

Green Finance in Hong Kong



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Abstract

Our goal was promoting green finance in Hong Kong by determining the reasons that investors do not buy more green investments and then finding ways to increase green investments. We accomplished this by interviewing green finance researchers and industry professionals, while sending a questionnaire to government agencies. From their responses, we recommend that the government advise companies to disclose information that investors are looking for, companies need to create more valuable green projects, green finance researchers and professionals should work with the government to create principles for environmental, social, and governance (ESG) rating agencies, and that the government work with finance professionals to educate the finance industry on the proper use of ESG scores.

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Executive Summary

In a world where climate change threatens the future, it is important to make more environmentally friendly choices. One way is by promoting green finance. Historically, financial institutions invest their assets to achieve maximum returns. Today's major asset managers could support businesses with good environmental policies rather than continuing to allow "dirty" businesses to succeed and pollute the planet. With its large asset management industry and reputation as a world class financial center, Hong Kong could become a regional leader in green finance.

Our goal is promoting green finance in Hong Kong. To achieve our goal, we outlined two main objectives we wanted to accomplish during our time in Hong Kong. First, we determined the specific barriers green finance faces in Hong Kong. Second, using this information, we will identify solutions that to help promote green finance in Hong Kong.

We used a variety of methods to achieve our objectives. To accomplish our first and second objectives we interviewed investment professionals to understand the limiting factors that investors face when trying to move capital into greener funds. Finally, from our findings we came up with recommendations to address the limiting factors on green finance.

Methodology

Friends of the Earth (HK) provided us with initial list of interviewees. We interviewed 3 researchers and 5 industry professionals and sent questionnaires to 5 offices of the Hong Kong Special Administrative Region Government. Of those questionnaires, we received 2 responses. We think this has given us a good understanding of each group's perceptions on green finance.

The questions for green finance researchers focused on double checking our understanding of investor motivations, regulations related to green finance implemented in Hong Kong, and environmental,

social, and governance (ESG) rating agencies. We also asked researchers if they had knowledge about any future green finance events that we could attend. The protocol for green finance industry professionals looks at understanding professionals' opinions and use of green finance instruments in Hong Kong. One of our goals throughout the interviews was to have the interviewee talk about key issues related to green finance that we may not have covered during our background research. This allowed us to create a better understanding of Hong Kong's green finance. Finally, our government questionnaire hopes to reveal how involved and informed the government is with green finance with respect to the key topics that the previous interviewees brought up.

Findings

Our most important results include that **Hong Kong's investors are missing clear incentives and regulations related to green finance.** Without clear incentives for green finance, Hong Kong's investors do not consider environmental impacts of their investments. This also affects ESG scores and turns them into a risk measuring and mitigation tool rather than an environmental impact tool. Furthermore, investors who consider ESG scores too heavily in their investment strategy tend to lose on returns because high ESG score companies do not guarantee higher returns. These lower returns create skeptics of green finance by causing a lack of understanding in ESG scores and how to use them.

There is a need for standardization of ESG information and green bond benchmarks in Hong Kong. Standardization of environmental, social, and governance disclosures would allow for direct comparison of the relevant scores regardless of the specific ESG rating agency. However, the rating agency's private methodologies are what distinguish them from their competitors, so they cannot disclose their rating methodologies freely for standardization. Furthermore, standardizing green bonds is a difficult task since it would involve defining "green," a term that can have various meanings depending on who says it, but there are basic actions being taken in Hong Kong as a first iteration to solve this.

Improving transparency leads to more accurate ESG and sustainability ratings as well as lower risk on investment. First, increasing transparency makes environmental practices more visible to the investors and the public. Second, the companies that are more transparent will be trusted more and will attract more business, encouraging others to follow suit. Transparency is important to the success of green finance in Hong Kong revolves around trust between the investor and who they invest in.

Lastly, we have found that multiple parties believe the responsibility lies outside of their own party. Corporate heads, the government, asset owners, and asset managers are all responsible for playing their part in supporting the green finance movement. Several interviewees believe that corporate heads, specifically CFO's, should lead the green finance movement by being more involved with allocating capital into financial and environmental risk management strategies. Others believe the government has the main role in being the regulator of green finance. Another portion of interviewees believe the market will resolve itself over time because people willing to invest in green projects will and if it is truly a main global concern, it will be addressed. One interviewee stated that there needs to be primary involvement from both the regulators and the asset owners. These results led us to believe that no party wants to take on the main leadership role in pushing green initiatives.

Recommendation

We produced recommendations based on the findings of our interviews and questionnaires. These suggestions finance professionals, researchers, and the Hong Kong government.

Recommendation 1: The government should give guidelines companies to help properly disclose information that investors are looking for.

The current method of producing an ESG score is time consuming and expensive. Companies need to be more transparent and educating the about transparency will lower the barrier for them to provide disclosures to ESG rating companies and investors.

Recommendation 2: The Hong Kong government and finance professionals should work together to educate the financial industry on the proper use of ESG to reduce misconceptions.

Simply screening companies using ESG scores is not a robust financial strategy and this could lead to the lower returns that investors are worried about. Investors should conduct further research about the companies they invest in and use ESG scores as part of a bigger financial strategy.

Recommendation 3: Green finance researchers and professionals should collaborate with the Hong Kong government to standardize ESGs in order to create guidelines that ESG rating agencies can base their methodologies on.

Standardization of environmental, social, and governance disclosures is important because it would streamline the disclosure collection and scoring processes. Standardization should also improve reliability and consistency of ESG scores.

Recommendation 4: Companies need to take initiative to create more valuable green projects that investors can put capital into.

Hong Kong faces an issue with finding bigger green projects to participate in, even though the government currently has incentives for them. Therefore, the push for larger green projects should come from the companies that produce them, which would lead to more capital being funneled into these green projects from investors.

Authorship

Below is a list detailing the primary contributors for the different sections of our reports. We would receive comments and revisions from our advisors through the Word comment feature. We divided the comments up evenly and would work through them separately asking each other for feedback along the way.

	Primary Author(s)
Abstract	PS
Acknowledgements	FB
Glossary of Terms	LS
Executive Summary	TW
Chapter 1: Introduction	FB
Chapter 2 Background	
2.1 Considering the Environment in Finance	FB
2.2 Green Finance Around the world	FB, LS, PS, TW
2.3 Investors and Asset Managers	FB, TW
2.4 Using Environmental, Social and Governance Scores	LS, PS
2.5 Green Equity	FB
2.6 Green Bonds	LS
2.7 Summary	FB, LS, PS, TW
Chapter 3 Methodology	
3.1 Understanding the Barriers to Green Finance	FB, LS, PS, TW
3.2 Promoting Green Finance in Hong Kong	FB
Chapter 4 Results	
4.1 Hong Kong Investors	FB
4.2 Standardization	PS
4.3 Transparency	TW
4.4 Leader of the Green Finance Initiatives	LS
Chapter 5 Conclusions and Recommendations	
5.1 Summary of Findings	FB, LS, PS, TW
5.2 Recommendations	FB, LS, PS, TW
5.3 Further Research and Limitations	FB
Appendix A - Sponsor Description: Friends of the Earth (HK)	PS
Appendix B - What is an IQP and How Does This Qualify as an IQP?	TW
Appendix C - Interview Protocol for Green Finance Researchers	TW
Appendix D – Interview Protocol for Investors and Asset Managers	LS

Table of Contents

Abstract.....	i
Acknowledgements.....	ii
Executive Summary.....	iii
Authorship	vii
Table of Contents.....	viii
Table of Figures.....	xi
Glossary of Terms.....	xii
Chapter 1 Introduction	1
Chapter 2 Background	4
2.1 Considering the Environment in Finance.....	4
2.1.1 Climate Change	4
2.1.2 Carbon Pricing Mitigation Strategy.....	6
2.1.3 What is Green Finance?	6
2.2 Green Finance Around the world.....	7
2.2.1 The United Kingdom	8
2.2.2 Switzerland.....	9
2.2.3 France.....	9
2.2.4 Divestment from Fossil Fuels	10
2.2.5 The Hong Kong Factor.....	10
2.3 Investors and Asset Managers.....	11
2.3.1 How Investments Work and Getting Investors Involved	11
2.3.2 Investor Motives	12
2.3.3 Family offices and Impact investing.....	12
2.4 Using Environmental, Social and Governance Scores.....	13
2.4.1 Measuring Externalities	13
2.4.2 Understanding ESG Scores.....	14
2.4.3 Thomson Reuters ESG Methodology	15
2.4.4 MSCI ESG Methodology	17
2.4.5 Sustainalytics Methodology Rating.....	19
2.5 Green Equity	19
2.5.1 Index Funds.....	20

2.5.2 Mutual Funds	20
2.5.3 Difference of returns.....	20
2.5.4 ESG rating issues	21
2.6 Green Bonds.....	21
2.6.1 What are Green Bonds.....	22
2.6.2 Greenwashing	22
2.7 Summary	23
Chapter 3 Methodology	25
3.1 Understanding the Barriers to Green Finance	25
3.1.1 Green Finance Researchers.....	25
3.1.2 Industry Professionals	26
3.1.3 The Government	27
3.1.4 Privacy Protocol	28
3.2 Promoting Green Finance in Hong Kong.....	29
3.2.1 Disclosing Environmental Related Info	29
3.2.2 Researching Incentives and Regulations for Hong Kong.....	29
Chapter 4 Results	31
4.1 Hong Kong Investors	31
4.1.1 Returns Vs. Social Benefits.....	31
4.1.2 Measuring and Mitigating Risk	32
4.1.3 Misuse of ESG Scores	33
4.1.4 Scalability of Green Bonds	34
4.2 Standardization	34
4.2.1 Bond Standardization.....	34
4.2.2 ESG Standardization.....	36
4.3 Transparency.....	36
4.3.1 Transparency Exposes Poor Environmental Practices	37
4.3.2 Transparency Lowers Risk and Cultivates Trust.....	37
4.3.3 Agencies have a Proprietary Right to their Methodologies.....	38
4.4 Leader of the Green Finance Initiatives	39
4.4.1 Business Head’s Leading the Charge.....	39
4.4.2 The Role of the Hong Kong Special Administrative Region (HKSAR) Government	39
4.4.3 Investors Driving the Market	41

4.4.4 Everyone Should Be Involved.....	41
Chapter 5: Conclusions and Recommendations	42
5.1 Summary of Findings.....	42
5.2 Recommendations	43
5.3 Further Research and Limitations.....	45
References	47
Appendix A - Sponsor Description: Friends of the Earth (HK)	52
Appendix B - What is an IQP and How Does This Qualify as an IQP?	54
Appendix C - Interview Protocol for Green Finance Researchers.....	55
Appendix D – Interview Protocol for Investors and Asset Managers	58
Appendix E – Questionnaire for Government Agencies	61

Table of Figures

Figure 1 Projected Impacts of Climate Change. Reprinted from Carbon Mitigation Strategies.....	5
Figure 2 Switzerland’s Growth in Green Finance.....	9
Figure 3 Thomson Reuters ESG Score and its Components.....	16
Figure 4 MSCI Risk Scoring Chart	17
Figure 5 MSCI Opportunities Scoring Chart	18

Glossary of Terms

**We retrieved all the definitions from dictionary.com unless noted otherwise.*

B

- Bond – a certificate issued by a government or public company promising to repay borrowed money at a fixed rate of interest at a specific time (see *Green Bonds* for more details)

C

- CSR – corporate societal responsibility. A self-regulating business model that helps a company be socially accountable on the impacts they have on the economy, society, and environment (Investopedia A, 2018)

E

- EPI – Environmental Performance Index. A type of method of quantifying and numerically marking the environmental performance of a state’s policies
- ESG – environmental, social, and governance (see section 2.4 for more details)
- Externality – a side effect or consequence of an industrial or commercial activity that affects other parties without being reflected in the cost of goods or services involved (see section 2.4.1 for more details)

F

- Green Finance Professionals – Broad term that includes any people involved at any financial level that work with investments

H

- HKMA – Hong Kong Monetary Authority. Hong Kong’s currency board and central bank.

