker, 2017). Thus, most of the models being widely used today in both economic and financial theories fail to factor in social and environmental externalities as well as burdens that confront the world today (Schoenmaker & Schramade, 2018).

As the dialogue about the rising world temperature becomes more pronounced, the role of financial institutions in terms of allocating resources for optimal productive use has also been amplified. Financial institutions (FI) do not only connect savers and borrowers, the financial markets also facilitate the flow of capital which can be used to signal investment productivity in a capitalistic structure that can highly influence issuer and investor decision making strategies (Bose et. al, 2019).

As the dialogue regarding the rising world temperature intensifies, the role of financial institutions (FI) in terms of allocating resources for optimal productive use has also been amplified given the potential that the capital can take. Beyond linking savers and borrowers, FIs can play a crucial role in facilitating the movement of capital. Capital flow serves as a vital indicator of investment productivity within a capitalistic structure that can significantly influence the decision-making strategies for issuers and investors alike (Bose et al., 2019).

This intermediary role gives the financial sector an enormous ability to mold and shape the global markets as well as a considerable power to exert influence over sustainable development. In light of this, the United Nations Environment Program (UNEP) established the UNEP Financial Initiative on the Environment and Sustainable Development, aiming to leverage the potential of the banks and asset managers in "integrating environmental considerations into all aspects of the financial sectors' operations and services [with a] secondary objective of [fostering] private sector investment in environmentally sound technologies and services" (Bouma et al., 2017). Through the years, sustainable finance and investment (SFI) has garnered increasing attention due to the growing number of socially and environmentally conscious policy makers and market players. From a financing that was initially centered on environmentally focused lending and borrowing, sustainability has now evolved into instruments that support green projects; even expanding to embrace and encapsulate initiatives that bring about positive social outcomes (Nguyet Minh et al., 2021).

Al Although SFI lacks a universally standardized definition (*Green and Sustainable Finance*, 2021), "it is used as [a comprehensive] umbrella term representing all concepts related to the implementation of financial and investment activities [that prioritize] sustainability-oriented strategies (Cunha et al., 2021). It is therefore a broad term encompassing the interaction between investment and lending which covers activities related to environmental, social, governance, and economic aspects oriented to a long-term value creation (LTVC) (Schoenmaker & Schramade, 2018).

In contrast to traditional finance, which is anchored on the theory of the firm– wherein the central driver of a firm's behavior is the pursuit of profit maximization while minimizing the cost (Anderson & Ross, 2005)– SFI aligns more closely with Cyert and Hendrick's critique of the aforementioned neo-classical model which extends the old paradigm by integrating more realistic scenarios and treats businesses as a more complex entities (Cyert & Hedrick, 1972). SFI approach therefore, prompted a shift from shareholder maximization wherein optimal return was the goal, to a framework that prioritizes stakeholder value. Under this approach, equal importance and emphasis is given to the society, environment, and profit– a dramatic change of typology that now primarily weighs on social-environmental impact (Schoenmaker, 2017).

Sustainable Finance typology	Value created	Ranking of factors	Horizon
Sustainable Finance 1.0	Shareholder value	F > S and E	Short term
Sustainable Finance 2.0	Stakeholder value	T=F+S+E	Medium term
Sustainable Finance 3.0	Common good value	S and E > F	Long term

Note: F = financial value; S = social impact; E = environmental impact; T = total value. At Sustainable Finance 1.0, the maximisation of F is subject to minor S and E constraints.

Table 1. Framework for Sustainable Finance

(Schoenmaker, 2017)

Shoenmaker pointed out that the most important aspect of finance that is relevant in facilitating strategies and decision making pertinent to sustainable finance are "(1) production of information ex-ante about possible investments, and allocate capital; (2) monitoring of investments and exerting corporate governance after providing finance; and (3) facilitating the trading, diversification and management of risk (Schoenmaker, 2017)". It is important to note that SFI "does not redefine finance" (Migliorelli, 2021). Instead, SFI rather clarifies the role of finance by articulating and re-aligning its focus towards funding "activities that contribute to the achievement of, or the improvement in, atleast one of the relevant sustainable dimensions (Migliorelli, 2021)".

### **1.2 ASEAN Emerging Economies and Sustainability**

Originally established with five member countries in 1967, the ASEAN has since expanded– at present, it has now ten member nations which adopted "the mutual respect of sovereignty and non-intervention in internal affairs as its guiding principles (Olsen et al., 2015)". Initially, the ASEAN member countries begun integration and formed the bloc with eh primary purpose of maintaining peace and security as well as preventing internal conflicts while limiting competition (Narine, 2008); mainly driven at that time by policy makers' main concern about the threat of foreign-backed insurgencies. Over time, the ASEAN has evolved and transformed into an economic institution that strongly focuses on economic cooperation and development.

Many political scholars like Jones and Smith (2002) remain critical about the creation and existence of the ASEAN, even labeling the bloc as an "imitation community (D. M. Jones & Smith, 2002)" due to the half-baked and incomplete nation building that the participating countries went through post colonization. The ASEAN, although functioning as a collective economic bloc, is incomparable to the European Union (EU) in terms of the depth of integration and cooperation.

Unlike the EU whose member states are all developed economies past the manufacturing and industrial phase, and with relatively high government efficiency as well as shared regional identity (Olsen et al., 2015)— the ASEAN community exhibits a much higher degree of diversity on terms of the levels of economic development. Additionally, the ASEAN faces challenges related to governance capacity, as well as conflicting national identities that are at odds or may not entirely align with its regional identity (Narine, 2008).

Despite being criticized for its weak institutional structures brought about by its pluralistic nature (Emmerson, 2005), ASEAN member states continue to commit to collectively work and collaborate to achieve a common goal beyond its initial political objectives (Frankel & Wei, 1996). To align with the global initiative which is led by the UNFCC 26<sup>th</sup> session (COP26) under the Paris Agreement– the ASEAN, through the efforts of the ASEAN Taxonomy Board (ATB), recently released the first version of the "ASEAN Taxonomy for Sustainable Finance" (*ASEAN Sectoral Bodies Release ASEAN Taxonomy for Sustainable Finance – Version 1*, 2021). A proof that ASEAN, although an "imitation community" as Jones and Smith (2002) tagged it to be, is determined to aspire and pursue a transition towards a more sustainable and carbon neutral region (Manuamorn et al., 2022).

With an aggregate population of 650 million people, ASEAN member states have varying stages of economic development, ranging from mostly low- to middle income, with the exception of Singapore and Brunei Darussalam (Board ASEAN Taxonomy, 2021). The threat of floods, heat waves, and rainfall induced landslides were identified as the most serious climate change issues that these emerging economies usually deal with (Seah et al., 2022).



Figure 1. GDP per capita (in USD) by ASEAN Member States, 2000-2019

(Board ASEAN Taxonomy, 2021)

Faced with the hurdles of economic development accompanied by the challenges brought about by climate issues, a united front and a united approach towards sustainable financing that involves not just ministries and central banks, but also includes private entities, is crucial for the region. The introduction of the "ASEAN Taxonomy for Sustainable Finance" which will be used to assess and evaluate the financing utilization is a significant step towards realizing the zerocarbon emission goal.

The ASEAN Taxonomy is built on two fundamental features: the four major environmental components and the two essential criteria of impact assessment. The four primary environmental objectives are mainly focused on (1) climate mitigation, (2) climate change adaptation, (3) protection of healthy diversity, and (4) promotion of resource resilience transaction to circular economy. Meanwhile, the two vital criteria of impact assessment ensure that funding utilization (1) avoids causing significant harm and (2) facilitates remedial transition (Board ASEAN Taxonomy, 2021).



Figure 2. Multi-tier Taxonomy Design

(Board ASEAN Taxonomy, 2021)

By harmonizing the ASEAN Capital Markets' framework grounded on the ASEAN Green Bond Standards (*ASEAN Green Bond Standards*, 2018); ASEAN Social Bond Standards (*ASEAN Social Bond Standards*, 2018); and the ASEAN Sustainability Bond Standards (*ASEAN Sustainability Bond Standards*, 2018); the ASEAN Taxonomy Board was able to craft a

taxonomy that has a multi-tiered approach which includes a 'Plus Standard' in comparison to the binary approach of the EU Taxonomy (*EU Taxonomy for Sustainable Activities*, n.d.). This step was done as the Board recognizes the varying circumstances and varying levels of development of the ASEAN regional members. Such consideration, therefore, avoids a 'one-size fits all' method– ensuring a more suitable and a more appropriate solution for a guiding regulatory framework (Board ASEAN Taxonomy, 2021).

Apart from this, the ASEAN Taxonomy is unique since it classifies the Foundation Framework (FF), which is a qualitative sector-based decision, into three different levels namely the 'Green FF', 'Amber FF', and 'Red FF'. Furthermore, the 'Plus Standard' focuses on the activity-level threshold and determines whether such economic enterprise falls into either 'Green PS', 'Amber PS', and 'Red PS'. The color tagging is the outcome of the decision tree framework provided by the Taxonomy. However, the threshold for the PS is still under development and will be released in the next phase as the Taxonomy is a living document that is still evolving and expanding.



Figure 3. Sector Diagnostic Tree

(Board ASEAN Taxonomy, 2021)

## **Chapter 2: Literature Review**

Based on the proprietary research done by the consulting company McKinsey, the emerging economies in Asia have the potential to liberate an estimated USD 800 billion annual funding in the markets for middle to large corporations. Such substantial amount of capital can be used as a catalyst for growth (Jain et al., 2017). Unfortunately for most emerging economies, especially in the ASEAN region, the shallow capital markets and limited range of financial instruments available for players make it difficult to tap such mammoth financing.

