

# MOVING FORWARD TOGETHER: BUILDING THE PORTUGUESE SPEAKING COUNTRIES PLATFORM AND DEVELOPING GREEN FINANCE

中葡平台建設及綠色金融發展雙推進

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# OUTLINE

**I. INTRODUCTION: GREEN FINANCE-WHAT AND WHY**

**II. THE CHALLENGES AND UNCERTAINTY OF GREEN FINANCE:** Huge Investment, Externality and Other Micro-economic Problems

**III. How Portuguese Speaking Countries (PSC) Can Help:** SYNERGY from Developing Green Finance System and Building PSC Platform

→ GREEN FINANCIAL SYSTEM FOR PSC & GBA

A. The role of financial institutions and markets

B. The role of policy markers in PCS

**IV. RECOMMENDATIONS**



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# I. What Is Green Finance?

*“Green Finance (GF) represents financing of public and private green investments and public policies that support green initiative..”*

- *Two tasks of GF:*
  - *Internalize environmental externalities;*
  - *Reduce risk perceptions to encourage investments that provide environmental benefits.*



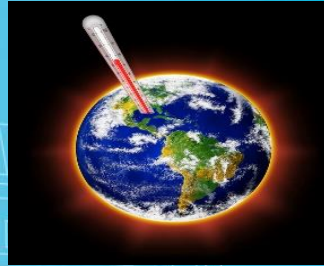
*Source: German Development Institute (d.i.e.) Briefing Paper, 23/2016.*



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# I. WHY GREEN FINANCE

- **OECD: Global Warming, Stronger Action Needed!**



- **OUTLINE PLAN FOR “GREATER BAY AREA”:** Macau to become 宜居,宜業,宜遊之優質生活圈 (Guangzhou, Shenzhen, Hong Kong, Macau) – **IMPOSSIBLE IF THE TEMPERATURE INCREASES BY MORE THAN 2° C!**
- \* **BIG PROBLEM FOR MOST PSC:** small and developing.





# GLOBAL WARMING

## What is the difference between 2° C and 1.5° C ?



Source: [CarbonBrief](#)

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# HOW TO DEAL WITH THE GLOBAL WARMING AND ENVIRONMENT PROBLEMS?

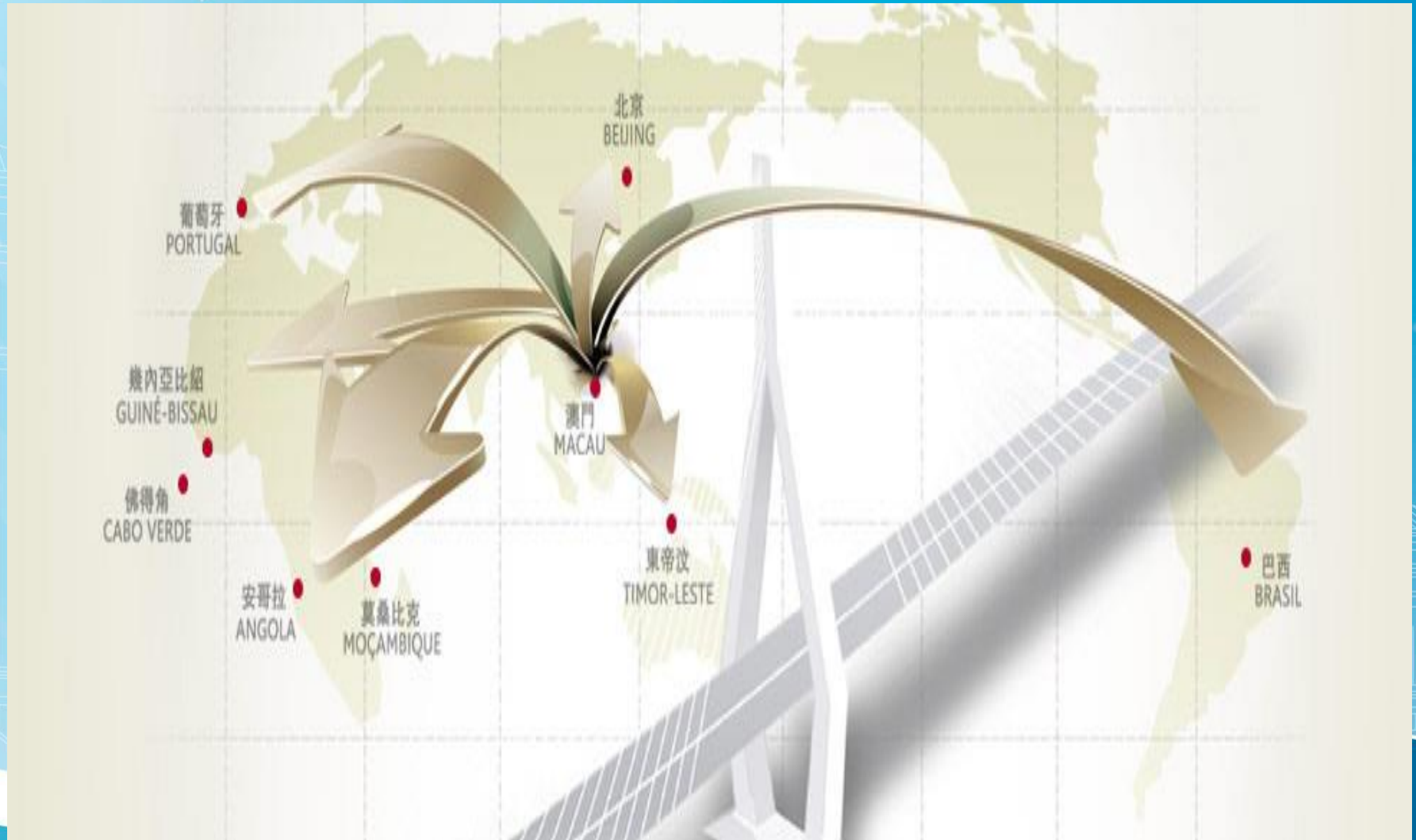
- GLOBAL WARMING IS A **GLOBAL PROBLEM** THAT REQUIRES **GLOBAL EFFORTS**.
- ALL COUNTRIES, REGIONS, AND CITIES MUST WORK CLOSELY TOGETHER (**the PSCs**) TO DEVELOP THE **INFRASTRUCTURE, TECHNOLOGY AND FINANCIAL ASSETS NEEDED (Green Fin.)**
- **DEVELOP GREEN FINANCE & BUILD PSCs PLATFORM!**