G

- Green bonds – bonds that encourage sustainability to support climate related or other types of special environmental projects
- G20 (Group of 20) - an international forum for governments and central bank governors from 19 countries and the European Union

I

- Incentive – a payment or concession to stimulate greater output or investment

N

- Natural resource – materials or substances such as minerals, forests, water, and fertile land that occur in a nature and can be used for economic gain

P

- Pension – a regular payment made during a person’s retirement from an investment fund to which that person or their employer has contributed during their working life

S

- Sovereign wealth fund – a government-owned investment fund
- Sustainability – avoiding the depletion of natural resources in order to maintain ecological balance

T

- TCFD – Task Force on Climate related Financial Disclosures. The goal of the TCFD is to increase corporate transparency to make markets more efficient, and economies more stable and resilient (TCFD, 2018).

U

- United Nations Environmental Programme (UNEP) - a leading global environmental authority that sets the global environmental agenda, promotes sustainable development within the United Nations System, and serves as an authoritative advocate for the global environment (UN Environment, 2018)

Chapter 1 Introduction

Climate change is one of the greatest threats confronting humanity. Increasing in global average temperatures lead to more wildfires, higher intensity tropical storms, and increased chances of drought (Randal, 2018). Coastal properties around the United States risk inundation by the year 2045 (Union of Concerned Scientist, 2018). This spells disaster for cities like New York where they have a combined real estate market value of 800 billion US dollars (Bloomberg, 2008). To reduce the possibility of catastrophic weather events, like drought and flooding, the Paris Climate Accords set carbon reduction objectives to help prevent the global average temperature from increasing by 2 degrees Celsius from pre-industrial era temperatures (United Nations, 2018). Because of the Accords, members of the United Nations have set different programs and policies in place to promote greener technologies and reduce carbon footprints. The United States has a Green Solutions Communities program that helps consumers find affordable green alternatives for construction materials, clothing, and even entertainment (U.S. Communities, 2018). One solution that has been enacted throughout the world has been the implementation of green finance (Wilde, 2017).

Green finance is a broad term that involves the movement of capital from the public, private, and not-for-profit sectors to support sustainable initiatives (UN Environment, 2018). Green finance has been growing throughout the world in recent years, with European countries leading the way in environmentally conscious investing (Yale Center for Environmental Law & Policy, 2018). Hong Kong has shown initiative to support green finance this past year by funding HK\$100 billion in government bonds (Hong Kong Government, 2018b). While the bonds market has grown, the green equities sector has not yet seen much interest from investors. This is a shame, given that the Hong Kong Stock Exchange is in the top ten in the world in terms of market capitalization. Moreover, Hong Kong's financial relationship with China gives it a lot of influence (Hong Kong Government, 2018c). This is especially important since China

is one of the biggest producers of greenhouse gases worldwide (Hsiang & Kopp, 2018). Ideally, Hong Kong could take advantage of its unique position to become a regional leader in green finance (Fuhrmann, 2012). However, policy-makers in Hong Kong lack the knowledge they need to develop and implement policies that promote green finance in a variety of sectors, which would lead to an increase in green projects and reduction in carbon emissions.

Green finance is a complex subject, and there are factors that are helpful and others that work against promoting it. First, green finance does not have a universally accepted definition, perhaps because what it means depends largely on a country's financial and political agenda (Green Finance Study Group, 2018). As a result, investors and asset managers must develop their own defining characteristics for green investment, which adds research time and costs. Historically, green mutual funds in the United States have lower returns than typical mutual funds (Huang, 2006; Chang et al, 2012). However, instead of looking at investments purely from a profit-seeking standpoint, asset managers have seen more investments driven by social or moral beliefs from their investors (Lisanti, 2014). One fund manager said they had received instructions from 161 different clients to remove all fossil fuel investments from their portfolios (p. 91). Unfortunately, asset managers in Hong Kong do not have the systems in place to assess a company's environmental impact (BDO Limited, 2017). These issues collectively create barriers that are too numerous for green finance to succeed.

Several aspects related to green finance in Hong Kong are not very well understood. To begin, Hong Kong's Securities and Futures Commission is educating investors about green finance (Hong Kong Securities and Futures Commission, 2018), but it does not yet have the data it needs to assess the impact that education is having on asset managers since this is a new problem that they have only recently begun to look at. Furthermore, investors are increasingly interested in a variety of green investments (Lisanti, 2014), so asset managers are dealing with more diverse portfolios, but there is no source that lists the resources or tools that asset managers need to accommodate specific goals of an investor's portfolio.

Many of these research gaps are from a lack of information or transparency from the government and companies. Financial market policy regulators in Hong Kong are missing the qualitative data included in disclosure reports to create a basis for policies that could incentivize green finance.

Our goal is promoting green finance in Hong Kong. We must determine why Hong Kong has fallen behind its international peers in green finance and what can be done to help it catch up. To improve our understanding of green finance in Hong Kong, we interviewed professors from local universities. To understand the perspective of the investors and asset managers, we interviewed professionals in bond certification and sustainable investment. Finally, to further understand the government's participation in green finance, we contacted several government officials for their response to a questionnaire. These interview and questionnaires responses informed us of several barriers Hong Kong faces when trying to be a leader in green finance. Using the interview results and strategies implemented by other countries, we have highlighted promising solutions to overcome these barriers. We will report these barriers and solutions in the upcoming chapters to promote green finance in Hong Kong.

Chapter 2 Background

Here we describe green finance, the challenges it faces, and identify research gaps in the field. Green finance is an important strategy worth promoting in Hong Kong. To give context to why green finance is relevant, we discuss the effects of climate change. We then explore green organizations that work to promote green finance. Then we describe the current method of environmental impact measurement. We investigate some common barriers to green finance, determine who they affect, and how they are created. Finally, in the summary, we describe the research gaps that we found through our literature review.

2.1 Considering the Environment in Finance

In this section, we define the relationships between the environment and green finance. First, we briefly describe climate change. We then explain what green finance is and why the world would benefit from the growth of green finance. Finally, we provide examples of how organizations and governments work to promote green finance.

2.1.1 Climate Change

There are many threatening statistics that describe the magnitude of climate change and the risks of allowing it to continue. In 2014, the United States and China produced 45% of the world's carbon emissions totaling in 15.6 Gigatons of carbon dioxide. Increased carbon emissions from humans cause significant issues around the world (Pachauri & Meyer, 2014). Every 1% increase in global atmospheric carbon dioxide traps heat energy equivalent to "one Hiroshima-scale atomic bomb spread over the surface of the Earth every 2.3 seconds" (Hsiang, & Kopp, 2018, p. 4). Besides heating the planet, all this energy increases the chance of extreme weather events. A staggering 20 million people were displaced due to weather events in 2008 (IOM, 2015). Simulations show that by 2030, New York's chance of flooding will be five times higher than in the past 30 years (Garner, 2017). This threatens 800 billion US dollars of

real estate in New York (Bloomberg, 2008). If people around the world do not strategically reduce carbon emissions in the 21st century, there will be irreversible global consequences (Pachauri & Meyer, 2014). Figure 1 shows some effects of every degree of temperature rise above pre-industrial levels on our environment.

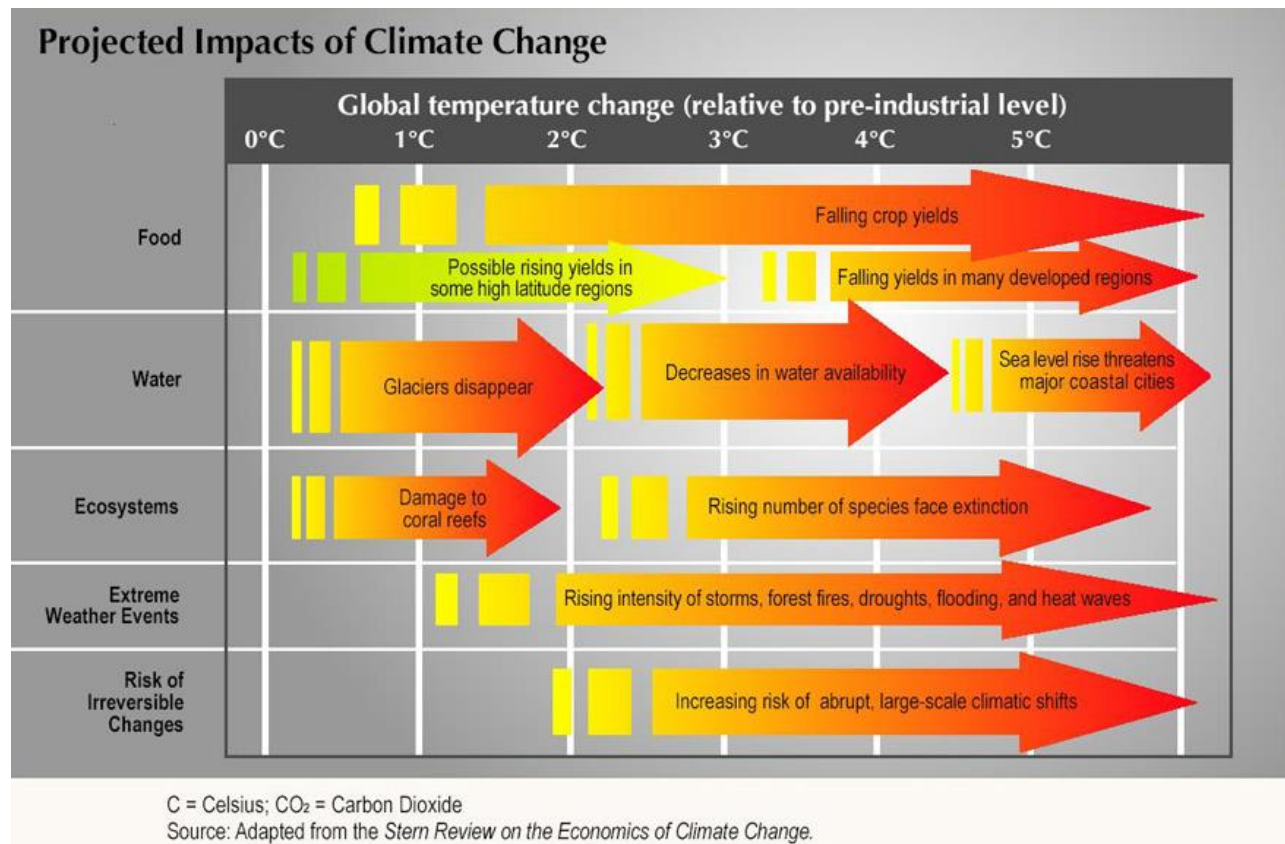


Figure 1 Projected Impacts of Climate Change. Reprinted from Carbon Mitigation Strategies

Stern, N. (2006). *Projected impacts of climate change* Retrieved December 17, 2018, from

https://www.bigskyco2.org/climate_mitigation

The Intergovernmental Panel on Climate Change mentions that substantial reduction in greenhouse emissions is highly linked to greener investment (Pachauri & Meyer, 2014). To maintain the global temperature within 2°C of pre-industrial era temperature, there needs to be several hundred billion US dollars in investment for lower carbon electricity production and energy efficiency.