Existing literature often suggests that with regards to the deepening and enhancement of the capital markets of emerging nations, implementing several changes in the market structure, and altering some aspects of the existing policy design by involving both public and private institutions are necessary. Currently, there is a growing trend of sustainable finance in the global playing field which can be tapped to promote capital inflows in the region while also tackling the pressing issue of climate change.

The World Wide Fund for Nature (WWF) and UNEP, estimate that the ASEAN region alone needs around USD 3 trillion in sustainability-related investments between the years 2016 to 2030 (*Why Are We Working on Sustainable Finance in Southeast Asia?*, n.d.). This data highlights a substantial window of opportunity for an alternative source of financing in the region to achieve the 2030 climate goals. Research also suggests that incorporating sustainable assets, like green energy, in order to diversify portfolio holdings has a potential to boost a fund's returns (Miralles-Quirós et al., 2019; Miralles-Quirós & Miralles-Quirós, 2018).

Moreover, evidence from studies on regional and global diversification indicates that players in both developed and developing nations have benefited from such kind of strategy (Driessen & Laeven, 2007). The concept of diversification is grounded on the principles of Harry Markowitz's 'Modern Portfolio Theory' (MPT) (Elton & Gruber, 1997); the theory posits that rational investors will consider alternative instruments and place their bets on such when the risks are compensated by returns. Thus, adding an SF asset in one's portfolio mix along with other traditional instruments, especially from an emerging market economy can provide as an attractive option for rational players as it can potentially offer a better and improved risk-return profile that can translate to higher possible earnings. However, since investment is a betting game, the theory also suggests that incorporating green screening in portfolio creation can make it more expensive with the accompanying diversification cost in terms of the search and monitoring, along with low diversification potential and lower return and vice-versa; which can translate to lower risk adjusted performance relative to the conventional assets (Naqvi et al., 2021).

Relevant study and extensive research regarding the impact of SFIs in emerging markets and developing countries within the ASEAN remain scant. Although these alternative sources of funding are becoming more popular to developing and transitioning economies while massively contributing to the global economy's production, trade, and population (Naqvi et. al, 2021), the dearth of literature remains focused on SFI in developed economies.

Additionally, the available figures and numbers predominantly emphasize on the green and the social bonds. Topics on sustainability remain limited to the environmental or social, rather than the integration of both. This narrow focus is a result of the ideas and concepts of sustainable finance (SF) being boxed and confined in one aspect of fund utilization. Sustainable products that encompass both green and social objectives are fairly new. Hence, there remains a gap in the literature concerning SF in emerging economies– an area that presents ample opportunities for further exploration.

In 2021, Morningstar (*Sustainable Finance by the Numbers*, 2021) reported that sustainability-themed financial instruments in the global markets experienced a substantial growth over the past five years, reaching an approximate amount of USD3.2 trillion. This figure encompasses products tagged as: sustainable funds valued over USD1.7 trillion, green bonds surpassing USD1 trillion, social bonds amounting to over USD 212 billion, and mixed-sustainability bonds reaching USD218 billion. The majority of these investment instruments are based in developed countries and are targeted towards the developed markets (United Nations Conference on Trade and Development, 2021).



Figure 4. Five Largest Countries in the Green Bond Market 2020

(Sustainable Finance by the Numbers, 2021)



Figure 5. Five Largest Countries in the Social Bonds Market 2020

(Sustainable Finance by the Numbers, 2021)

Based on the World Investment Report of 2021, sustainability-themed financing saw an increase of 30% from 2019 to 2020 wherein it hit a total portfolio count of 3,987 as of 2020 of June. Asset under management (AUM) meanwhile, reached USD1.7 trillion and are highly concentrated in Europe and the United States (United Nations Conference on Trade and Development, 2021). The same report also revealed that the sustainability space accounts for

3,435 on mutual funds and 552 on exchange traded funds (ETF) with AUMs of USD1.56 trillion and USD174 billion respectively (United Nations Conference on Trade and Development, 2021).

Moreover, the bulk of the assets, which is approximately 62%, is allocated in equity; while the remaining 38% is evenly split between fixed income and mixed-funds. Interestingly, however, developing and transitioning countries are significantly underrepresented in the sustainable fund map as they only account for less than 10% of the portfolios amidst these emerging economies' stock market contribution of 23% in terms of global capitalization while hosting only five percent of the sustainably linked funds domiciled locally (United Nations Conference on Trade and Development, 2021).



Figure 6. Number of Sustainable Funds Under Management, 2010-2020 in Billions USD

(United Nations Conference on Trade and Development, 2021)

The eminent steep climb of SF products in the market had been highly influenced by the pandemic as sovereigns, corporates, and national organizations sought alternative financing for the COVID-19 relief operations (Toole, 2022; United Nations Conference on Trade and Development, 2021). However, in terms of sustainability-linked issuances, the emerging markets only accounted for a mere five percent of the global figures (de la Orden & de Calonje, 2022).

It is estimated that the aggregate amount of outstanding sustainable bonds in the world market currently stands at USD1.5 trillion (United Nations Conference on Trade and Development, 2021). The growth rate of the SFI bond figures is undeniably impressive with a

remarkable 67% year-on-year (YoY) increase. However, it is important to note that relative to the cumulative global bond market that is valued at USD119 trillion, sustainable bonds are but a relatively small portion of 1.3% of the aforementioned enormous figure (United Nations Conference on Trade and Development, 2021).

As market players are slowly shifting to adopt a rational risk-return strategy that demonstrates greater consideration for the sustainability impacts of their borrowing and investing decisions, sustainability-linked channels present a promising segment, especially for emerging economies in the ASEAN. These economies are usually highly exposed to sustainability risks and can benefit from engaging in sustainable funding opportunities.

In ASEAN, the UNEP identified that "green investment has to grow 400% in order to protect the region from environmental risks" (*Annual ASEAN Green Investment Needs to Grow 400% to Guard against Environmental Risks*, 2017) with Indonesia requiring the biggest amount of financing. Meanwhile, in the sustainability scoring done by ROBECO, the Philippines, Cambodia, and Laos PDR got the lowest sustainability rating in the region on a scale of one through ten, with ten as the best (*Country Sustainability Ranking*, 2021).



Figure 7. Global Country Sustainability Ranking

#### (Country Sustainability Ranking, 2021)

The recent date from the IFC-World Bank captures a world macro picture of sustainability-linked products in emerging economies, encompassing sustainability-linked loans and sustainability-linked bonds amounting to USD43.7 billion (de la Orden & de Calonje, 2022). It is however difficult to identify how much of this number specifically accounts for the ASEAN.

Available figures from the Institute of Southeast Asian Studies-Yusof Ishak Institute (2022) only captures financing instruments in the ASEAN geared towards projects addressing climate issues. In 2019, the majority of the funding or equivalent to 85% was sourced through debt instruments, while the remaining 15% was from grants and equity shares (Martinus & Jiahui, 2022). Determining the exact amount of debt acquired through multi-lateral and bi-lateral loans from those sourced through regular sustainability issuances remains challenging because of the limitations of the available data in the market.



Figure 8. Financial Instruments Used in Climate Finance to ASEAN Recipients 2000-2019 (in USD)

(Martinus & Jiahui, 2022)

The definition of 'sustainable finance' remains complex, as there remains a dearth of guiding principles for climate, social, sustainability, and sustainability-linked instruments. Nonetheless, various organizations such as the International Capital Markets Association (ICMA) (*Guidelines for Green, Social, Sustainability, and Sustainability-Linked Bonds' Impact Reporting Database*, 2021), the Asian Development Bank (ADB), and the European Commission's (EC), have established standards in this area. In November 2021, the International Sustainability Standards Board (ISSB) was launched at United Nation's COP26 climate summit– a new body that was created to standardize climate disclosure approaches in the capital markets worldwide to prevent greenwashing and exaggerating green credentials; the institution recently released its debut document (*IFRS - ISSB Issues Inaugural Global Sustainability Disclosure Standards*, 2023; H. Jones, 2022). Nevertheless, 'sustainable finance' remains a commonly used umbrella term covering "financing that support sectors or activities that contribute to the achievement of, or of the improvement in, atleast one of the relevant sustainability dimensions (Migliorelli, 2021)".

The lack of a standard single definition of what encompasses 'sustainable finance' poses a challenge as various countries can lay down their own criteria when it comes to labeling instruments. This raises the issue of integrity of the products in the market as it is highly exposed to the risk of 'greenwashing' or the use of deceptive strategies to promote sustainable image of the instrument (Migliorelli, 2021). The credibility of these instruments as pointed out by ICMA lies in the country's external or internal key performance index. A classic example is China, wherein the country's issuance of a Yuan denominated carbon neutral bonds by the state-owned energy corporation China Energy Investment Corporation and China Huaneng Group was used to finance coal-fired power plants per Reuters research (Stanway, 2021).

As sustainability linked financing gains ground globally, it is also changing the financing landscape in Asia most especially the green issuances which comes from the region's massive infrastructural requirement that is estimated to be USD26 trillion including climate and mitigation adaptation expenses (*Sustainable Finance in Emerging Markets and the Role of Securities Regulators*, 2019). Sustainability issues have a two-fold impact on both the financial markets and the market participants as they give rise to risks while also presenting opportunities.