# PORTUGUESE SPEAKING COUNTRIES (PSC) AND GBA

SOURCE: BANK OF CHINA



## II. GREEN FINANCE:

### CHALLENGES AND UNCERTAINTY

#### A. INSUFFICIENT PUBLIC BUDGET

- *“An estimated \$400-600 billion per annum is needed to finance conservation of land, forests and water/water mgt. = green investments.*
- *more than \$350 billion of incremental capital – to fund projects in renewable energy and energy efficiency, dam.*
- *The latest accounting of climate finance shows there is a financial gap of about \$70 billion.”*

Source: Environment Facility, 2017



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# II. CHALLENGES AND UNCERTAINTY

## B. EXTERNALITY

*“A side effect or consequence of an industrial or commercial activity that affects other parties without being reflected in the cost of the goods or services involved....”*

Example: air pollution created by coal burning power company in one location may travel to another city.



# II. CHALLENGES AND UNCERTAINTY

## C. Micro-economic Challenges

1. Problems in internalizing environmental externalities;
2. Information asymmetry;
3. Inadequate analytical capacity;
4. Maturity mismatch between long term green investments and short term time horizons of savers and investors;
5. Govts do not clearly signal how and to what extent they promote green transition.





## II. Externality- An Illustration

Corporate Investment without Social Responsibility:

**Net Present Value > 0 → profitable! Accept project!**

= PV (Cash inflow 1 + Cash inflow 2 + cash inflow 3 + ...)

- Cash outflow (= cost)

$$= \sum_{i=1}^n [ \text{CIF}_i / (1+r_i) ] - \text{cost}$$

For green projects, **n** is very large, investment for many years, 10 to 20 Years (long term Green Bond needed), and **r** is very high because of **high risk**. Therefore the first term is SMALL and cost is very HIGH. That means most green projects are **NOT Profitable**! If CIF is less risky through government guarantees, **r** will decrease; government subsidies may also reduce the cost. Tax exemption can also make the projects more profitable (see more below).



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## II. Corporate Social Responsibility- Internalization

PV (Cash inflow 1 + Cash inflow 2 + cash  
inflow 3 + .....)- Cash outflow (= cost)

$$= \sum_{i=1}^n [ CIF_i / (1+r_i) ] - \text{cost} < 0 \text{ (Loss!) VS.}$$

$$= \sum_{i=1}^n [ CIF_i / (1+r_i) ] + (\text{Corp Social Resp}) - \text{cost}$$

**> 0 profitable!**





# SOCIAL RESPONSIBILITY OF COMPANIES

- Social Responsibility—  
water recycling; casino swimming pools,  
laundry..  
energy saving: lighting/utility/air conditioning.....
- Builders/Construction companies: insulations of building  
(refrigerators= efficiency rate?)  
e.g., a HK construction company redesigns building to save  
energy and lighting...
- Automobiles → tires, auto bodies.....recycling materials??  
Technology!!
- Awards... GM new strategy to produce smaller car...metro- car  
pool (idling, car ownerships?)...