2.1.2 Carbon Pricing Mitigation Strategy

To tackle the growing issue of climate change, governments came together in 2016 to sign the Paris climate accords (United Nations Climate Change, 2018). As of December 2018, 184 countries had ratified the document, committing themselves to limiting their carbon emissions with hopes of reducing the increase in global temperature. Apart from carbon emission goals, the Paris Agreement also set up guidelines and procedures for nations to be transparent and measure their progress of reaching those carbon goals.

One possible mitigation strategy for climate change is carbon pricing, which has had varied success (Pachauri & Meyer, 2014). In the past, researchers have claimed that greenhouse gas emissions are a necessary evil correlated with GDP growth. However, “In some countries, tax-based policies specifically aimed at reducing [greenhouse gas] emissions—alongside technology and other policies—have helped to weaken the link between GHG emissions and GDP.” (p. 30). In fact, the World Resource Institute has shown 21 countries, including the US and UK, which have increased GDP between 2000 and 2014, yet simultaneously decreased GHG emissions (Aden, 2016). Endre Tvinnereim and Michael Mehling (2018) show that while carbon pricing can be the most cost-effective approach to reducing these emissions, keeping up with the goals of the Paris Agreement requires a multifaceted approach.

2.1.3 What is Green Finance?

The term “green,” when used in the context of investment generally pertains to investing in activities that are good for the environment (Chen, 2018c, para. 3). The line between “green” and “ungreen” practices varies and is partially speculative, meaning it is determined by the investor. For example, an investor can speculate that the oil company with the best record for environmental practices is green. Others may disagree because burning fossil fuels remains the leading contributor to global warming.

There is no single definition for green finance. As defined by the G20 Green Study Group (2016), “green finance can be interpreted as the financing of investments that provide environmental benefits in the broader context of environmentally sustainable development” (p. 5). The Green Finance Study Group, now known as the Sustainable Finance Study Group (2018), works under the G20 to “investigate possibilities to encourage private investors to increase green investments” (para. 1). The UN Environment Programme (2018) defines green finance as increasing the levels of financial flows (from banking, micro-credit, insurance and investment) from the public, private and not-for-profit sectors to sustainable development priorities. This agency, created by the United Nations, is the leading global environmental authority that promotes sustainable development and supports the global environment.

Part of what drives green finance is externalities. An externality is a term used to define something a third-party either benefits or suffers from as a result of an economic transaction (Economics Online, 2018). The manufacture and sale of an automobile creates a negative externality for the environment. The car manufacturer charges the consumer for the time and materials to manufacture the car. Yet neither the manufacturer nor the consumer compensates the environment or society for the harmful byproducts the car emits. To promote sustainable development, investors and governments need to hold these companies (and perhaps consumers) accountable for their negative environmental externalities (Rayamajhee & Joshi, 2018). Investors can leverage large amounts of capital for the support of greener investments, or insist on reduction of externalities, which is the foundation of the green finance movement.

2.2 Green Finance Around the world

Hong Kong is among the leaders of international finance according to the Global Finance Centers Index. However, many countries outperform Hong Kong in the Global Green Finance Index 2, in which it is ranked outside the top 35 in both green investment depth and quality (Wardle et al, 2018). Respectively, these terms refer to the “progress away from unsustainable activities” and the “robustness of green

labelling and standards” (p. 11). The strategies for green finance engagement within the top 35 countries offer insight into possible improvement strategies for Hong Kong. Considering Hong Kong’s free-market ideals is also important and will influence the feasibility of implementing these improvement strategies in Hong Kong. This section will discuss green finance in the UK, Switzerland, France, and the local factors specific to Hong Kong.

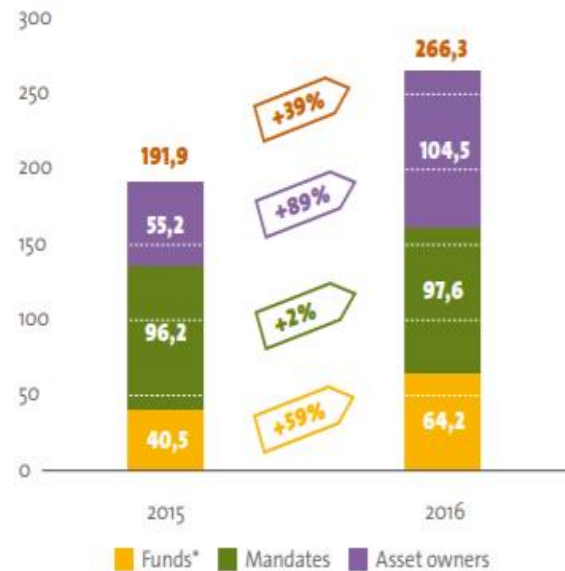
2.2.1 The United Kingdom

Macquarie Group, an Australian based investment bank, and the UK’s Green Investment Bank have invested over £15 billion in renewable technologies (Macquaire, 2017). Clearly, the market expects green investments to become mainstream. A study of 1200 UK investors showed that 38% expected sustainable investments to outperform traditional investments in the future. The United Kingdom also became the first government to start an entirely green bank (Green Investment Group, 2018). It was established by the government to set an example by investing in green infrastructure projects like renewable energy. The Bank was created with a “double bottom line” approach; to have positive environmental impact and create real financial returns (Department for Business Innovation and Skills, 2012). The bank is now privately owned and is well on its way of reaching its goal of investing 3 billion US dollars over 3 years.

2.2.2 Switzerland

According to the Environmental Performance Index (EPI), the United Kingdom is ranked 6th in policies that are effective in promoting sustainable development (Yale Center for Environmental Law & Policy, 2018). Switzerland is ranked 1st overall in EPI results. Swiss sustainable investment funds increased by 59% in 2015, as seen in Figure 2 (Dittrich et al, 2017).

During the same time period, the assets in green funds managed by asset owners increased by 89%. Engagement and voting are both common methods for Switzerland's shareholders to inform companies about environmental impact. Shareholders engage companies in discussion about corporate governance, climate change, and corporate ethics. Shareholders' ability to discuss and vote on decisions ensures them the opportunity to be heard on the environmental impacts that they care about most. Around 85% of all Swiss funds



* The fund figure for 2015 also includes other financial products
Source: Forum Nachhaltige Geldanlagen, Swiss Sustainable Finance

Figure 2 Switzerland's Growth in Green Finance

integrate Environmental, Social, and Governance (ESG) scores into their financial analysis. Switzerland attributes their finance market's growth in sustainable development to the use of ESG scores, short for environmental, social, governance, as explained in section 2.4 of this report.

2.2.3 France

France, which is 2nd on the EPI rankings (Yale Center for Environmental Law & Policy, 2018) has grown green finance through its green bond market which was third in green bond issuance in 2017 behind the United States and China (Frandon-Martinez, 2018). Issuance of these bonds in France only began in 2012, and they have been used to fund green projects such as green buildings, low carbon transport systems, and renewable energy. As France grew to become a leader among global green bond issuers, they have supported market transparency by having "high standards of disclosure in annual green

bond reports” (para. 3). These disclosures have helped push the success of the green bond market in France by leading to a greater volume and clarity of external reviews.

2.2.4 Divestment from Fossil Fuels

Sovereign wealth funds and pension funds are among the leading sources of divestment from the fossil fuel industry around the world (Devlin et al., 2018). Ireland is the first country in the world to commit to completely divesting its sovereign wealth fund, worth approximately US\$10.4 billion, from fossil fuel investments. Norway, the owner of the single largest sovereign wealth fund, divested from coal in 2015 and is considering doing the same with its international oil investments. Large cities around the world are setting an example by divesting from fossil fuel consumption companies. New York pledges to divest its \$189 billion pension fund including \$5 billion from fossil fuel investments. If London finalizes its plan to completely divest, it will be larger than any other city in the world to do so. Others include Berlin, Paris, Copenhagen, Dunedin, and Sydney.

2.2.5 The Hong Kong Factor

Hong Kong is unique in several ways. Most notably, the Index of Economic Freedom has rated Hong Kong as the freest market for 24 consecutive years (Chan, 2018). The government is keen to maintain this status. However, this simultaneously restricts the hand of government in issues such as engaging investors in green finance. In a free-market economy, it is important to allow market participants to make decisions out of their own necessity rather than to impose strict regulations.

An additional factor specific to Hong Kong is the population of private wealth owners. Of all assets under management, 32 percent belongs to private investors (Private Wealth Management Association, 2018). Furthermore, there are indications such as advancements in technology and talent portraying that growth is very likely in the next few years. The goal of groups such as the Sustainable Finance Initiative, through community engagement, is to encourage the sustainable investment of this private wealth (2018). Hong Kong’s large proportion of the assets under management in private wealth differentiates it

from countries such as Canada, Australia, Switzerland, the Netherlands, the UK, and the US who have much lower proportions in private wealth. With respect to pension funds, Hong Kong's ratio of assets in pension funds to GDP is just 49% (Thinking Ahead Institute, 2018). The global average is 67% and all the countries listed above exceed 100%.

2.3 Investors and Asset Managers

In this section, we will discuss the investors' decisions to invest in certain companies, as well as different types of investments. We will also explore the motivations of investors when making such decisions.

2.3.1 How Investments Work and Getting Investors Involved

Investors purchase assets expecting to sell them for a profit in the future (Chen, 2018e, para. 1). If the asset is profitable, there is a symbiotic relationship between the investor and the business they invested in. The investor earns the profits from the asset and the business uses the extra capital to run their operations (Ross, 2018). An investment in a company supports the company to maintain the status quo or even provides funds for growth. Therefore, investing in a green business can help it succeed.

Investors hire asset managers who can use investors' money to buy equity in different companies (Chen, 2018b). Asset managers are usually more knowledgeable than investors and buy equity in a company if they predict the equity will gain value. Asset managers have a duty to their clients to both make profits and consider the client's preferences for industries and types of companies to invest in. Investors should generally understand the implications their investments have in the world we live in, meaning that they should be aware of the target industry's effects on the environment. The key to getting the asset managers to focus on greener topics involves understanding what the investor wants to see from a specific company (Dyduch & Krasodomska, 2017).

2.3.2 Investor Motives

Investors are not only motivated by financial aspects of greener investments. There are a variety of motivating factors (Inderst, Kaminker & Stewart, 2012). Some institutional investors use green investments to improve their institution's public image. Government regulated fiduciary responsibility drives some investors with mandated environmental, social and governance (ESG) or corporate social responsibility (CSR) goals. These regulations could interfere with a traditional asset manager's fiduciary duty. For example, if governments require that a minimum percentage of pension funds be invested in green finance, then a fund manager is forced to put capital in specific equities even if their fiduciary duty is simply to maximize returns.