There are certainly opportunities in exploring new channels of financing by offering contemporary instruments and products which have the potential to tap and mobilize the available dormant capital. It should not be discounted however, that risks also arise, particularly in emerging economies– where sustainability-related projects may be less financially rewarding, thereby, impacting investment returns. As Carney had stressed, financial institutions have an enormous capacity to direct the movements of funds in the market towards low-carbon [and socially] impactful initiatives and can actualize positive returns (Carney, 2015, 2019). On the other hand, since revenues are usually affected by business operations, the transition to a low carbon economy can have negative impacts in investment returns if the financial sector fail to successfully address the risks posed by climate change and mitigate their potential negative impacts. This is not to say that steering the financial system towards a low carbon transition shall not be disruptive.

Moreover, there is a possible risk of oversight in emerging economies like Indonesia and the Philippines as these countries' sustainable finance roadmaps are still in the initial stages despite being available (Setyowati, 2020). It is reassuring however, that the ASEAN region recently published its Taxonomy with a multi-layer approach of labeling and evaluating securities and financing.

It is acknowledged that there are conflicting views and materials that exist regarding whether sustainable issuances in the ASEAN capital markets can effectively and efficiently incentivize lenders. Cross border portfolio diversification provides positive returns for investors from both developed and developing markets, but the impact is higher on players from developing countries who are betting outside of the region (Driessen & Laeven, 2007). A study was also conducted wherein the alternative energies were added to a fund mix for an optimal portfolio strategy while also diversifying internationally and placing bets in both developed and emerging economies (Miralles-Quirós & Miralles-Quirós, 2018). The test proved that diversification in terms of instrument mix as well as expansion of cross border instruments can significantly improve the portfolio position.

A research paper focusing on emerging markets by Naqvi et. al. (2021) yielded a different result from the one of Miralles-Quirós and Miralles-Quirós when conventional funds and green funds were pitted and compared to each other. They found that adopting a green

strategy and concentrating solely on sustainable assets could potentially put a drag on the fund performance (Naqvi et al., 2021). Regular portfolios, consisting of traditional instruments, recorded higher earnings than the green portfolio. These findings have unquestionable implications in the capital markets, as they may discourage investors from considering sustainable and environmentally friendly option as offering a premium might be necessary to attract investments in renewable and possibly sustainably-related funds and instruments (Naqvi et al., 2021).

## **Chapter 3: Methodology**

Emerging economies in the ASEAN region, despite having variegated level of economic development and robustness of capital markets, acknowledge the need for an alternative source of financing– most specifically a move towards sustainably linked borrowing. Although faced with numerous challenges, the bloc aspires to be a mover in addressing climate risks and is committed to achieving carbon neutrality by 2030 while also focusing on uplifting the social wellbeing of its population.

The rise of sustainable finance as an alternative funding method is a recent development, not just within the ASEAN region, but on a global scale. This makes it particularly fascinating to witness the impact of these novel financial products in terms of the borrowing and investing landscape; moreso, as it can be a powerful tool that can shape and influence not just the market dynamics but also the more micro-aspect of the economy which is the individual.

This research solely focuses on the ten ASEAN member countries namely Brunei, Cambodia, Indonesia, Lao PDR, Myanmar, Malaysia, Singapore, Thailand, Vietnam, and Philippines but not on the wider scope of the developing markets globally. It seeks to answer whether incorporating sustainable financial instruments in a country's debt portfolio positively impacts the capital markets of emerging economies of ASEAN member states?

To analyze how the SF products impact the economy of ASEAN countries through a 'positivist lens' and to test if the MPT holds even to these new instruments, two data gathering methods were used. The quantitative aspects, such as the figures and details related to the traditional and sustainably linked bond issuances of each member state were all downloaded from the Bloomberg terminal which pools all significant market data globally. Meanwhile, for qualitative evaluation, two traders and two brokers from the Philippines were also interviewed in different occasion in order to support the output from the quantitative evaluation on sustainable bonds as well as to provide a more on the ground perspective of the financial market in terms of trading and liquidity conditions.

#### **3.1 Data Gathering**

The 'outstanding' country debt from both corporate and sovereign issuers were taken into account for the years 2018 to 2023 to assess capital markets conditions in the ASEAN bloc. Although the first climate related borrowing was made in 2015 by a corporate in Asia (Flammer, 2021), it was only in 2018 when the first *sukuk* green bond was issued by an ASEAN member country– Indonesia (Yu, 2018). However, this paper does not include green and social bonds, it only uses those that are classified as 'sustainable and sustainably linked' bonds. This was done by setting the platform's filter to Sustainable and Sustainably Linked and selecting the 10 ASEAN countries. Since the Bloomberg database could only provide information on Sustainable and Sustainably Linked bonds beginning 2018, this was utilized for both the regular and the SF related bonds.

Meanwhile, to evaluate the health and situation of the economy of individual countries, the data on GDP, unemployment, market capitalization, and foreign portfolio investment covering the years 1990 to the latest data of 2022 were collected from the World Development Indicator's (WDI) from the World Bank's Open Data repository. To extract the data related to the ASEAN member countries' GDP, the code NY.GDP.MKTP.CD was used; for the unemployment figures, SL.UEM.TOTL.ZS was the operating code; for market capitalization, CM.MKT.LCAP.CD was utilized; for the net foreign portfolio investment, BN.KLT.PTXL.CD was used; for the foreign portfolio investment on bonds, DT.NFL.BOND.CD was the operating code, and for the foreign portfolio investment in equities, BX.PEF.TOTL.CD.WD was utilized.

Development in Asia and in the world had been massive since 1990, hence, it was used as the pilot year for the economic indicators above. In three decades, the ASEAN experienced and witnessed several upturns and downturns, not just in the financial markets but also in terms of climate disaster risk and health emergencies– all of which have a massive impact on every nation's economy. In 1998, the region was tested as the Thailand's economy crashed leading to the contagious collapse of the banking and financial sectors in Asia (*Finance and Development*, 1998)– up to this day its effects linger. Its countries, although not highly exposed to the more financially savvy credit default swaps (CDS) and collateral debt obligations (CDO), experienced spillover effects during the global financial crisis of 2008. Many of the regional bloc's member was also tested during the outbreak of the Asian Avian Flu in 2004 (Abbott & Pearson, 2004), and recently the COVID-19 pandemic. One of its member countries, the Philippines, experienced the onslaught of two successive typhoons in 2009 which affected 9.3 million people while submerging its capital in water for days, causing USD4.38 billion in damages and losses (*Philippines– 2009– Typhoons Ondoy and Pepeng Affected 9.3 Million People / GFDRR*, n.d.). Hence, the three decades of WDI figures substantially capture and depict not just the boom and bust cycle of an emerging markets' economic journey, it also provides a backdrop on the extent of ASEAN countries' resiliency and sheds light on the nations' policy adoption when faced with challenges.

#### **3.2 Data Cleaning**

The software R was the programming language used to clean the data that were extracted from Bloomberg and World Bank Open Data. R was specifically chosen as it can accommodate a wide range of data and can process a massive amount of information that aids in the visualization process.

As the data on regular bond issuances made by ASEAN member countries were obtained through Bloomberg terminal, the data file was in excel format which contains relevant information related to both sovereign and corporate borrowings. Data on sustainable bonds were also generated through the same platform and yielded the same file format. Since both files had a lot of information that can cause noise in the visualization and analysis process, these were eliminated while the necessary pieces of information were chosen and kept.

For the regular bonds, the necessary information about the asset such as Issuer, ISO code (ISO3), Country of Incorporation (Country\_of\_incorp), Issue Date (Issue\_Date), Coupon (Cpn), Maturity Date (Mat\_Date), Currency of Denomination (CCY), Outstanding Amount in the market (Outstanding), Standard and Poor's bond rating SP\_rating), as well as the Bid (Bid) and Ask (Ask) prices were particularly selected and kept. The issue date and maturity dates were also 'mutated' to year format in order to create the new columns for Issue Year (Issue\_Year) and Maturity Year (Mat\_Year) that would be a necessary variable in terms of joining the data with other files. This resulted in having 14 variables for the regular bond data and 5,000 relevant observations that includes the issuances from 2015; this was then filtered as the study only requires the years 2018 to 2023 to match the available information that is available for

sustainable bonds. All bonds under the traditional asset class were then tagged as 'Regular' in reference to the type of projects and programs it can finance.

On the other hand, due to the fact that sustainable bonds are a relatively new product in the market, it also has lesser data available than the common assets in the market. It particularly lacks information related to Bid and Ask prices that is readily available to the traditional assets. This can be associated to the possible inefficiencies of the markets with regards to the trading of sustainable bonds or sustainable assets. Details such as Issuer, ISO code (ISO3), Country of Incorporation (Country\_of\_incorp), Issue Date (Issue\_Date), Coupon (Cpn), Maturity Date (Mat\_Date), Tenor, Currency of Denomination (CCY), Outstanding Amount in the market (Outstanding), Standard and Poor's bond rating SP\_rating), as well as the Bid (Bid) and Ask (Ask) were also selected and maintained yielding 13 variables with 307 observations for years 2018 to 2023. These contemporary asset classes were then tagged as 'Sustainable' based as fund utilization can only be utilized for projects and programs related to sustainability and development. Both files were then merged together for easier comparison and analysis.

From the World Bank's Open Data, six data sets were taken namely, GDP, unemployment, market capitalization, net foreign portfolio investment, foreign portfolio flows in bonds, and foreign portfolio flows in equities. The indicator NY.GDP.MKTP.CD is used for the GDP dataset which provided four variables such as Country, Year, ISO code (ISO3), and GDP values along with 330 observations for Brunei, Cambodia, Indonesia, Laos, Myanmar, Malaysia, Singapore, Thailand, Vietnam, and Philippines. The date ranging from 1990 to 2022 was applied to eliminate unnecessary figures before 1990.