People



Environment



Ethics



# SOCIAL RESPONSIBILTY OF THE COMPANIES

- Lighting at Casino.....



- Laundry....recycle water- swimming pool...
- Singapore: recycle water, “Taste It” Exhibit.





# IMPLICATIONS FOR PSC (1)

PSCs: *Angola, Brazil, Cabo Verde, Guinea-Bissau, Macau, Mozambique, Portugal, Sao Tome e Principe, and East Timor.*



## **STRENGTH**

- Home to 267 million people;
- Vast reserves of oil, gas, agriculture, tourism and marine resources;
- Fourth largest producer of oil in the world.



# IMPLICATIONS FOR PSC (2)

## WEAKNESSES

1. Need External Capital: for investment in energy, waste management, transportation, water and agricultural developments;
2. Underdeveloped Financial Systems: for major green investments- water treatments and purification systems, pollution control and reducing carbon dioxide emissions;
3. Limited credit and insurance: for large/small business and households to make investments and manage risk.





# IMPLICATIONS FOR PSC (3)

4. Brazil, Mozambique and Cabo Verde have fallen back a few places in the Global Competitiveness Index (World Economic Forum).
5. Angola is the lowest among PSC.



# IMPLICATIONS FOR PSC (4)

**CHALLENGES** -Choice between two conflicting goals

1. *Industrialization, Development and Economic Growth* to create jobs and improve living standards → to reach the target through the cheapest and fast means → to produce enough energy with lowest price (rely on plants that pollute the air and water-externality)!

2. a. *More eco-friendly options* such as wind and solar energy!

b. Means to *harvest and grow livestock in an Eco-friendly manner*- EXPENSIVE!



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# IMPLICATIONS FOR PSC (5)

## OPPORTUNITY

\* The degree of industrialization of the PSC is not high → use Macau as a platform for cooperation with China that will have greater potential for economic development → zero tariff under CEPA. Rationale:

1. Macau and PSC have close historical and cultural relationship. It has the highest Per Capita Income in Asia.
2. It is small but has its own financial characteristics and advantages to make best use of its financial sectors by creating a distinct platform (regional financial center?) including banking, insurance, and leasing, etc.
3. Forum Macao provides multi-lateral mechanisms for trade cooperation.



# Export between China and PSC (2015)

Portuguese-Speaking Countries	Portion of Exportations going to China	Chinese Ranking on Countries' Exportations
Angola	42%	1st
Brazil	18%	1st
Cape Verde	1.6%	9th
Guinea-Bissau	5.7%	3rd
Mozambique	5.9%	6th
Portugal	2.1%	10th
São Tomé and Príncipe	0.21%	29th
East Timor	0.23%	9th

**Source:** (DEC, n.d.)



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# III. HOW CAN THE PSC HELP

## COOPERATION AND SPECIALIZATION AMONG PSC & GBA WITHIN THE PSC GREEN FINANCE SYSTEM:

### 1. USE EXISTING AGREEMENTS AND FINANCIAL INFRASTRUCTURE IN PSC AND CHINA:

- A. *US\$1 BILLION CHINA AND PSC COOPERATION AND DEVELOPMENT FUND; CHINA-AFRICA DEVELOPMENT FUND, HEAD QUARTER IN MACAU.*
- B. *MACAO TO BECOME RMB CLEARING CENTER FOR PSC.*

### 2. CREATE NEW FINANCIAL MARKETS AND INSTRUMENTS IN MACAU AND HONG KONG: for trading green bonds, emission options, etc.



# CREATE SYNERGY FROM PSC PLATFORM AND GREEN FINANCE

## GREEN FINANCE and Belt and Road Initiative

Portuguese-speaking  
Countries

Macau &  
Hong  
Kong

Greater Bay Area



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# SPECIALIZATION AND SYNERGY AMONG PSC

- MACAU, CHINA AND HONG KONG WILL BE MAJOR ACTORS FOR FIN INFRASTRUCTURE FOR THE GREEN INVESTMENTS AND TECHNOLOGY IN OTHER PSC.
- BRAZIL AND PORTUGAL, ETC. SPECIALIZE IN DEVELOPING SOFTWARE AND TECHNOLOGY TO COMBAT GLOBAL WARMING, ETC.
- OTHER PSC EXPORT MATERIALS AND NATURAL RESOURCES TO FINANCE THEIR GREEN INVESTMENTS → *A PSC Green Fin System*