2.3.3 Family offices and Impact investing

In the Asia Pacific region, the concentration of the world's wealthiest people is increasing, with more than 38 percent of billionaires residing there (Gilchrist, 2018). The recent trend among ultra-wealthy individuals and families is to establish a family office, or a private firm to manage their investments. These private firms give the families the freedom to choose how their money is invested. This is especially important to some who specifically wish to engage in socially responsible investing or impact investing (Chen 2018d).

Impact investing is a subset of socially responsible investing, in which investors create a positive impact on the environment or society through their investments and avoid investments leading to negative effects. An investor that uses impact investing heavily focuses on corporate social responsibility and their "sense of duty to positively serve society as a whole" (para. 3). The social benefits of an impact investment do not necessarily negatively affect their returns. A 2018 study found that "over 90% of impact investors reported that their investments were meeting or surpassing their projections" (para 5). Although this could be from setting a lower target on projected returns, investors go into impact investment

focusing on the social benefits as a bottom line, but they are flexible when it comes to seeing the financial returns of an investment.

2.4 Using Environmental, Social and Governance Scores

To show whether a company or stock is actually “green,” there needs to be a way to evaluate which companies operate in sustainable manner. For this reason, ESG scores indicate to what extent a company engages in good environmental, social and governance practices. Investors looking to get into impact or sustainable investing might rely on this information, because they want to invest in companies that limit negative externalities.

2.4.1 Measuring Externalities

As we mentioned earlier, the externalities of fossil fuel companies have damaging effects on third parties (DeNyse, 2000). Investors should be aware of this because of the threat to profits (Caplinger, 2007). If the externality is large enough, the government may feel obligated to step in and impose new regulations. Regulations such as these limit company profits, and even lead to losses. This means that investors need to be aware of the externalities a company creates, otherwise they will expose themselves to high risk, including losing their money because they overlooked the possibility of costly regulations.

The externalities themselves can be measured in different ways (Blokhin, 2018). The first is using quantitative methods to estimate the value of an externality, such as estimating the cost of damages, or the cost of controlling that externality in order to avoid the damages. The problem with this method is that there are no data on the exact numbers used for estimating costs, so the value obtained is just a guess. The second method is using qualitative observations to show the severity of the externalities, which are subjective based on the person doing the inspection and can vary from observer to observer. There are hybrid methods in that integrate these two types of methods that involve assigning “weights and ranks to externalities to evaluate their impacts” (para. 9). While inheriting the advantages of the methods they

combine, they also take on some disadvantages. This is where ESG scores play a crucial part in simplifying qualitative data into a single score.

2.4.2 Understanding ESG Scores

Investors can take a company's Environmental, Social, and Governance (ESG) score into account when evaluating if they want to invest in a company (Chen, 2018a). An ESG score that analyzes how a company performs is based on specific criteria determined by the ESG standards. These standards are speculative, so it needs to be clear what is acceptable as criteria for the ESG.

Companies that want to have their ESG rating assessed approach a third-party agency like MSCI, Sustainalytics, or Thomson Reuters. Each rating agency has its own methodology and approach to rate companies. ESG rating agencies use a variety of data from each company to create an ESG rating. In the following section, we cover the rating methodologies of the some of the biggest ESG scoring agencies. This provides a basis for understanding the criteria for ESG's scores so we can compare the varying definitions to each other. From the criteria, we can find aspects of ESG's investors think are most crucial, which will help determine a direction for ESG improvement.

The concern with these ESG's scores is the extent to which investors and asset managers use them. As of 2017, BDO Limited (HK), a service firm part of BDO International Limited, conducted a survey on 300 firms that were randomly chosen off the Hong Kong main board's list of firms to report their ESG performance (NG, 2017). Of the respondent firms, over 80 percent said that they do not have an in-depth strategy or dedicated ESG committee. From the environmental data provided by these firms, only 30 percent of them provided their data on greenhouse gas emission reductions, and only 27 percent disclosed occupational health and safety data. In addition to the lack of data on the environmental portion of ESG reports, the PriceWaterhouseCoopers (2016) service firm polled a variety of U.S. corporations and investors of which only twenty-nine percent of investors are confident in the quality of ESG information

they receive from companies. Although there is no specific data on the confidence of Hong Kong specific investors, we can see that generally investors are skeptical in using these reports to help with their investments.

ESGs and CSRs can be used by investors to decide if they want to invest in a company, but their measures are too subjective to be used legitimately (Doyle, 2018). This means that one company might have a completely different score between multiple rating agencies. There are inconsistencies between different ratings agencies, including different “methodologies, metrics, weighting, and even definitions of what constitutes ESG” (para. 3), which makes it difficult to standardize and decide if investors should trust these reports. An example of these inconsistencies is when the agency RepRisk rated Bank of America “below average,” while Sustainalytics gave them a “well above average” rating (para. 4). Furthermore, both agencies said they used the same factors in their ratings, which shows that the subjectivity of the process is an inherent problem with these types of ratings.

2.4.3 Thomson Reuters ESG Methodology

The Thomson Reuters Business Classification Industry group (TRBC) calculates environmental ratings by weighing the resource usage, emissions, and innovation of a given company. These weight percentages are then added together to calculate the pillar weight, which is the overall score of the environmental section (see Figure 3).



Figure 3 Thomson Reuters ESG Score and its Components.

Thomson Reuters. (2018). *Thomson Reuters ESG Scores*. Thomson Reuters Eikon. Retrieved from <https://www.refinitiv.com/content/dam/gl/en/documents/methodology/esg-scores-methodology.pdf>

The environmental criteria are based on a company’s energy usage, waste pollution, natural resource conservation and animal treatment (Thomson Reuters Eikon, 2018). Each company’s ESG score is the sum of three main categories; environmental, governance, and social. These scores can then be put into a percentile to be compared to all other companies in the same pillar/section. It is important to note that even though the overall ESG score affects investment rates, for the purpose of this project we will be focusing primarily on the environmental scores. For clarity, Thomson Reuters defines the resource use category as a company’s ability to use fewer materials, such as water and energy, and to find more eco-friendly solutions, while the emission score “measures a company’s commitment and effectiveness towards reducing environmental emission in the production and operational processes” (p. 16). Finally, the innovation score is based on how a company reduces the environmental costs on its customers by creating new technologies, processes, or products that are less harmful to the environment.

2.4.4 MSCI ESG Methodology

MSCI uses 37 key ESG issues to focus on 10 specific themes. The environmental themes include climate change, natural resources, pollution & waste, and environmental opportunities. MSCI collects relevant ESG information from a variety of sources like government databases and company disclosures.

Out of 37 key issues that MSCI considers, 13 of them are related specifically to the environment. The issues can be labeled as risks or opportunities. Risks are first weighted based on the company's level of impact on the issue over the long and short term. This allows an issue to be 5-30% of the environmental score and measure whether the impact is negative or positive. The issue is then scored based on risk exposure and risk management. By highlighting the risk or externality rating of a company, potential investors can plan for the unexpected negative externality costs in the long run. Figure 4 below shows how both exposure and management lead to different key issues score.

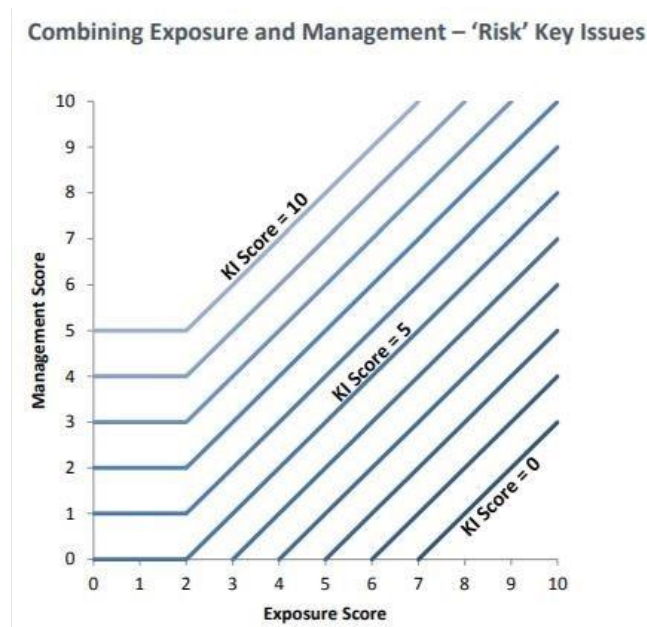


Figure 4 MSCI Risk Scoring Chart

MSCI Inc. (2018). Combining Exposure and Management – ‘Risk’ Key Issues [Digital image]. Retrieved January 23, 2019, from <https://www.msci.com/documents/10199/123a2b2b-1395-4aa2-a121-ea14de6d708a>

Opportunities measure a company’s ability to participate in green initiatives such as renewable energy, green buildings, and green technology. This rating helps to predict which ESG issues may turn into profitable opportunities for the company in the long run. Like risks, the rating agency measures opportunities by looking at a company’s exposure and management of the opportunity. Exposure, which is also scored by the rating agency, is based on a company’s geographical location and the business sectors it is part of. Agencies score management on how the company capitalizes off the opportunity. While it is like the risk score, the opportunity exposure and opportunity management scores are combined differently. Figure 5 below shows that while a company can have a low exposure to opportunity, through good management it can have a high opportunity score. Interestingly, a company with a high exposure but bad management is rated worse compared to a company with poor exposure and poor management.

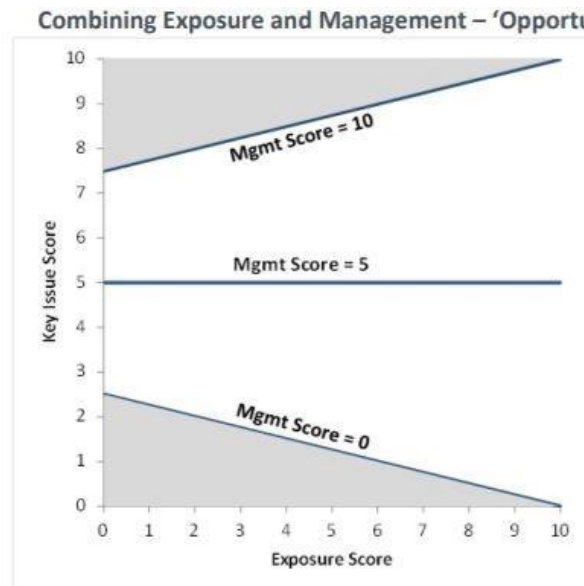


Figure 5 MSCI Opportunities Scoring Chart

MSCI Inc. (2018). Combining Exposure and Management – ‘Risk’ Key Issues [Digital image]. Retrieved January 23, 2019, from <https://www.msci.com/documents/10199/123a2b2b-1395-4aa2-a121-ea14de6d708a>

2.4.5 Sustainalytics Methodology Rating

Sustainalytics's methodology lists several separate steps that determine the overall risk of a company. The first element that Sustainalytics analyzes is a company's exposure, which like MSCI, refers to what sector or subindustry of the market this company falls into. Exposure denotes the vulnerability of a company to ESG risks (Sustainalytics, 2018). The next evaluating factor is how the company manages preventing negative environmental impacts. If the business model of a company deems something to be harmful to the environment (i.e.: oil companies, cigarette companies, etc.), Sustainalytics scores the company as "unmanageable" in this section. Controversies within a company also lower the overall management score because it shows how there is not enough effort or motivation put into making effective policies that prevent these controversies from happening. This agency calculates the final rating by adding the unmanaged risks of each ESG issue category. These categories include governance, business ethics, human capital, data privacy, carbon, and product governance. The carbon section, which is the most relevant to green projects, is broken down into subcategories of greenhouse gas reductions, environmental policies, greenhouse gas risk management, renewable energy programs and usage, etc. Each subcategory rates a business as follows; negligible, low, medium, high, and severe. Adding these ratings together gives the overall risk score. Comparing the different companies to each other provides a percentile or ranking of which company has the lowest risk.