Using the indicator SL.UEM.TOTL.ZS for unemployment; CM.MKT.LCAP.CD for market capitalization; BN.KLT.PTXL.CD for net foreign portfolio flows; BX.PEF.TOTL.CD.WD for foreign portfolio investment on equities market; and DT.FNL.BOND.CD for foreign portfolio investment on bond market– the remaining development indicators were obtained. The same treatment used for the GDP was applied to all the economic barometers. Each data frame contains four variables and 330 observations after the date range was filtered for the years 1990 up to 2022.

After cleaning all the data sets and sorting out the necessary information for the data frame, they were grouped and merged accordingly. The GDP, along with market capitalization,

and unemployment were combined to produce comparable indicators that would aid in the evaluation of the current health of an ASEAN member state. Moreover, net foreign portfolio investment , foreign portfolio investment in the capital markets, and foreign portfolio investments in the stock exchange, were merged to help assess investor interests in the emerging economies in the region as well as the issuer's needs and response to possible demands from market participants. Additionally, the data set related to sustainable bonds was also amalgamated with the data set of the regular and traditional bonds. This was done in order to create a comparative analysis of the two.

## **Chapter 4: Results and Analysis**

Using the Bloomberg platform, the researcher was able to collect the data set linked to sustainable bonds and regular bonds. With the aid of the R Studio software, the necessary data related to GDP, unemployment, market capitalization, and portfolio flows from the World Bank Open data were layered and integrated into each other along with the Bloomberg data on capital markets to come up with an operational output. R Studio also helped visualize the data after the cleaning and merging process and facilitated in the data analysis.

The goal is to assess whether incorporating sustainable financial instruments in a country's debt portfolio have a positive impact in the capital markets of the emerging economies of the ASEAN and ultimately drives economic growth through higher GDP and lower unemployment. First the development in the capital markets were analyzed before proceeding to the evaluation of the economic indicators to see whether sustainably linked instruments affect drives bond market expansion and economic growth.

#### **4.1ASEAN Capital Markets Development: Regular Bond Issuance**

The data on traditional bond issuance that captures both sovereign and corporate borrowings from the capital markets provides a glimpse of the status of the financial market in the ASEAN market. All throughout 2018 up to 2023, governments and private businesses are actively tapping the funds in the bond market which can be seen in the scale of issuances of individual countries in each year. It is important to note that all ASEAN member state have available and transparent data on their level of borrowing, except for Laos PDR which did not have relevant figures available in the Bloomberg data platform.

The figures below show the size of the aggregate bonds issued by each ASEAN country except for Lao PDR (Figure 9). All three figures below include the borrowings made by both the public and the private sectors to finance regular programs and projects. Based on the results, all countries in the ASEAN have a consistent borrowing mix of domestic and foreign denominated instruments. Although the volume of issuance per year varies, the debt portfolio of the country is diversified in various currencies. Additionally, the major chunk of the country's liability mix is in its domestic currency, which helps eliminate the possible currency and interest rate risks when it comes to interest and principal repayments.



**Figure 9.** Outstanding Regular Bonds Issued by Country per Year (2018-2023) (Malaysia, Philippines, Thailand, and Vietnam)<sup>1</sup>



**Figure 10.** Outstanding Regular Bonds Issued by Country per Year (2018-2023) (Brunei, Cambodia, and Myanmar)<sup>2</sup>

<sup>&</sup>lt;sup>1</sup> Country Code: MYS= Malaysia, PHL= Philippines, THA= Thailand, and VNM= Vietnam.



**Figure 11.** Outstanding Regular Bonds Issued by Country per Year (2018-2023) (Indonesia and Singapore)<sup>3</sup>

Only Brunei borrows in pure local Brunei Dollar (BND) based on the data available in Bloomberg. The generated data, however, should be taken with a grain of salt as it is only a single year figure (Figure 10). Meanwhile, Singapore, which is the most highly developed amongst the ten ASEAN countries is the most diversified in terms of the country's liability portfolio followed by Indonesia with various foreign denominated capital markets issuances (Figure 11). This can be a reflection of the number of foreign flows coming to these countries, translating to a higher supply of capital market products in varying currency denominations.

It is worth noting that Vietnam has a low level of outstanding debt and the sole country with almost equal level of foreign and local denominated liability (Figure 9). USD remains the foreign currency of choice for the issuers as can be seen in the yearly issuance of each country. The case of Cambodia, which has a dual currency in circulation, the Cambodian Riel (KHM) and the US Dollar (USD) is interesting in a sense that it has a very low amount of domestic liability

<sup>&</sup>lt;sup>2</sup> Country Code: BRN= Brunei, KHM= Cambodia, MMR= Myanmar.

<sup>&</sup>lt;sup>3</sup> Country Code: IND= Indonesia, SGP=Singapore.
in 2020 and has towering volume of USD denominated debt on the same year (Figure 10). This reliance on foreign denominated issuances can be perceived as investor's lack of confidence in the Riel and a preference for USD denominated bonds. The country also explored other sources of funding in 2022 which is evident from its issuance of Thai Baht (THB) denominated bonds, possibly testing if it can capture dormant funds from its neighboring country– Thailand.

Meanwhile, the impact of the COVID-19 pandemic can be seen in the spike in the volume of borrowing made by each country between 2019 to 2021 to support their own economies. Although Malaysia had the biggest debt issuance in 2021 of more than USD25 Billion (Figure 9), Singapore remains the leading borrower in the region, followed by Indonesia, Malaysia, Thailand, Philippines, and Vietnam with a diverse currency mix (Figure 12). The three economies with the least debts issued based on the data gathered are Myanmar, Cambodia, and Brunei.



Figure 12. Outstanding Regular Bonds Issued by Year per Currency (2018-2023)



Figure 13. Outstanding Regular Bonds Issued by Country (2018-2023)<sup>4</sup>

In terms of the frequency of maturity for all the traditional bonds in various denominations, most matured in 2022 while the remaining outstanding debt are concentrated in the short-term to the belly. The frequency table (Figure 14) shows a right skewed (positively skewed) distribution of maturing obligations in the block with issuers preferring to spread out their risk in the short term and medium term with less frequency of bonds retiring in the long term. This laddering strategy, which is a diversification approach, signals that government and corporate borrowers were previously able to hedge against interest rate risks– therefore, they were able to borrow when rates were still low for bonds that are maturing in 2022 to 2026. A couple of bonds issued in the ASEAN also have perpetual tenures and do not have maturity.

For the ASEAN, rates in the capital markets were already increasing from 2016 due to the uptick in inflation which added pressure on the yield of many securities. This, along with the more hawkish stance of many central banks in the region and in the global playing field brought about by the fiscal and monetary strain caused by COVID-19 pandemic to many economies,

<sup>&</sup>lt;sup>4</sup> Country Code: MYS= Malaysia, PHL= Philippines, THA= Thailand, and VNM= Vietnam, BRN= Brunei, KHM= Cambodia, MMR= Myanmar, IDN= Indonesia, SGP= Singapore.

adds further stress to the debt market. It can be observed that past the belly, there are less bond maturities in the long end (Figure 14), which could be taken as move by many governments and businesses to scatter their borrowing program across varying maturities and interest rate environments and thus providing liquidity and flexibility for issuers to gain access to funds for potential reinvest.



Figure 14. Frequency of Regular Bonds Maturing per Year



4.2 ASEAN Capital Markets Development: Sustainable Bond Issuance

Figure 15. ASEAN Sustainable Bond Map (2018-2023)

The map above (Figure 15) represents the outstanding sustainable bonds in the financial markets all over the ASEAN which were issued between the years 2018, which is the earliest available data, up to the most recent which is 2023. The weight of the color corresponds to the cumulative size of 'on-the-run' sustainably linked liabilities available in the capital markets of each country that were supplied by both corporates and sovereigns. This map proves that despite the hurdles faced by the region in terms of economic development, the bloc is taking a pro-active measure in the step towards sustainable financing that geared towards the goal of zero-carbon emissions. It is notable, that all six members of the ASEAN namely Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam actively issued sustainable financing instruments in the past five years while four other states– Brunei, Cambodia, Lao PDR, and Myanmar, remains absent in the sustainable financing environment. This does not mean however, that the latter four countries do not take the climate issue seriously, nor lags in taking the growing

opportunities in sustainably linked products. It is possible that Brunei, Cambodia, Lao PDR, and Myanmar supplied bonds that are tagged as Social, Environment, or Green– which are all out of the scope of this study.



Figure 16. Total Sustainable Bonds in the ASEAN by Country (2018-2023)<sup>5</sup>

Thailand remains the leader in the sustainable linked liability issuance in ASEAN having the biggest aggregated sustainable bonds from 2018 to 2023 in both USD and THB (Figure 16), with a massive chunk of its debt in the local denomination– the single country in ASEAN in terms of size that focuses more on capturing the domestic investors by supplying THB sustainable instrument. Vietnam is the sole country that is not diversified in terms of currency although its cumulative borrowing in the sustainable area is significantly lower than its ASEAN peers. Indonesia, Malaysia, Philippines, and Singapore are all branched out in different denominations but still prefers their United States Dollar (USD) issuance (Figure 18). This can

<sup>&</sup>lt;sup>5</sup> Country Code: IDN= Indonesia, MYS= Malaysia, PHL= Philippines, SGP= Singapore, THA= Thailand, VNM= Vietnam.

be interpreted that local investors are less interested in the sustainable linked bonds and more of the flows are coming from players abroad. Thus, a huge portion of issuance of the sustainable bond portfolio mix of the countries are being supplied in foreign denomination such as the USD, Euro (EUR), and Japanese Yen (JPY).