2.5 Green Equity

A green fund has a set methodology which only allows companies which have a positive impact on the environment to be invested in. Measuring and understanding the environmental impact of a given company is covered in section 3. This section explains how investors and asset managers build and use green equity within their investment portfolios. We will also cover some key issues that investors and asset managers face when dealing with green equity investments

2.5.1 Index Funds

Green Index funds use market indices to create an investment scheme. Each index has its own methodology that sets guidelines for choosing companies. Investors have many options when deciding to invest in a given index fund. The S&P 500 Environmental & Socially Responsible Index collects companies from the S&P 500 index that also have a high environmental and social score (S&P Global, 2018). This E&S score is measured by the agency RobecoSAM. In Asia the Hang Seng Bank offers the Hang Seng Corporate Responsibility Index which uses the Hong Kong Quality Assurance Association to verify that the companies listed are green.

2.5.2 Mutual Funds

Much like green index funds, green mutual funds are grouped in a portfolio that consist of a list of companies that are being invested in. The difference is that a mutual fund is actively managed by a fund manager whose goal is achieving returns for their clients. These funds have various methodologies to select companies in which to invest.

As of 2017 the number of U.S. funds matched the amount of listed companies (Callum, 2018). With so many different funds each having their own methodology to screen companies it can be difficult for investors to find green mutual funds. Morningstar provides a sustainability rating for individual funds (Hale, 2017), which is different from ESG ratings that look at individual companies. We will focus on ESG ratings of individual companies with a specific focus to understanding what investors and fund managers look for.

2.5.3 Difference of returns

Returns on green mutual funds are generally lower than normal investments. According to Morningstar categories, green mutual funds have had significantly lower returns than the category averages over the five-year period between 2006 to 2011 (2.22 percent vs 3.45 percent). Furthermore,

the ten-year period between 2001 and 2011 showed an average of 3.92 percent average returns for green mutual funds versus a 5.10 percent average return for the traditional mutual funds (Chang et al., 2012, p. 700). If the goal of investors is to make the largest profit possible, they may be hesitant when considering investing in green mutual funds. In addition to lower returns on average, green mutual funds tend to have higher expense ratios (1.40 percent vs 1.30 percent). Higher expense ratios compounded annually lead to a larger long-term amount of expenses paid on green funds than the cost of expenses on average mutual funds. In addition to higher expense ratios, green mutual funds have lower risk-adjusted returns, meaning that the amount of risk the investor takes to the potential profit is high. Due to the combination of lower annual returns, higher expense ratios, and lower risk-adjusted returns the conventional mutual fund is generally more attractive to the investor than green mutual funds.

2.5.4 ESG rating issues

Many of these funds rely on some sort of environmental impact measurement for each company. This allows an index or mutual fund to set criteria for the companies that will be invested in. There is a huge variety of agencies that set ESG rating standards (Novethic Research, 2013). Each agency has its own methodology and market focus. It can be cumbersome for investors and asset managers to understand every agencies methodology and draw useful insights from them (Merker, 2018). On top of this, companies' ESG score varies by agency which does not support the argument that high ESG score companies tend to outperform lower ESG rated companies.

2.6 Green Bonds

Green bonds are one of the most vital ways of promoting green finance. In this section, we will cover how green bonds work and the “greenwashing” of green bonds.

2.6.1 What are Green Bonds

Bonds are instruments used to lend money to a borrower. In most cases, the borrower is either a company or government (Chen A, 2019). The lender or investor lends money with a fixed interest rate, to which the borrower must pay off the loan by the due date. Green bonds differ from regular bonds because they are used solely to promote sustainable projects. These types of bonds come with tax benefits that regular bonds do not offer. Green bonds are mainly issued to incentivize focusing on climate change and other green projects.

In 2018, Hong Kong issued HK\$100 billion in green bonds which is the largest sovereign green bond issuance program in the world (Yiu, 2018). The goal of these governmental issuances is to attract investors from around the world and set a benchmark for determining the yields of private-sector bonds (HKMA, 2018).

2.6.2 Greenwashing

Greenwashing is the process of falsely labeling something as environmentally friendly or 'green' to raise capital. This is especially dangerous when companies label bonds green simply as a selling point (Bond, 2012). Companies can make very vague statements or simply mention possible future green projects without having implementation in mind at all. For example, China currently has 'green' bonds that support clean coal which is about burning coal more efficiently (Matsuzaki, 2018). But, because of their relationship with coal, these kinds of bonds do not meet international green standards. On the other hand, too many checks on green bonds can hurt them by slowing down their issuance and stunting growth.

The Hong Kong Quality Assurance Agency has created a green certification scheme for bonds (HKQAA, 2017). The goal is properly determining that companies issuing green bonds have a proper green framework in place to commit the capital of their bonds towards green projects. The certification

is separated into two parts. The pre-certification section makes sure that the green project associated with the bond is feasible. The post-certification is done routinely by HKQAA to make sure that the company keeps its promise to maintain the capital within the green project.

2.7 Summary

Green investments need to be made competitive through social or financial benefits for green finance to take-off as mainstream. Therefore, understanding how much investors value social or financial benefits is key.

Part of what prevents investors from holding green mutual funds is that the annual return rate on average is lower than normal mutual funds' return rates (Chang et al., 2012). Research has yet to be conducted to determine how to handle the tradeoff between green finance and more profitable investments. In order to balance the tradeoff of lower profits, high expense ratios, and lower risk-adjusted returns, there needs to be a solution that provides some compensation such as a tax incentive or social benefits.

Understanding how investors perceive and value ESG scores is also important. Since ESG score criteria can be subjective, investors must do research to find investments that match their own values (Chen, 2018a). This subjectivity leads to skepticism about ESG scores. Unfortunately, ESG scores are one of the only ways currently used by investors to measure a company's environmental impact. Ultimately, there is no information on asset managers' overall perceptions of ESG reports they are given and how many asset managers use them in Hong Kong. Furthermore, it is not clear how much influence the environmental rating alone has on an asset manager's or investor's decision-making process.

In conclusion, with the need for action due to climate change's effects on the planet, investors from countries around the world have already turned to investing in green finance to promote sustainability and reduce carbon emissions. In fact, many of these green investments have proven

successful, but they are lacking in Hong Kong. In the next chapter, we will discuss our methodology for finding information that can help promote green finance in Hong Kong.

Chapter 3 Methodology

Our goal was identifying recommendations that can promote green investment in Hong Kong. Our specific objectives for meeting this goal were to:

1. Determine the reasons that investors do not buy more green investments.
2. Identify ways to facilitate the growth of green investments in Hong Kong.

3.1 Understanding the Barriers to Green Finance

In this section, we describe the process that we used to identify the barriers to investment in green finance in Hong Kong. Friends of the Earth (HK) gave us our initial contacts. We separated them into three groups: green finance researchers, industry professionals, and the government. We conducted interviews and using a snowball approach by asking our interviewees for more contacts to increase our sample size. In the end, we were only able to interview three researchers and five industry professionals due to people's busy schedules. The following sections explain in detail our interview protocols, which can be found in appendices C, D, and E.

3.1.1 Green Finance Researchers

The interview protocol for green finance researchers can be found in appendix C. The first set of questions gathers information about investor and asset manager motivations. We wanted to confirm that economic and social benefits were the main motivators of investments like our background research showed. We also asked whether the researcher thinks that social benefits can outweigh the lower average annualized returns of a green mutual funds. This would tell us whether we needed to focus on promoting the social benefits of an investment or work to find a tax incentive that will make up for the lower returns. This would be crucial in helping make green finance more mainstream.

The next set of questions helped us understand Hong Kong's current relationship with green finance. Questioning researchers about recent green finance events going on in Hong Kong helped us understand how much work was done in Hong Kong regarding this topic. We were also interested in any laws or regulations that may be affecting green investment and understanding how these laws may affect investors and asset managers. Researching these laws and regulations would help us build further questions that target specific barriers that investors and asset managers face when investing.

The questions in set three target ESG research and issues that investors and asset managers face. Our research shows that investors and asset managers can be skeptical about ESG scores when using them as a criterion to invest in greener initiatives. This could be because every ESG agency has its own methodology. We asked professors if standardization of ESG scores could help make them more reliable for investors. We also asked professors if there are any issues with disclosures provided by companies. This would show us if investors are skeptical about ESG agencies' methodologies or information provided by companies. The last question was meant to reveal any other issues with ESG scores that we may not have covered.

3.1.2 Industry Professionals

The interview protocol we used to talk to industry professionals is in appendix D. To make a sound investment, investors want to be shown that they will profit in the future by purchasing the investment. We hope that this profit can come from societal benefits or private, monetary ones. Our first set of questions helps us understand how much investors and asset managers value economic returns compared to the social benefits of an investment. For example, investors might care mainly about social benefits, but asset managers try to maximize returns. This would show that asset managers might incorrectly assume that financial returns are the top priority of the investor. Furthermore, an

asset manager might invest in green initiatives prioritizing returns without considering the specific social benefits that the investor is looking for.

The second set of questions asks the investor or asset manager about their opinions on the thoughts of ESG scores and any issues they face when using them. These questions should tell us what information investors want to obtain from the scores. Their answers will help us create suggestions for ESG scores to become more representative of the social and moral viewpoints that investors are looking for. This will hopefully encourage investors that want to have their social values represented in their portfolios by making it easier to find socially responsible investments based on ESG scores. Uncovering social benefits not brought about by ESG scores allows us to highlight specific social benefits that should be marketed when selling the investment.

Finally, the last section of questions asks the investor or asset manager who they think should lead the push for green finance in Hong Kong. These responses show which party is believed to take the initiative in carrying out green agendas. We are aware that these include responses from parties such as professors, investors, asset managers, and the government, who all have different limits to their authority, which is important to note when making recommendations. We also ask whether any laws or regulations limit green finance so that we can understand the role that the government plays in Hong Kong. This will give us laws and regulations that the government should look to for a replacement or amendment.

3.1.3 The Government

The government has the potential to hold a lot of power in finance and can pass regulations and create incentives for companies to have greener business practices. The first question of our questionnaire located in appendix E, asked if the government sees it as their duty to promote green finance. This question would let us know if they think green finance is an issue the government should be involved in. If they prefer the market to regulate itself to greener motives, then the government will not

get directly involved with imposing regulations. This relates to the second question, which asked if there are any current laws or incentives promoting green finance. Learning this information would give us an idea of how active the government is in promoting green finance. If no such laws exist, then the government may want to propose ideas to increase their involvement. If they already have laws proposing incentives that are not effective, changing or replacing those laws may be necessary.

To further determine the areas of the government that can be improved in promoting green finance, our third question asked if there is a government office dedicated to green finance. Like with the topics of our previous questions, the problem may lie in how the government handles the task of improving the position of green finance in Hong Kong, or they may need to assign the issue to a specific office in the government if they do not do this currently. In order to evaluate a possible solution to increase government involvement, we asked if the government has considered establishing a standard for pension fund green investment or enforcing corporate transparency.

3.1.4 Privacy Protocol

When conducting interviews and questionnaires, professors, investors, asset managers, and government officials may have wanted to remain anonymous. For example, an investor may not want the public to know exactly what they are working on, what they are investing in, and other details of their work. To mitigate these issues, we asked interviewees if there is anything, they would like us to omit from the record of our interview. We said that we could also omit their name when referring to information they gave us in our report so that it cannot be attributed to them. When initially contacting people for interviews, we get consent for the interview, and let them know that we will use the information from this interview for our project on determining how to implement green finance in Hong Kong.

3.2 Promoting Green Finance in Hong Kong

In this section, we describe how we determined the best strategies to overcome the barriers to green finance in Hong Kong. This includes reviewing the strategies of other countries according to our interview responses and understanding how the Hong Kong financial sector can consider the environment.

3.2.1 Disclosing Environmental Related Info

Recall from our background chapter that rating companies such as Sustainalytics, Thompson Reuters, MSCI, and many more calculate ESG scores from a company's disclosure reports. Our project required us to determine if ESG reports provide enough environmental information. Question set two of our interview protocols for investors and asset managers discusses ESGs. We wanted to know if investors and asset managers are satisfied with the quality of the disclosures they receive from companies. If skepticism on the accuracy of ESG information was a common theme from our interviews, we could suggest that policymakers be more involved in regulating the information. Also, we wanted to know how the disclosure rates of companies in Hong Kong compare to other markets around the world. A low disclosure rate in Hong Kong may reveal that companies need to improve their disclosures to help investors make decisions. Along these same lines, we needed to know if the current disclosures are enough to assess a company's environmental impact.

3.2.2 Researching Incentives and Regulations for Hong Kong

In order to promote green investment, we used the solutions of other countries that we discussed in our background and looked at how they can be applied in Hong Kong. We know that regulations and incentive strategies vary globally, so our goal was finding other methods from other countries that could be adapted specifically to Hong Kong. After interviewing multiple investors and asset managers, we know that the government should get more involved in the green sector.

We organized the information we have gathered in the results chapter and analyzed what we have learned to develop conclusions. We then used these to make recommendations in terms of what various groups in Hong Kong can do to promote green finance, whether it be investors, the government, or other agencies.

Chapter 4 Results

In this chapter, we present the information from our interviews and questionnaires. As we discussed in Chapter 3, we split our interview groups into two sections, professors and researchers and industry professionals, and government officials. The government requested to respond to a questionnaire instead of participating in interviews. We determined the following to be key findings. First, investors are missing clear incentives and regulations related to green finance. Second, there is a need for standardization of ESG information for Hong Kong's investors. Third, the quality of green bonds should be improved. Fourth, fully transparent companies will offer more accurate ESG and sustainability ratings as well as lower risk on investment. Lastly, corporate heads, the government, asset owners, and asset managers are all responsible for playing their part in supporting the green finance movement.

4.1 Hong Kong Investors

Through our interviews with green finance researchers and experts we realized that Hong Kong's investors are not particularly interested in green finance. This mainly stems from the fact that there is no clear incentive for mainstream investors to make the switch to greener investments.

4.1.1 Returns Vs. Social Benefits

Our interview with Professor David Broadstock, an economics professor at Hong Kong Polytechnic University, revealed that investors and fund managers are not familiar with the externalities caused by investment. This leads investors to question the need for green finance. If switching to green finance requires more research and new tools to make similar returns to traditional investments, it is hard for investors and fund managers to find a logical reason to switch to green finance. Mr. Charles Yonts, the head of power and ESG research at CSLA, an institutional brokerage and investment group, supports this statement. Mr. Yonts's position gives him access to the perspective of the Hong Kong investors, who are not showing interest in greener initiatives. Investors have only showed interest in green investments as a business venture rather than a way to improve the environment.

Professor Broadstock mentioned that demand from people uninformed about the external benefits is very low. Informing investors about environmental impacts of investments could stimulate more demand in green finance. This would give them a clear incentive to invest in greener initiatives. While, most ESG scoring agencies have methodologies used to convert the highly variable, qualitative environmental impacts of companies into a single quantitative score. The results of several interviews suggest investors tend to use ESG scores as a benchmark to compare companies rather than as a measure of environmental impact. Furthermore, without additional investigation into a company's disclosures, it is difficult to determine the relative environmental impact due to the influence of social and governance scores.

4.1.2 Measuring and Mitigating Risk

From our interviews we find that ESG ratings are used by investors for risk measurement and mitigation. Yet, Professor Entela Benz-Saliasi at the Hong Kong University of Science and Technology, and Charles Yonts both referred to ESG ratings as 'black boxes.' The information entering and exiting the disclosures and the scores is well known, but the methodologies connecting each side are ambiguous. ESG rating agencies lack concrete explanations behind their metrics, so it is hard for investors to judge what specific elements contribute to a company's environmental, social, or governance score.

Prof. Benz-Saliasi mentioned that investors are interested in seeing if a company is aware of consumer and government trends that could affect business negatively. They want to see companies that are actively preparing to deal with short- and long-term risks. Additionally, these risks can be tied to the environment. Prof. Benz-Saliasi used the example of many Chinese companies being no longer able to operate due to stricter environmental regulations or fines enforced by the government. The current issue that investors have with ESG scores is that the rating agencies do not release their full methodologies publicly. Prof. Benz-Saliasi stated the true underlying process that produces ESG's is intellectual property

of the ESG agencies. This makes it hard for investors to understand what the agencies look for and if it is relevant to what the investor wants to see.

The ESG methodologies used to measure environmental risks are an important part of our project. They can be used for more than just measuring social benefit. By measuring environmental risks, investors have a better understanding of how environmental externalities caused by a company could affect the company in the future. For example, if a government imposes a tax on high emitting companies, those companies will see it affecting their profits. Producing environmental externalities exposes them to a greater risk. While there is a growing trend of impact investing in Hong Kong, based on our interviews most investors do not consider the environmental impacts of their investments. Using ESG ratings to systematically measure and address environmental risk gives Hong Kong investors a financial incentive to consider the environmental impacts of their investments.

4.1.3 Misuse of ESG Scores

Sustainable Finance Initiative (SFi), a Hong Kong non-profit initiative with a mission to mobilize private capital for positive impact and accelerate Hong Kong's transition towards a sustainable finance hub. SFi's research "Mapping Sustainable Finance in Hong Kong" (2018) identified that low market awareness, poor government incentives and misperception of concessionary return are top challenges preventing sustainable finance from growing in Hong Kong (SFi, 2018a). An expert in the sustainable investment industry, who preferred to remain anonymous, Charles Yonts, and Prof. Benz-Saliasi said that ESG scores or ratings should not be treated as settled facts used on their own, they are a series of judgements on ESG criteria and it is important for investors to utilize ESG scores and data in conjunction with an investor's own financial research. Therefore, education for investors is necessary to help them understand and properly incorporate ESG principles into their investment strategies.

4.1.4 Scalability of Green Bonds

While interviewing James Maguire, Partner at Sustainable Development Capital LLP, he mentioned that Hong Kong faces an issue with finding more green projects to participate in. This is where the government could research ways to promote green projects. Mr. Maguire used the example of investing in a green building management system. The system would monitor energy consumption and maximize efficiency. This would reduce wasted energy which ultimately is good for the environment and the building managers. These are the kinds of big green infrastructure projects that the government could help push into the public eye and would help stimulate green finance in Hong Kong.

4.2 Standardization

Our interviews have shown us that poor standardization of financial methods limits green investment in Hong Kong. We have found that the biggest room for improvement is within green bonds and ESG scores. In this section, we will discuss the problems we have found with each of these areas and how they affect the implementation of green finance.

4.2.1 Bond Standardization

One challenge with green bonds is figuring out what makes the bond “green.” Veronique Lafon-Vinai, an Associate Professor of Business Education at the Hong Kong University of Science and Technology, as well as another expert on green bond certification who wished to remain anonymous, both agreed that there is no generally accepted definition for what makes a company or bond green.

During our interview with Mr. Kapasi, he said that one of the tasks of the International Capital Market Association, ICMA, is to set up green bond principles so that those bonds have a guideline to follow in order to qualify as green. However, those principles are very high-level and general, and only provide a basic framework for the bonds to follow. Mr. Kapasi said that the Green Bond Principles have aimed to strike a balance between rigor and flexibility in order to allow green bond certification schemes such as

that of the Hong Kong Quality Assurance Agency, HKQAA, to define their criteria within this framework. The ICMA does not want to dissuade new entrants into the green bond market, but at the same time they want to make sure that the bonds and associated projects are truly green.

There are many actions being taken in Hong Kong to provide a solution to standardizing green bonds. Professor Lafon-Vinai mentioned that by issuing its first green bond in 2018, the Hong Kong government set up a benchmark “risk-free interest rate” that other issuers could use to price their bonds. Doing so gives banks an idea of what interest rate to use for their green bonds. Then they can adjust depending on how much risk a certain project has. In addition to this, an expert in green bond certification who prefers to remain anonymous told us that organizations develop certification schemes of green bonds, where companies submit the green framework for their project and the organization would use their own protocols to determine if they meet their certification requirements. These organizations base their certification on international standards, such as those developed by the UN, and the principles that the ICMA creates. The green bond principles administered by ICMA that Mr. Kapasi mentioned leave some room for interpretation on precisely what projects qualify to make a bond green, so a top-down approach may be beneficial to make those guidelines more specific in the context of a particular market, just as a top-down approach in China boosted their green bond market through government influence.

In the end, standardizing green bonds will benefit the companies as well as the investors that buy them. Mr. James Maguire broadly said that the focus should be to make more bankable projects, faster. Standardization of the project’s contract could help make this possible. If the green certification process is streamlined more projects could be certified in a shorter amount of time. A swift process like this will allow a company to begin a new project more quickly and investors will not have to spend time worrying about if the project is green, and the investor could generate returns from the investment sooner.

4.2.2 ESG Standardization

ESG scores might also benefit from standardization, which might be hard to implement. A variety of companies evaluate ESG information, such as MSCI, Sustainalytics, and Bloomberg. Other smaller businesses, such as CLSA in Hong Kong, have their own criteria for their ESG scoring process. Because of this, the same company may have different ratings from each evaluation despite the ESG companies looking at the same criteria. Four of our academic interviewees suggested a universal ESG criteria or some form of standardization would make reporting on companies more accurate and will give investors a better idea of which companies have a positive impact on the environment.

One step that would help standardize ESG scores would be to have companies disclose their scoring methodologies in order to alleviate the “black box” problem that Mr. Yonts brought up. However, because these ESG methodologies are intellectual property of the ESG companies, it would be difficult to standardize them by combining points from different agencies’ scoring systems without compromising those agencies’ businesses.

ESG scores might also be hard to standardize because of the varying priorities across countries and industries. Professor Benz-Saliasi and Professor Broadstock both said that it is hard to standardize scoring for companies that deal with different products, like an electric company versus a car company. The types of steps each company could take to become more environmentally friendly are drastically different, so ESG scores should take this into account by finding common ground from different industries to base scores on; this way, scoring criteria could be applied to many facets of seemingly different institutions.