Figure 17. Sustainable Bonds Issued by Year per Currency (2018-2023)



Figure 18. Sustainable Bonds Issued by Country per Year (2018-2023)<sup>6</sup>

Sovereigns and corporates in Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam constantly borrowed from the market using the sustainable finance framework since 2018 (Figure 18). Malaysia is the most consistent of all the six ASEAN countries as it never skipped a year without supplying the market of sustainable instruments, thus providing steady liquidity. It is worth noting that sustainable liability of the aforementioned countries, most especially Thailand, picked up in 2020 when the COVID-19 pandemic hit the global economy. The global health crisis forced the financial sector and most especially many governments to look for an alternative source of financing to keep the economy afloat amidst the challenges of the lockdowns and disruptions in the operation of many businesses.

<sup>&</sup>lt;sup>6</sup> Country Code: IDN= Indonesia, MYS= Malaysia, PHL= Philippines, SGP= Singapore, THA= Thailand, VNM= Vietnam; Currency: EUR= Euro, JPY= Japanese Yen, PHP= Philippine Peso, THB= Thai Baht, IDR= Indonesian Rupiah, MYR= Malaysian Ringgit, SGD= Singaporean Dollar, and USD= United States Dollar.



Figure 19. Maturity Towers: Frequency of Issued Tenors from 2018 to 2023



Figure 20. Maturity Tower: Frequency of Sustainable Bonds Maturing per Year

In terms of liability strategy, the same laddering approach being used for traditional borrowing is also being applied for the sustainable linked issuances. It is also skewed to the right with most tenure in the short term and the belly (Figures 19 and 20). Unlike the tenor of regular bond issuances (Figure 14), sustainable linked bonds still do not offer perpetual maturity (Figure 20).

Between 2018 and 2023, a total of 4,187 traditional and sustainable bonds were supplied in the market by both corporates and governments across the ASEAN (Figure 22). The largest portion of the region's borrowing remains to be in the regular instrument encompassing 93% of the total distribution leaving a small 7% room for the contemporary sustainably linked borrowing (Figure 21).



Figure 21. Share of the Types of Bonds Issued in ASEAN in 2018-2023 (in %)



Figure 22. Share of the Types of Bonds in ASEAN 2018-2023 (Count)

### 4.3Capital Markets: View from the Trading Floor

Bond issuances can be a good measure of liquidity as it can be a useful indicator for both the supply and the demand side of the capital markets. A huge volume of issuance can signify a high level of investor demand; hence, sovereigns and corporates tend to provide products that are aligned to meet the demands of market players. However, the size of issuances does not usually translate to tradability or turnover. Due to the lack of data on bid-ask spread, turnover ratio, transaction size, and volume an interview was conducted to provide a better narrative on the market and trading activities in the region, most especially in the Philippines. Hence, two traders and two brokers in the Philippine capital markets were asked to provide a better perspective in the movement of the securities and the fund flows.

When asked if there is a difference in liquidity between the nuovo sustainable bonds versus the traditional bonds available in the market, both brokers and traders perceive no difference in tradability as sustainable linked bonds are usually being treated the same as a regular bond. The traders on the other hand emphasized that for the sustainable linked bonds, there is a preference for the dollar denominated security issued by the Republic of the Philippines like the ROP-48 which is in the longer end. This bias for the ROP issued by the Philippine Treasury stems from its relatively risk-free feature in comparison with the corporate issuances as debt funding is part of the government's budget appropriation.

In terms of reception of sustainable bonds, the sales brokers commented that issuances were well received by market participants and has no difference in terms of demand with the traditional sovereign and corporate long-term debt securities. Both the brokers and the traders mentioned that players do not really put any distinction as to whether the instrument will be used to finance sustainable projects and activities. Atleast for the ASEAN market, the traders emphasized that their primary goal is mainly focused on the income generation and return. Thus, the main priority remains chasing the yield and ensuring that their proprietary trading books are gaining from their trading execution while keeping their portfolio in a liquid position and well invested in highly traded instruments.

The four who were interviewed separately, do not see the sustainable bonds as a game changer in the capital markets. One trader who had a stint with Banca d'Italia, the Central Bank of Italy, pointed out that in the case of the Philippines and many other ASEAN countries— the sustainable bonds do not have any impact on the market nor in the trader's portfolios due to the lack of policy requiring financial institutions and investment houses to maintain such holdings in their own books. The same trader along with the brokers also pointed out that most of the demand of these contemporary instrument are foreign players. Europe is perceived to be the biggest driver when it comes to the demand for sustainable bond, regardless of currency denomination, as most of these offshore funds are forced to allocate a portion of their investable cash to various sustainable financial products. The big-ticket benchmark portfolios, according to the traders and brokers, are also the ones that are highly invested in sustainably linked bonds.

#### **4.4 ASEAN Economic Barometer**

The GDP is one of the important macroeconomic metrics which is reflective of a country's growth as it captures the aggregate value-added in the production process and in the service output across all industries within the country during a given period. This is a valuable tool, especially in comparing the economic performance of various countries and in the analysis of the recent economic trends which can be used in policy decisions with regards to the monetary and fiscal aspects of the state.



Figure 23. GDP of ASEAN Countries (1990-2022)<sup>7</sup>

From the generated data, the cumulative GDP of the ASEAN bloc (Figure 23) has massively grown since 1990 despite of the scars left by the 1997 Asian Financial Crisis, 2004 Asian Avian Flu, 2008 Global Financial Crisis, and the 2019 COVID-19 pandemic– the most recent. All the ASEAN members enjoyed a constant growth, most especially Indonesia which experienced the biggest leap since the 1990s.

<sup>&</sup>lt;sup>7</sup> Country Code: BRN= Brunei, IDN= Indonesia, KHM= Cambodia, LAO= Laos PDR, MMR= Myanmar, MYS= Malaysia, PHL= Philippines, SGP= Singapore, THA=Thailand, VNM= Vietnam.



Figure 24. GDP, Market Capitalization, and Unemployment MYS, VNM, THA, PHL (1990-2022)<sup>8</sup>



Figure 25. GDP, Market Capitalization, and Unemployment IDN and SGP (1990-2022)<sup>9</sup>

<sup>&</sup>lt;sup>8</sup> Country Code: MYS= Malaysia, PHL=Philippines, THB= Thailand, VNM= Vietnam.



**Figure 26.** GDP, Market Capitalization, and Unemployment BRN, KHM, LAO, MMR (1990-2022)<sup>10</sup>

To test the theory that increasing market capitalization leads to higher GDP print and decreases unemployment, the three data sets were put side by side to better see their relationship. Surprisingly, not all countries have available data in terms of the size of their financial markets. The six countries that are present in the sustainable bond environment such as Malaysia, Philippines, Thailand, Vietnam, Indonesia, and Singapore are the states with accessible and transparent data for all the three aforementioned facets of the economy. However, the four ASEAN member nations such as Brunei, Cambodia, Lao, and Myanmar do not have obtainable data in terms of market capitalization (Figure 26).

For Malaysia, Philippines, Thailand, Indonesia, and Singapore the theory holds true (Figures 24 and 25). With the increase in market capitalization, GDP also grows substantially while unemployment declines. Increasing market capitalization gauges investment activities in the stock market of the country. In terms of market capitalization in ASEAN, Singapore which is

<sup>&</sup>lt;sup>9</sup> Country Code: IDN= Indonesia, SGP= Singapore.

<sup>&</sup>lt;sup>10</sup> Country Code: BRN= Brunei, KHM= Cambodia, LAO= Lao PDR, MMR= Myanmar.

a financial hub and has the most developed financial market in the region, is the leader with a stock market size of USD750 Billion before the pandemic hit (Figure 25) despite a GDP that is just about the size of its developing peer, Thailand. The latest unemployment numbers also show that Cambodia with a very small GDP has the lowest unemployment in the bloc (Figure 26).

On the other hand, the case of Vietnam is interesting. Despite a growing output and an expanding market capitalization, its unemployment does not respond to the GDP nor to the size of the equities market (Figure 24). One explanation could be that the businesses in Vietnam are borrowing from the financial markets, but the proceeds are not being used for job creation or business expansion. It is possible therefore, that the increasing trend of Vietnam's market capitalization is brought about by refinancing requirements to pay off maturing obligations. Meanwhile, Brunei's unemployment which is the highest in the region at 7.5% and even higher in 2018 is remarkably moving against the GDP print (Figure 26).



Figure 27. Portfolio Flows in ASEAN Countries 1990- 2022 (IDN, PHL, SGP, THA, VNM)<sup>11</sup>

<sup>&</sup>lt;sup>11</sup> IDN= Indonesia, PHL= Philippines, SGP= SIngapore, THA= Thailand, VNM=Vietnam.



Figure 28. Portfolio Flows in ASEAN Countries 1990- 2022 (BRN, KHM, LAO, MMR, MYS)<sup>12</sup>

Figures 27 and 28 represent the net foreign portfolio flows of the ASEAN member states. FPI is another economic barometer that is typically used to asses investment sentiment as it captures fund flows as players respond to uncertainties and risks accompanying the issuing corporations or sovereigns. Singapore, despite having a fair size of GDP has the most erratic fund flow performance and the steepest ascent hitting past USD1 Billion net foreign portfolio inflows in 2019 (Figure 27). Malaysia, similarly has an incredibly volatile foreign portfolio flows and the only country along with Indonesia and Singapore attracting hot money in its stocks and bond markets (Figure 28).