4.3 Transparency

By analyzing the information that we gathered in interviews with professors, investors, and government officials involved in Hong Kong Green Finance, we found there is an important link between

transparency and the accuracy of ESG and sustainability ratings as well as risk on investment. In this section, we describe several areas which have indicated this link.

4.3.1 Transparency Exposes Poor Environmental Practices

Interestingly, Professor Broadstock informed us that since environmentally friendly companies, historically, have not had the need to report, they can be incorrectly filtered out of green portfolios. It is difficult to accurately understand which companies are good or bad if they do not all submit disclosure documents. Nevertheless, the most visible environmental information is in those firms which are most heavily under the spotlight. More important to the success of green finance than just producing metrics, such as ESG scores, is the investor's understanding of sustainable investment. Our interview results made it clear that investors must be capable of looking deeper than the numbers. In order to achieve this, firms need to be transparent with their environmental, social, and governance practices. The comply or explain rule exists for companies listed on the Hong Kong Stock Exchange, but this is not enough to fully enforce company disclosures. Complete corporate transparency will ensure investors have a thorough understanding of what makes firms environmentally friendly and how they can find this from ESG scores and disclosures.

4.3.2 Transparency Lowers Risk and Cultivates Trust

Transparency is important to a firm's stakeholders because the firm must be honest, truthful, and take responsibility for their actions. Providing disclosures should confirm the firm's greenness. Professor Benz-Saliasi described disclosures as a way companies can improve their corporate image. The disclosure shows a firm's engagement using their methods. Repeated disclosure can even show a firm's engagement with their own methods. Regardless of their industry, if a firm improves their rating, this shows they are trying to make a difference. Mr. Yonts, from the perspective of an investor, also described disclosures and ESG scores as a method of engaging with asset managers. He explains this with the following scenario:

“If a stock you are holding is a bottom decile, bottom quintile, or bottom quartile even, for its sector, or its country, or the overall market, then you don’t necessarily have to sell it, but the portfolio manager must explain, one, they understand why it scored so low, and two, why they still think they should hold it.”

Improving transparency makes both the firms responsible for disclosures and the asset managers more accountable to their investors. The more disclosures available to the investor, the lower the risk is on the investment. Increasing transparency improves the trust between a company and the investor. Lower risk and greater trust will increase investors’ participation in the growth of green finance.

4.3.3 Agencies have a Proprietary Right to their Methodologies

A notable limitation to transparency in green finance is right to proprietary methods and strategies held by the likes of ESG rating agencies. In many of our interviews we discussed the businesses who keep their methodologies undisclosed to the public. We heard from Mr. Yonts that an ESG score, especially in Hong Kong, could be heavily skewed away from environmental and social because the people here are interested most in governance and the environmental and social scores may be more difficult to consistently measure. But, giving investors the knowledge about what goes into the score allows them to have a better understanding of how much benefit they can expect from their investment. Similarly, Professor Broadstock wishes for the “black box” methodologies of ESG scoring companies to be made available so we more clearly understand them. He said that although he has access to the desired company’s disclosures, he does not know which ones were used and how much they affected each part of the ESG score. He suggested that this process should be more transparent and more public. However, this would force ESG scoring agencies to give up their proprietary information. Fortunately, Mr. Yonts suggests that although companies can achieve high ESG scores through good governance practices, even if they are in the oil and gas sector, if the people with money want to invest in green businesses, over time the scoring agencies will be called out until they can deliver a product that people want.

4.4 Leader of the Green Finance Initiatives

When we asked our interviewees, “who should lead the push for more green finance in Hong Kong?” we received mixed answers. All the responses included either the government, business heads, investors, or the market are the ones responsible for being the most influential on promoting green finance in Hong Kong.

What was surprising about these findings is that there is no clear-cut right or wrong answer on who should primarily push the green finance movement. Each interviewee provided specific evidence as to which group should be the most influential and why. Many interviewees did not disagree with the different counter-points on who should be the leader in pushing green finance in Hong Kong. This provided an overall sense that the situation in Hong Kong is very complex and not like Europe’s or even China’s where a commission or government has a strong influence on green agendas. We discuss each of these viewpoints in detail in the following sections.

4.4.1 Business Head’s Leading the Charge

A common answer to our question of who should lead the green finance push in Hong Kong was that business heads, CFO’s, and CEO’s need to be more involved with their company’s green agendas. An expert on green bond certification first suggested that the board of directors within a company need to take an active role in using high level insights to promote green initiatives. This involves pushing certain green projects and departments within their business model.

Mr. Maguire provided the idea that risk management strategies should be a key part of any company’s business. He mentioned CFO’s need to be directly involved with allocating corporate capital into the firm’s risk mitigation strategies. Natural disasters have become increasingly worse over time due to global climate change, so shareholders and investors want to see that these companies are taking these potential disaster risks into account.

4.4.2 The Role of the Hong Kong Special Administrative Region (HKSAR) Government

Prof. Entela Benz-Saliasi stated that the government should take the lead in pushing green agendas. She brought up that governmental involvement could act as a catalyst in speeding up the implementation of green initiatives. Prof. Benz-Saliasi also said that Hong Kong's government is looking to facilitate the ESG disclosure process by making it easier as well as accurate. Europe has green initiatives deeply embedded in its economy because its government has much stricter laws and regulations, whereas Hong Kong has the freest market in the world. The market structure in Asia is primarily less social and environmental oriented, so the government needs to step up and makes changes. Prof. Benz-Saliasi, in conclusion, pointed out that waiting for markets to "turn around" themselves will take too long, given that climate change is no longer a forecast rather than a sober reality. The government can facilitate this transition not only by investing, but also by providing the necessary infrastructure and regulatory framework to accommodate the capital flow

The results of questionnaires sent to members of the HKSAR Government indicate several supporting roles the government has contributed to the green finance movement. First, there is extensive evidence that the HKSAR Government is attempting to spur investment in green bonds. As stated by the Environmental Protection Department, the HKSAR Government plans to set an example for the green bond market in Hong Kong by issuing the inaugural government green bond in 2019. In connection with this, the Hong Kong Monetary Authority (HKMA) refers to several supportive measures and the Chief Executive's policy address of 2018. These measures include the Pilot Bond Grant Scheme, the Green Bond Grant Scheme, and the Government Green Bond Programme. Second, the EPD references the Carbon Footprint Repository and the Carbon Audit Seminar, both efforts to educate Hong Kong listed companies on ESG issues. The first, a website to learn to conduct regular carbon audits and disclose greenhouse gas emissions in their ESG reports. They hold the seminar with the Hong Kong Exchange at the Eco Expo Asia

to help companies share their carbon management practices. The results of these questionnaires suggest the government

4.4.3 Investors Driving the Market

Prof. Broadstock at Hong Kong Polytechnic University stated that free markets have and will eventually reach a point of equilibrium between supply and demand. This means that green equity that is available in the market will equal the demand of the investors in the market. Prof. Broadstock's notion was that markets will always steer towards what investors want, so if green projects are a major priority, then green projects will be invested in. The issue is that green investments are more of a priority for society than it is for investors. Without certain incentives and regulations provided by the government, it is difficult for investors to adequately reach society's level of desired green investment. Climate change issues need to be tackled sooner rather than later, so green projects need to be created as quickly and efficiently as possible. Mr. Kapasi proposed that setting standards from the private sector is a reasonable approach and can foster a level playing field. These points lead us to believe that Hong Kong's economy will follow what investors want. If investors want to see an outcome of more green projects, the market will shift towards green projects. This means that the government can guide the market by providing investors with green finance incentives that increase the demand of the market.

4.4.4 Everyone Should Be Involved

In addition to the variation in answers from our interviewees, there were few who stressed the importance that all parties need to be involved in leading the green movement. One interviewee mentioned that green finance expansion should be led by a top-down and bottom-up approach. This means that not only does the green sector need investor confidence and appetite, but regulators need to do their job as well. With the combination of government regulation and investor confidence in green projects, the growth in green finance could be very effective. This method may be the most efficient in promoting green finance in Hong Kong.

Chapter 5 Conclusions and Recommendations

In this chapter, we briefly summarize our key findings. We also discuss our recommendations for promoting green finance in Hong Kong. Finally, we mention further research topics on green finance in Hong Kong, as well as limitations that we encountered during our research.

5.1 Summary of Findings

Based on our interviews, the most important results related to green finance are the following. **First, Hong Kong's investors are missing clear incentives and regulations related to green finance.** Without clear incentives for green finance, Hong Kong's investors do not consider environmental impacts of their investments. This also affects ESG scores and turns them into a risk measuring and mitigation tool rather than an environmental impact tool. Furthermore, investors who consider ESG scores as a complete investment strategy tend to lose on returns because high ESG score companies do not guarantee higher returns. These lower returns create skeptics of green finance and are caused by lack of understanding in ESG scores and how to use them.

Hong Kong investors need standardization of ESG information and green bond benchmarks in Hong Kong. Standardization of environmental, social, and governance disclosures would make comparing companies easier for investors by allowing for direct comparison of the scores regardless of the specific ESG rating agency. Their private methodologies are what distinguish them from their competitors, so they cannot disclose their rating methodologies freely for standardization. Furthermore, standardizing green bonds is a difficult task since it would involve defining the term "green," but there are basic actions being taken in Hong Kong as a first iteration to solve this.

Improving transparency leads to more accurate ESG and sustainability ratings as well as lower risk on investment. First, increasing transparency makes environmental practices more visible to the investors and the public. Second, the companies that are more transparent will be trusted more by asset

owners and will experience more business, encouraging others to follow suit. Finally, when companies have developed their own proprietary methodologies, they cannot be forced to be transparent about such things. The importance of transparency to the success of green finance in Hong Kong revolves around trust between the investor, who they invest in, and what evaluation instruments, i.e. ESG ratings, they use.

Lastly, we have found that multiple parties believe the responsibility lies outside of their own party. Corporate heads, the government, asset owners, and asset managers are all responsible for playing their part in supporting the green finance movement. Several interviewees believe that corporate heads, specifically CFO's, should lead the green finance movement by being more involved with allocating capital into risk management strategies. Others believe the government has the main role in being the regulator of green finance. Another portion of interviewees believe the market will resolve itself over time because people willing to invest in green projects will and if it is truly a main global concern, it will be addressed. One interviewee stated that there needs to be primary involvement from both the regulators and the asset owners. These results led us to believe that no party wants to take on the main leadership role in pushing green initiatives.

5.2 Recommendations

As a result of our key findings, we provide several recommendations that we believe to be beneficial to increasing green investment in Hong Kong.

Recommendation 1: The government should give guidelines to companies to help disclose information that investors are looking for.

From Finding three, we identified the need for companies to be transparent. Furthermore, educating companies about transparency will lower the barrier for companies to provide disclosures to ESG rating companies and investors. The current method of producing an ESG score is time consuming

and expensive. If a third party must analyze a company's environmental, social, and governance practices and in some cases, these companies are not prepared to provide their disclosures effectively, the process can take months. Providing a relevant group of employees at each company with enough training to understand basic disclosure methods will create a larger quantity of transparent companies. More transparent companies mean that investors can clearly see what companies are doing to be sustainable while lowering the overall risk of investment.