<sup>&</sup>lt;sup>12</sup> BRN= Brunei, KHM=Cambodia, LAO= Lao PDR , MMR= Myanmar, MYS= Malaysia



Figure 29. ASEAN Bond Investment vs Equities Investment Flows (1990-2022) (MYS, PHL, THA, VNM)<sup>13</sup>



Figure 30. ASEAN Bond Investment vs Equities Investment Flows (1990-2022) (IDN and SGP)<sup>14</sup>

<sup>&</sup>lt;sup>13</sup> MYS= Malaysia, PHL= Philippines, THA= Thailand, VNM= Vietnam



Figure 31. ASEAN Bond Investment vs Equities Investment Flows (1990-2022) (BRN, KHM, LAO, MMR)<sup>15</sup>

Although net foreign portfolio flows provide a narrative on how offshore investors perceive a country's economy, it is also good to assess where they are placing their bets– in the capital markets or the equities market of the country. Hence, the foreign portfolio flows in the ASEAN member countries' bond markets as well as the foreign portfolio flows in its stock exchanges were compared. For Philippines, Thailand, and Indonesia (Figures 29 and 30), foreign investors are reactive and redirect their investment flows from one the bond market to the equities market within the country more often compared to other ASEAN peers and vice versa. The figures show that for the four countries mentioned, their flows are most often than not maintained within the nation rather than pulling out of their economy. This results in a more constant trend in the movement of portfolio flows for Philippines, Thailand, and Indonesia. It is

<sup>&</sup>lt;sup>14</sup> IDN= Indonesia and SGP= Singapore

<sup>&</sup>lt;sup>15</sup> BRN Brunei, KHM= Cambodia, LAO= Laos PDR, MMR= Myanmar.

difficult to examine Malaysia, Singapore, Brunei, Cambodia, and Myanmar, as they do not have data on the equities side.

# Conclusion

The research focused on exploring the impact of incorporating sustainable financial instruments in the debt portfolios of ASEAN member countries and its influence on their capital markets and economic growth as well as on the unemployment factor. The findings reveal that despite variegated levels of economic development and depth of the capital markets among ASEAN countries, there is a growing recognition of the importance of sustainable financing. Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam actively issued sustainable financial instruments from 2018 to 2023, while four others, Brunei, Cambodia, Laos PDR, and Myanmar, did not have available data on sustainable bonds. Thailand emerged as a leader in sustainable bond issuance while Singapore stood out for its well-developed financial market, with the most diversified currency mix in the bloc.

Traditional bond issuances remain to be the more prefered asset in the ASEAN region, with governments and private businesses actively tapping into the bond market for financing various programs and projects. The COVID-19 pandemic led to a significant spike in bond issuances as countries sought alternative financing instrument to weather the challenges of the health crisis. Singapore, Indonesia, and Malaysia were the most diversified in terms of currency denominations, and USD remained the preferred foreign currency for bond issuances across the region.

The interviews conducted with traders and brokers shed light on the trading dynamics and demand for sustainable bonds. It was observed that these instruments were not considered a game-changer in the capital markets, and their tradability are just at par with regular bonds. Market players, mostly from Europe, showed greater interest in sustainable bonds, possibly due to their investment mandates requiring allocations to sustainable financial products. However, for many ASEAN investors, the priority remains on generating income and returns rather than the concept of impact investing.

Different economic barometers were also examined; market capitalization was associated with higher GDP growth and lower unemployment rates, indicating a positive relationship between capital market development and economic performance. However, Vietnam displayed an interesting anomaly, as its growing economy and market capitalization did not significantly impact its unemployment rate. Brunei also exhibited a high unemployment rate that did not respond to its GDP.

While the impact of the contemporary and trendy sustainable bonds on the capital markets in the ASEAN and its relationship to economic growth remains a subject of interest, the study did not find significant evidence to suggest that sustainable bonds are driving the evolving changes and development in the financial market. Additionally, although there could be a relationship between the robustness of the capital markets of a country and economic expansion, the study is not conclusive for causality. Further tests and statistical regression are needed to prove correlation and relationship. Moreover, sustainable bond issuances are also treated like a regular bond by many ASEAN players. Borrowings tagged as sustainable are not massive to move the financial markets or influence the decisions and strategies of many market participants in the region. Furthermore, inspite of being liquid and highly traded, the lack of working policies associated to exposure requirements and investment reporting related to participation in the sustainable instruments remains a challenge for the bloc.

### Recommendation

To gain deeper insights into the impact of integrating sustainable financial instruments in a country's liability portfolio, and eventually spilling over to the output and employment of a country– the researcher suggests looking into the other financial such as turnover ratio, bid to cover ratio, bid-ask spread, yield-spread, and volume of transactions. Additionally, conducting a regression analysis would provide a more robust understanding of the actual correlation amongst the variables and their possible degree of relationship. Building on the study related to the ASEAN emerging economies and expanding through other developing markets will enrich the literature on the bond markets most especially for countries that are highly exposed to adverse climate changes.

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# **Thesis Report**

## Introduction

The Association of Southeast Asian Nations (ASEAN) is a regional economic bloc which is currently the fifth biggest economy in the world and is forecasted to become the fourth largest in 2050 (HSBC and Climate Bonds Initiative, 2022). It is consisted of ten 'culturally diverse' member countries namely Brunei, Cambodia, Indonesia, Laos People's Democratic Republic (Lao PDR), Myanmar, Malaysia, Singapore, Thailand, Vietnam, and Philippines which has a combined population of more than 650 million and an aggregate GDP of USD3.11 trillion in 2020 (HSBC and Climate Bonds Initiative, 2020).

Despite the rapid economic growth in the region, the Global Climate Risk Index (CRI) developed by the German Watch identified three ASEAN member countries— Myanmar, Philippines, and Thailand— to be amongst the ten most vulnerable nations globally in terms of the impact of natural disasters brought about by extreme climate changes in the past two decades from 2000 to 2019 (Eckstein et. al, 2021). These developing nations, which are highly exposed to climate hazards also have lower coping capacity making it difficult for them to transition to a more progressive and more advanced level of economic development.

In 2000 to 2019 alone, 47,000 people lost their lives from adverse weather events resulting in economic losses of around USD2.56 trillion in terms of purchasing power parities (Eckstein et.al, 2022). In this climate vulnerability narrative, which is prevalent in low-income economies, developing countries heavily rely on the USD100 billion climate financing pledge made by advanced economies during the United Nations Framework Convention on Climate Change (UNFCC) COP15 in Copenhagen in 2015 (Martinus and Jiahui, 2022).

The challenges brought about the COVID-19 pandemic put further strain on vulnerable nation's fiscal stability. Despite the promise of financial assistance from developed country partners, the Organization of Economic Cooperation and Development (OECD, 2022) noted that climate financing, although increasing, still falls short of the USD100 billion annual goal from 2013 to 2020. It is therefore important, that developing countries find alternative sources of financing instead of heavily relying on multi-lateral and bi-lateral aid.

In line with this, the ever changing economic, political, and social landscape have strongly influenced the continuously evolving global financial markets. Social and sustainably linked financing, such as the Environmental Social and Governance-debt (ESG) and Sustainability Linked Loans (SLL) have been the buzz words in the past five years since its inception. The amount of these products brought in the market dramatically expanded in 2021 according to the International Monetary Fund (IMF) (Gautam et. al, 2022) and the International Financial Corporation- World Bank (IFC-World Bank, 2022), due in part of the pandemic.

From 2017, over USD890 Billion of sustainably linked financial instruments has been issued in the global markets (de Calonje and de la Orden, 2022). Such financial products have been very popular to the developed countries and have remained concentrated in these markets since it was launched. Despite borrowers, investors, and regulators' interests in such instruments, the emerging markets' share only accounted for five percent of the global figures or about USD190 Billion (de Calonje and de la Orden, 2022).

With its popularity and the current pandemic-induced demand for these products, it is timely to look at **how sustainable financing impacts emerging markets and developing countries within the ASEAN and the role that regulators play in terms of investment diversion towards these products**. Such countries are vulnerable to the impacts of climate change and face higher risks of disasters. Therefore, sustainability issues can severely impact business operations in developing economies which then affects its GDP— drastically hampering growth.

Although the IMF noted "sufficient capital and liquidity" in the global financial system (Adrian, 2022), closing the investment gap is one of the biggest challenges that regulators face. Emerging economies have to address issues related to capital barriers for foreign investors, valuation due to quality and consistency of climate data, transaction costs, small local investor base, project and country risks, as well as the congruence of public sector finance and national policies.

The researcher therefore aims to assess the opportunities for developing economies in terms of accessing alternative sources of funding apart from the traditional borrowing, specifically the more stable sustainably-linked debt products as well as the risks that comes with such instruments. As many emerging economies are exposed to climate hazard, it is highly relevant to look at products that can mitigate climate risks and consequently strengthen the financial sector of the country while improving the capital markets to achieve a stable economy.

The role of the regulators and the related policies present also play a huge impact on these sustainable financing as well as highly influence market behavior. A thorough evaluation of such instruments can help the researcher come up with policy recommendations that the governments from emerging economies can use in order to re-direct capital flows from developed economies and achieve a more robust capital market.

This will be particularly useful for the Republic of the Philippines (ROP) which is late in the adoption and is a new entrant in the market issuing its first ever Sustainability Dollar Global Bonds in March 2022 raising USD2.25 billion (Rosales, 2022; Bureau of the Treasury, 2022). The outcome of this study will help improve the country's capital markets as well as the Philippine government in capturing new investor base.

Sustainable Finance and Investment

The Industrial Revolution spurred business activity and economic growth which then led to prosperity and eventually to higher consumption as well as excesses. Economic and finance models were created at a time when resources were abundant. Thus, most of the models being widely used today in both economic and financial theories do not factor in social and

environmental externalities as well as burdens that the world faces at present (Shoenmaker and Schramade, 2019).

As the dialogue about the rising world temperature becomes more pronounced, the role of financial institutions in terms of allocating resources for optimal productive use has also been amplified. Financial institutions (FI) do not only connect savers and borrowers, the financial markets also facilitate the flow of capital which can be used to signal investment productivity in a capitalistic structure that can highly influence issuer and investor decision making strategies (Bose et. al, 2019).

This intermediary role gives the financial sector an enormous ability in shaping global markets and influencing sustainable development. As such, the United Nations Environment Program (UNEP) through the UNEP Financial Initiative on the Environment and Sustainable Development tried to harness the capacity of banks and asset managers in "integrating environmental considerations into all aspects of the financial sectors' operations and services [with a] secondary objective of [fostering] private sector investment in environmentally sound technologies and services" (Bouma et. al., 2001).

With a more social and environmental conscious policy makers and market players, sustainable finance and investment (SFI) has gained more attention through the years. From a financing that is environmentally focused, sustainability has evolved into instruments that do not limit funding utilization into green projects, but also encapsulates those endeavors that bring about positive social outcomes (HSBC and Climate Bonds Initiative, 2020).

Although SFI lacks a universally standardized definition, "it is used as an umbrella term representing all concepts related to the implementation of financial and investment activities based on sustainability-oriented strategies (de Souza Cunha et. al, 2021)". It is therefore a broad term encompassing the interaction between investment and lending which covers activities related to environmental, social, governance, and economic aspects oriented to a long-term value creation (LTVC) (ISO, 2021; Shoenmaker and Schramade, 2019).

Relative to traditional finance which is anchored in the theory of the firm, wherein the sole driver of a firm's behavior is profit maximization while minimizing the cost (Anderson and Ross, 2005), SFI on the other hand moves closer to Cyert and Hedrick's (1972) critique of the aforementioned neo-classical model which extends the old paradigm to deal with more realistic scenarios and treats businesses as a more complex entity. SFI therefore moved from shareholder maximization wherein optimal return was the goal, into a framework that puts stakeholder value at the core—emphasizing equal importance to the society, environment, and profit— into a typology that weighs on social-environmental impact first (Shoenmaker, 2017).

Sustainable Finance Typology	Value created	Ranking of factors	Optimisation	Horizon
Finance-as-usual	Shareholder value	F	Max F	Short term
Sustainable Finance 1.0	Refined Shareholder value	F > S and E	Max F subject to S and E	Short term
Sustainable Finance 2.0	Stakeholder value	T=F+S+E	Optimise T	Medium term
Sustainable Finance 3.0	Common good value	S and E > F	Optimise S and E subject to F	Long term

Note: F = financial value; S = social impact; E = environmental impact; T = total value. At Sustainable Finance 1.0, the maximisation of F is subject to minor S and E constraints.

 Table 1. Framework for Sustainable Finance (Shoenmaker, 2017)

It is important to note that SFI "does not redefine finance" as Migliorelli (2021) pointed out. SFI rather articulates the role of finance by re-aligning its focus on funding "activities that contribute to the achievement and improvement in, atleast one of the relevant sustainability dimensions (Migliorelli, 2021)".

### **ASEAN Emerging Economies and Sustainability**

The ASEAN which started with five member countries in 1967 has now ten member nations which adopted "the mutual respect of sovereignty and non-intervention in internal affairs as its guiding principles (IGES, 2015)". Although initially integrated for the purpose of maintaining peace and security as well as preventing internal conflicts and limiting competition (Narine,1996) at time when policy makers' main concern was the threat of foreign backed insurgencies, the ASEAN as a community has transformed to an economic institution through the years.

Many political scholars like Jones and Smith (2002) remain critical about the creation and existence of the ASEAN, even labeling the bloc as an "imitation community" due to the half-baked and incomplete nation building that the participating countries went through post colonization. The ASEAN, although functioning as a collective economic bloc, is definitely incomparable to the European Union (EU).

Unlike the EU whose member states are all developed economies past the manufacturing and industrial phase, and with relatively high government efficiency as well as shared regional identity (IGES, 2015)— the ASEAN community is much more diverse in level of economic development while faced with a challenge of governance capacity as well competing national identities that are at odds with its regional identity (Narine, 1996).

Despite the criticism that the ASEAN has weak institutional structures brought about by its pluralistic nature (Emmerson, 2005), its member states continue to collectively work and collaborate to achieve a common goal beyond the initial goal directed towards political purposes (Frankel and Wei, 1996). Aligning its mission to the global initiative which is led by the UNFCC 26<sup>th</sup> session (COP26) under the Paris Agreement— the ASEAN, through the efforts of the

ASEAN Taxonomy Board (ATB), recently released the first version of the "ASEAN Taxonomy for Sustainable Finance" (Bank Negara, 2021). A proof that ASEAN, although an "imitation community" as Jones and Smith (2002) tagged it to be, continues to aspire and pursue a transition towards a more sustainable and carbon neutral region (ASEAN, 2021).

With an aggregate population of 650 million people, ASEAN member states have varying stages of economic development, ranging from mostly low- to middle income, with an exception of Singapore and Brunei Darussalam (ATB, 2021). The threat of floods, heat waves, and rainfall induced landslides were identified as the most serious climate change issues that these emerging economies usually deal with (Seah et. al, 2022).



### Figure 1. GDP per capita (in USD) by ASEAN Member States, 2000-2019 (ATB, 2021)

Faced with the hurdles of economic development accompanied by the challenges brought about by climate issues, a united front towards sustainable financing that involves not just ministries and central banks, but also includes private entities, matters for the region. Having an "ASEAN Taxonomy for Sustainable Finance" which will be used to evaluate the financing utilization is a step in making the zero-carbon emission goal happen.

The key features of the ASEAN Taxonomy are the four major environmental components and the two essential criteria of impact assessment. The four main environmental objectives are (1) climate mitigation, (2) climate change adaptation, (3) protection of healthy diversity, and (4) promotion of resource resilience transaction to circular economy. Meanwhile, the two essential criteria were identified to be that funding utilization should (1) do no significant harm and could be for (2) remedial transition.



Figure 2. Multi-tier Taxonomy Design (ATB, 2021)

By harmonizing the ASEAN Capital Markets' framework for ASEAN Green Bond Standards (2018), ASEAN Social Bond Standards (2018), and ASEAN Sustainability Standards (2018), the ATB was able to craft a taxonomy that has a multi-tiered approach with a 'Plus Standard' relative to the binary approach of the EU Taxonomy (2020). This was done as regional members of the ASEAN have varied levels of development. Therefore, a 'one-size fits all' method was not considered the most appropriate solution for establishing a guiding regulatory framework (ATB, 2021).

Apart from this, the ASEAN Taxonomy is unique since it classifies the Foundation Framework (FF), which is a qualitative sector-based decision, into three different levels namely the 'Green FF', 'Amber FF', and 'Red FF'. Furthermore, the 'Plus Standard' focuses on the activity-level threshold and determines whether such economic enterprise falls into either 'Green PS', 'Amber PS', and 'Red PS'. The color tagging is the outcome of the decision tree framework provided by the Taxonomy. However, the threshold for the PS is still under development and will be released in the next phase as the Taxonomy is a living document that is still evolving and expanding.



Figure 3. Sector Agnostic Decision Tree (ATB, 2021)

### **Review of Related Literature**

Based on the proprietary research done by the consulting company McKinsey, the emerging economies in Asia has the potential to liberate an estimated USD 800 billion annual funding in the markets for middle to large corporations which can be used as a catalyst for growth (Jain et. al, 2021). Unfortunately for most emerging economies, especially in the ASEAN, the shallow capital markets and limited financial instruments available for players make it difficult to tap such mammoth financing.

One of the usual recommendations of existing literatures with regards to the deepening of the capital markets of emerging nations is adding some changes in market structure and altering some policy design that involves public and private institutions. Today, there is a growing trend of sustainable finance in the global playing field which can be tapped in order to promote capital inflows in the region while tackling the issue of climate change.

According to the World Wide Fund for Nature (WWF) and UNEP (2017), ASEAN alone needs an estimated USD 3 trillion on sustainability related investment from 2016 to 2030 which proves that there is in fact an opportunity for an alternative source financing in the region to achieve the 2030 climate goals. Studies also suggest that incorporating sustainable assets, like green energy, in order to diversify portfolio holdings has a potential to increase a fund's returns (Miralles-Quiros and Miralles-Quiros, 2019; Miralles-Quiros, 2018). It has been proven that regional and global diversification has been beneficial to players in both developed and developing nations
(Driessen and Laeven, 20005); grounded on Harry Markowitz's 'Modern Portfolio Theory' (Elton and Gruber, 1997) wherein rational players are assumed to only place their bets on an alternative instrument when the risks are compensated by returns, thus postulates that adding an SF asset in one's portfolio mix, especially from an emerging market economy, can provide a better risk-return profile that translates to higher potential earnings.