Recommendation 2: The Hong Kong government and finance professionals should work together to educate the financial industry on the proper use of ESG to reduce misconceptions.

From Finding 3, we understand that there is a lack of market awareness and understanding of ESG scores. Multiple interviewees pointed out that some investors use ESG scores to decide what companies to place into a portfolio. Simply screening companies using ESG scores is not a robust financial strategy and this could lead to the lower returns that investors are worried about. Investors should conduct further research about the companies they invest in and use ESG scores as part of a bigger financial strategy.

Recommendation 3: Green finance researchers and professionals should collaborate with the Hong Kong government to standardize ESGs in order to create guidelines that ESG rating agencies can base their methodologies on.

Standardization of environmental, social, and governance disclosures is important because it would streamline the disclosure collection and scoring process, thus improving ESG usage. This aids the investor's decision to invest in a green firm without being skeptical of a score that is drastically different from other ones. If the ESG score agencies agree on what information is necessary to create their reports, this standard will exist without making the agencies give up their intellectual property, which would compromise their ESG score business.

Prof. Broadstock mentioned that there is going to be low demand for green investments if investors are not shown some reason to put capital in them. While ESG scores show promise in measuring environmental impact, investors are more focused on the risk factors related to ESG. Prof. Broadstock said ESG rating methodologies could be improved to better capture company engagement with respect to environmental impact.

Recommendation 4: Companies need to take initiative to create more valuable green projects that investors can put capital into.

Our interview with Maguire has shown that Hong Kong should focus on creating more bankable projects faster. The government and companies should create more green projects and certification agencies should streamline the green bond certification process. This increase in green bonds will help promote green finance activity in Hong Kong.

5.3 Further Research and Limitations

The recommendations we make come from a high-level point of view; nonetheless our ideas come from a thoughtful analysis of our interview results. A point of further research would be to dive deeper into the low-level details of these recommendations. Low level recommendations would give specific steps that green finance researchers, green finance industry experts, or the government could implement to promote green finance.

While multiple interviewees mentioned the increasing trend of green finance within Hong Kong, it would have been useful to interview green finance industry experts that have placed capital into green investments. The industry experts that we were able to interview consisted mostly of analysts. These analysts work closely to advise investors but ultimately do not directly move capital for investments. Interviewing green finance industry professionals would have helped us verify claims that both professors and analysts made.

Government interviewees were hard to contact. The responses that the Hong Kong Monetary Authority (HKMA) sent us were topics we had already covered in our background. We believe this was done as a precaution to avoid saying something not entirely endorsed or approved of by the Hong Kong government. For further research, we would recommend writing very specific questions for the Hong Kong government. This would result in more useful information rather than the broad answers we received.

Based on our varying responses from different sources, we recommend that regulators and asset owners are the two most crucial factors to catalyzing Hong Kong's green finance agenda. While Hong Kong is a free-market economy, letting the market govern itself would take too long and would not necessarily lead to environmentally beneficial results. We have seen a top-down approach work very quickly and efficiently for nations like China, where the government mainly pushes their green agenda. While this might not be the same for Hong Kong because government regulations cannot be too strict, we suggest that their intervention could be effective. If asset owners have the confidence and motivation to invest in greener topics while the government provides certain frameworks and incentives, Hong Kong could see much quicker growth in green finance.

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Appendix A - Sponsor Description: Friends of the Earth (HK)

Friends of the Earth (HK) (2015) is part of the larger public, non-profit organization, Friends of the Earth International with environmental groups in 75 countries throughout the world. Funding is provided by their members and donations from governments and other foundations. Friends of the Earth (HK)'s (2017b) mission is “to promote the government, enterprises and society to build a sustainable and fair environmental policy, business methods and lifestyles, and to protect the environment in Hong Kong and its neighbors” (para. 3).

Friends of the Earth International (2018) is made up of autonomous organizations around the globe, with a small international secretariat located in Amsterdam, that each share a common regard for environmental problems. Each member of Friends of the Earth International has an equal say in their Biennial General Meeting, which elects an Executive Committee and International Program Coordinators, as well as decides on the activities of the federation. The Executive Committee regularly meets to govern the federation, while the nine International Program Coordinators meet with representatives from member groups from different regions to make sure their programs continue to work towards the organization's goals.

Friends of the Earth (HK) (2017b) is comprised of a chairperson, a vice chairperson, an honorary secretary, and an honorary treasurer, as well as thirteen other members that work for the organization. Friends of the Earth (HK) (2017a) obtains most of its funding through project income, which, in 2017, gave them over HK\$ 10 million Hong Kong dollars. Other major sources of funding are valuation gain on investment property and donations. In 2017, Friends of the Earth (HK)'s income was 16.3 million Hong Kong dollars, while their expenditures totaled 12.2 million Hong Kong dollars.

Friends of the Earth (HK) (2017b) has hosted various events to engage with the public and promote green practices. For example, a forum was held to show how different government

departments were acknowledging the threats that extreme weather poses to water in Hong Kong and explain strategies for water management in the future. In addition to this, FoE (HK) promoted No Car Day to reduce air pollution, carbon emissions, and road traffic congestion, and suggested alternatives such as using public transportation.

There are many other environmental organizations located in Hong Kong, and a common goal among these groups is to help make Hong Kong a regional leader in green finance (HK Financial Services Development Council, 2016). Friends of the Earth (HK) (2018) has worked with these groups in the past to help promote sustainability in Hong Kong. FoE (HK) is an affiliate member of the Business Environment Council (2018), a charitable membership organization that advocates for the use of clean technologies. Also, FoE (HK) has worked with the World Wildlife Fund (2018) by campaigning for the government to build on brownfield sites in order to preserve parks in Hong Kong.

Appendix B - What is an IQP and How Does This Qualify as an IQP?

Students in their third year of rigorous, project-based work at WPI take part in the Interactive Qualifying Project (IQP). “Unlike an academic course, this nine-credit-hour requirement involves students working in teams, with students not in their major, to tackle an issue that relates science, engineering, and technology to society” (Worcester Polytechnic Institute, 2018, para. 2).

For seven weeks, we, the students authoring this report, will engage ourselves in developing a plan with Friends of the Earth (HK) to make Hong Kong a regional leader in green finance. In collaboration with contacts at FoE (HK), the advisors to our project, Professors Gu Wang and Alexander Smith, and members of the Hong Kong finance community, we will work to develop this plan. Our backgrounds draw from electrical engineering, mechanical engineering, chemical engineering, and computer science. The completion of this project requires that we develop proficiency in desk research practices, collaborative skills, creativity, as well as general skills – such as oral & written communication, project management, leadership, and more. In addition, we expect to attain a better understanding of green finance, its challenges and opportunities. We expect to work outside our designated majors but use our diverse engineering and science problem solving experience gained at WPI to tackle this societal issue, driving investment towards green finance.

Appendix C - Interview Protocol for Green Finance Researchers


Thank you for your participation in this interview. As we mentioned in our email, we are studying the motivators and barriers surrounding green finance and what incentives, if any, would encourage more investment in green projects.

Would you be okay with us using audio recording for this interview today?

If yes: Thank you! Be sure to let us know at any point if you would like us to turn off the recorder or remove what you said from the record.

If no: Thank you for letting us know. We will only take notes of our conversation.

Before the interview begins, are there any questions you would like to bring up?

Professors		
1	What are the main motivators for green finance?	
	How much do you think social benefits can influence an investment?	
	Green mutual funds have been shown to underperform when compared to conventional funds. Over a period of 3 years GMF had 1.2% less return than a conventional fund.	
	To what extent can social benefits (eg. reduced air pollution, better waste management) of an investment compensate for lower average returns of a green mutual fund?	
2	On September 21st of last year, Hong Kong's Green Finance Association was launched with the hopes of establishing Hong Kong as an international leader in green finance.	
	Are there any other recent events concerning green finance in Hong Kong we should know about?	
	Are there any laws in Hong Kong that are affecting green finance either positively or negatively?	
	In your opinion, who is responsible to lead the green finance push in Hong Kong? (Investors, Asset Managers, Government)	
	Are there any methods that have been successful at boosting investment in the past that could be applied to green finance?	
3	Do you know about or have you done any research on ESG scores?	
	If yes:	If no:
	Do you know of any other issues that investors face when dealing with ESG scores?	
	How do you think that ESG scores could be improved?	
	Do you think standardization could improve the quality of ESG scores?	
	Are there any issues with the way companies disclose information for their ESG scores?	

Thank you for your time, we appreciate the responses you were willing to give us. We will send you a copy of your responses and forward you our final report when it is complete so you can approve of your

contributions to it. Also, we would appreciate if you could connect us with other experts in the field to give us more information on the topic of green finance.

Appendix D – Interview Protocol for Investors and Asset Managers

Thank you for your participation in this interview. As we mentioned in our email, we are studying the motivators and barriers surrounding green finance and what incentives, if any, would encourage more investment in green projects.


Would you be okay with us using audio recording for this interview today?

If yes: Thank you! Be sure to let us know at any point if you would like us to turn off the recorder or remove what you said from the record.

If no: Thank you for letting us know. We will only take notes of our conversation.

Before the interview begins, are there any questions you would like to bring up?

Investors

1	Are you aware of the green finance movement in Hong Kong?	
	What criteria do you use as the basis for your investment?	
	Do you currently hold or manage any green investments? Why or why not?	
2	Are you aware of ESG's and CSR reports?	
	If yes:	If no:
	How much do you use ESG information in your green investment decision making?	What other methods do you use in your green investment decision making?
	What component's of ESG information do you care about most?	
	Do you trust ESG scores?	
	If yes:	
	Can you clarify what parts you are skeptical about relying on?	
	What do you think will help to improve the overall reliability of ESG's?	
	What is your opinion of government intervention or regulation of requiring accurate ESG information?	

3	What social benefits do you look for? Why?
	Can social benefits make up for lower average returns of green mutual funds?
4	Why do investors consider green bonds?
	Are there standardization issues that green bonds face?
	Are there any other issues the green bonds face?
5	Who's responsibility is it to lead the change into greener initiatives? EX. The government? Why?
	Are there any laws or regulations that limit you from green investments?

Thank you for your time, we appreciate the responses you were willing to give us. We will send you a copy of your responses and forward you our final report when it is complete so you can approve your contributions to it. Also, we would appreciate if you could connect us with other experts in the field to give us more information on the topic of green finance.

Appendix E – Questionnaire for Government Agencies

1. To what degree does the government has a duty to promote green finance?
2. What laws or government incentives promote green finance currently?
3. What do you think other groups besides government organizations within the green finance industry do to promote green finance within Hong Kong?
4. To what degree does the Hong Kong government feel pressure from mainland China to promote green finance?
5. Has the *INSERT AGENCY* considered acting to improve green finance in Hong Kong as a method of protecting the environment? We are aware of tax incentives/concessions for things such as electric or environment-friendly vehicles in order to encourage the reduction of vehicle emissions. And the Hong Kong government has introduced the Green Bond Grant Scheme to lower the cost of certifying green bonds.
6. Is it possible to offer incentives to the finance market to encourage engagement in green finance?
Please explain.
7. Based on the research by the Sustainable Finance Initiative lack of ESG understanding and concerns of lower returns surround sustainable investment, does the EPD have the capability to provide educational services?
8. Is the *INSERT AGENCY* looking at any ways to standardize and improve the reliability of ESG ratings and scores?