Relevant study on the impact of SFIs in emerging markets and developing countries in the ASEAN however, remains scant. Although these alternative sources of funding are becoming more popular to developing and transitioning economies which contributes massively in the global economy's production, trade, and population (Naqvi et. al, 2021), the dearth of literature remains focused on developed economies.

Additionally, figures and numbers are focused on green bonds and on social bonds. Topics on sustainability remains limited on environmental or social, rather than the integration of both, due to the fact that SF was previously boxed in only one aspect of fund utilization. Sustainable products which encompass green and social objectives, are fairly new; hence, there remains a gap in the literature of SF in emerging economies which is an are that can be further explored.

Morningstar (2021) reported that the rapid growth in sustainability-themed financial instruments in the global markets over the course of five years have reached around USD3.2 trillion. This figure encompasses products tagged as sustainable funds amounting to over USD1.7 trillion, green bonds surpassing USD1 trillion, social bonds reaching about USD 212 billion, and mixed-sustainability bonds hitting USD 218 billion, most of which are based in developed countries and targeted towards the assets in developed markets (UNCTAD, 2021).



Figure 4. Five Largest Countries in the Green Bond Market 2020 (Morningstar, 2021)



Figure 5. Five Largest Countries in the Social Bond Market 2020 (Morningstar, 2021)

UNCTAD also reported a 30% increase in sustainability-themed financing from 2019 to 2020 hitting 3,987 in terms of portfolio count and an asset under management (AUM) amounting to USD1.7 trillion which are highly concentrated in Europe and the United States (UNCTAD, 2021). Based on the World Investment Report data, the sustainability space accounts for 3,435 on mutual funds and 552 on exchange traded funds (ETF) with an AUM of USD1.56 trillion and USD174 billion respectively (WIR, 20221).

Moreover, the majority of the assets are allocated in equity, about 62%; while the other 38% is equally divided between fixed income and mixed-funds. Developing and transitioning countries however, are nowhere in the sustainable fund map representing below 10% of the portfolios, despite its stock markets contributing to 23% of global capitalization and having five percent of the sustainably linked funds domiciled locally (WIR, 2021).



**Figure 6.** Number of Sustainable Funds Under Management, 2010-2020 in Billion USD. (WRI, 2021)

The steep climb of SF products in the market had been highly influenced by the pandemic as sovereigns, corporates, and national organizations sought alternative financing for the COVID-19 relief operations (Toole, 2022; UNCTAD, 2021). In terms of sustainability-linked issuances, the emerging markets accounted for only five percent of the world figures (de Calonje and de la Orden, 2022).

WRI (2021) estimates that the summative amount of outstanding sustainable bonds in the world market is currently at USD1.5 trillion. The SFI bond figures are undeniably impressive with a 67% year on year growth. However, it is important to note that relative to the cumulative global bond market of USD119 trillion, sustainable bonds are but minute portion of 1.3% of the aforementioned enormous figure (WRI, 2021). Since market players are shifting to a more than rational risk-return strategy and are being more considerate in terms of sustainability impacts of their borrowing and investment decisions, the sustainability linked channels can be a promising segment especially for emerging economies in the ASEAN which are highly exposed to sustainability risks.

In ASEAN, the UNEP identified that "green investment has to grow 400% in order to protect the region from environmental risks" (UNEP, 2017) with Indonesia requiring the biggest amount of financing. Meanwhile, in the sustainability scoring done by ROBECO (2021), Philippines, Cambodia, and Laos PDR got the lowest sustainability rating in the region on a scale of one through ten with ten as the best.



Figure 7. Global Country Sustainability Ranking (ROBECO, 2021)

Current data of the IFC-World Bank (2022) captures a world macro picture of the sustainabilitylinked products in emerging economies in terms of sustainability-linked loans and sustainabilitylinked bonds totaling USD43.7 billion. It is however difficult to identify how much of the said numbers account for the ASEAN.

Available figures from the Institute of Southeast Asian Studies-Yusof Ishak Institute (2022) only captures financing instruments in the ASEAN geared towards projects addressing climate issues. Majority of the funding or equivalent to 85% was sourced through debt instruments in 2019 while the remaining 15% was from grants and equity shares (Martinus and Jiahui, 2022). It is difficult to identify however, the amount of debt sourced through multi-lateral and bi-lateral loans from the regular sustainability issuances provided the available data.



Figure 8. Financial Instruments Used in Climate Finance to ASEAN Recipients (ISEAS, 2022).

Even though there is a dearth of guiding principles in terms of what constitute as climate, social, sustainability, and sustainability-linked instruments like the International Capital Markets Association (ICMA), the Asian Development Bank (ADB), and the European Commission's standards, the definition of 'sustainable finance' remains complex. It is commonly used umbrella term which covers "financing that support sectors or activities that contribute to the achievement of, or of the improvement in, atleast one of the relevant sustainability dimensions Migliorelli (2021)".

The lack of a standard single definition of what encompasses 'sustainable finance' pose a challenge as various countries can lay down its own criteria when it comes to labeling instruments. This raises the issue of integrity of the products in the market as it is highly exposed to the risk of 'greenwashing' or the use of deceptive strategies to promote sustainable image of the instrument (Migliorelli, 2021). The credibility of these instruments as ICMA (2020) pointed

out lies on the country's external or internal key performance index. A classic example is China, wherein the country's issuance of a Yuan denominated carbon neutral bonds by the state-owned energy corporation China Energy Investment Corporation and China Huaneng Group was used to finance coal-fired power plants per Reuters (2021) research.

As sustainability linked financing gains ground globally, it is also changing the financing landscape in Asia. In the words of IOSC (2019), "sustainability issues affect both the financial markets and the market participants as they pose risks but also create opportunities".

There is indeed opportunity in offering new instruments and products as well as tapping dormant capital. However, risks also arise as projects related to sustainability in emerging economies can be less profitable which then affects investment returns. As Carney had established (2019, 2015), financial institutions have an enormous capacity to mobilize the movements of funds in the market to low-carbon [and socially] impactful initiatives and can actualize positive returns. On the other hand, since revenues are usually affected by business operations, the transition to a low carbon economy can have negative impacts in return if the financial sector will not be able to successfully address the risks posed by climate change.

There is also a risk of oversight for [emerging economies like] Indonesia [and the Philippines] as noted by Setyowati (2020) as the sustainable finance roadmaps in these countries although already available, are still in the initial stages. It does help however that the ASEAN as a region recently published its Taxonomy with a multi-layer approach of labeling and evaluating securities and financing.

It cannot be discounted that there are also clashing studies as to whether sustainable issuance in the ASEAN capital markets can actually incentivize lenders. Cross border portfolio diversification provides positive returns for investors from both developed and developing markets, but the impact is higher on players from developing countries who are betting outside of the region (Driessen and Laeven, 2005). Miralles-Quiros and Miralles-Quiros' (2019) study on adding alternative energies to a portfolio mix as well as diversifying internationally in both developed and emerging economies can improve the one's fund position significantly.

The findings of Naqvi et. al. (2021) produced a different output when conventional funds and green funds we compared. They found that going green and focusing solely on sustainable assets can put a drag on the fund performance. The regular portfolio with traditional instruments recorded higher earnings than the green fund. This have unquestionable implications in the capital markets as "it will disincentivize investors in sustainable and environmentally friendly options as they will have to offer a premium to invest in renewable funds (Naqvi, 2021).

## Methodology

Emerging economies in the ASEAN, despite not having an equally mature capital markets as the developed countries, acknowledge the need for an alternative source of financing. The bloc aspires to be a mover in addressing climate risk and continue to aspire to reach carbon neutrality in 2030 as well as uplift the social wellbeing of its population.

The growing trend of alternative funding through SF is pretty new not just in the ASEAN, but also globally. Hence, it is interesting as to how the new products in the market shapes and impact the borrowing and investing landscape.

This research will only focus on the emerging economies in the ASEAN and not into the wider scope of the developing markets globally. Data regarding sovereign and corporate issuances from the ASEAN member countries namely Brunei, Cambodia, Indonesia, Lao PDR, Myanmar, Malaysia, Singapore, Thailand, Vietnam, and Philippines will be used. It will only focus on issuances that are tagged as sustainable in the Bloomberg data platform and will not include those that have the green badge or the social badge.

From this pool of data, the researcher will look into the combined outstanding debt issuances of corporates and governments in order to assess the maturity profile of the borrowings. This will also be separated by denomination profile to see how the ASEAN members spread risks in terms of currency. Funding utilization will be assessed in terms of the project profile based on the ASEAN taxonomy instead of the per country guiding principle for a more macro approach.

Existing funds related to sustainability or has a portfolio mix that includes sustainable instruments in the emerging ASEAN market per Bloomberg classification will be used. In order to analyze the fund performance, the market value of the portfolios will be used and will be benchmarked to the traditional funds in the emerging market.

Bloomberg publishes how relevant a security and a fund is provided its own metrics. This will be used to see fund relevance in the market. Informal interviews with atleast three market participants in the Philippines belonging in trade, sales, and regulation, will also be done to appraise how on the ground players perceive alternative investment channels. Understanding the activity of such securities will also provide clearer picture of the local capital market scene and reception of new financing opportunities. This will be done as players have broker boxes and therefore can properly scan market activity.

Lastly, each country's implementation of the ASEAN Taxonomy will also be assessed through policies. Government intervention and its role in the policy creation will also be audited by looking into the activities of the Central Banks, Finance Ministries, and Securities and Exchange Commission of member countries. One of the things of success assessment is the presence of sustainable roadmap in the country as well as the shift in market design by introducing or enhancing existing policies in place.

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