*(Based on Outline Plan for GBA and Capacity Building Platform of G20 (2000))*



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# III. THE ROEL OF MACAU- GBA OUTLINE PLAN



1. 澳门。建设世界旅游休闲中心、中国与葡语国家商贸合作服务平台，促进经济适度多元发展，打造以中华文化为主流、多元文化共存的交流合作基地。



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# III. ROLE OF MACAU- GBA OUTLINE PLAN

2. 支持澳门打造中国—葡语国家金融服务平台，建立出口信用保险制度，建设成为葡语国家人民币清算中心，发挥中葡基金总部落户澳门的优势，承接中国与葡语国家金融合作服务。研究探索建设澳门—珠海跨境金融合作示范区。



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### III. ROLE OF FIN INSTITUIONS AND MARKET- GBA OUTLINE PLAN

3. 支持澳门以适当方式与丝路基金、中拉产能合作投资基金、中非产能合作基金和亚洲基础设施投资银行（以下简称亚投行）开展合作
4. 支持澳门在符合条件的情况下加入亚投行，支持丝路基金及相关金融机构在香港、澳门设立分支机构。
5. 发挥澳门与葡语国家的联系优势，依托中国与葡语国家商贸合作服务平台，办好中国—葡语国家经贸合作论坛（澳门）





# PSC Green Finance System

## Two Components

### **1. Sustainable Banking Network-**

Hong Kong and Macau will be the leaders!  
Refer to the Outline Plan of the GBA (see below).

### **2. Principles for Responsible Investment-**

The governments in Macau and HK and other Portuguese Speaking Countries, plus the Greater Bay Area.



# III. GREEN FINANCIAL SYSTEM FOR GBA AND PSC\*

- THE ACTORS

**The banks:** *priority-lending requirements; below market rate finance, such as interest rate subsidies. Local, smaller projects. → risk and misallocation of resources?*

**Institutional investors:** *pension funds, sovereign wealth funds, insurance companies....big/cross countries. Hurdles: green investments not rated, no track record...risk=? Regulatory restrictions?*

*\*See K. Berensmann and N. Lindenberg (d.i.e. 2016) for more general discussion.*



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## Example: HK Hang Seng Bank



### ➤ Your Priority for Going Green:

Provide privilege to encourage corporate customers to acquire environmental-friendly equipment that would enhance resource efficiency and reduce pollution

### ➤ Green Financing Promotion Scheme:

Protect global environment and support the sustainable development of corporate customers

### ➤ Scheme Features:

- Applicable to various lending products<sup>1</sup>, including General Banking Facility, [SME Financing Guarantee Scheme \("SFGS"\)](#), [Hang Seng Business Loan](#)
- A wide range of eligible equipment suitable for Hong Kong and Mainland China<sup>2</sup>
- Up to 7 years repayment period

### ➤ Promotion Privilege:

Up to **HKD 200,000 cash rebate**<sup>3</sup> to support businesses for green production and sustainable development



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# GREEN FINANCIAL SYSTEM

- **International financial institutions:** *take climate risk and the carbon footprint into account when making investment decisions using shadow price of carbon; use green bond to mobilize and re-channel private and institutional capital for green investments; build a coalition of green fanciers to support sustainable development.*





# GREEN FINANCIAL SYSTEM-details

## CENTRAL BANKS AND REGULATORS IN PCS:

1. Establish policies and regulations to support green transformation (Alexander, 2014), especially solving the “*maturity mis-match*” problem for green projects.
2. Give special consideration to climate risks in stress tests and standards of due diligence for banks and fin. institutions.
3. Green prudential regulations: **Brazil**, UK, Australia...require investors to include inform. on environment, social and governance.



# GREEN FINANCIAL SYSTEM-details

4. Coordination of environmental and financial policy:

**China and Peru** coordinate their environmental and finance ministries as well as their banking regulators in requiring banks and financial institutions to report and disclose environmental risk.



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# III. B. The ROLE OF POLICY MAKERS AND CENTRAL BANKS IN PCS: Example

## GOVERNMENT

- Social “bad” vs. private goods, externality....
- Policy instruments and regulations

“...The People’s Bank of China is planning to include the measure as part of its macro-prudential assessment (MPA) framework, and the new measure is likely to be included this year, said Ma Jun, chief economist at the PBOC’s research bureau, .....”

“..China issued 230 billion yuan (US\$33.3 billion) worth of green bonds – 200 billion yuan of onshore and 30 billion yuan of offshore bonds – last year, accounting for 40 per cent of global green bonds issuance last year, making it the world’s largest, he said.”



# III. B. The ROLE OF PSC POLICY MAKERS: Example

## Green financing to be included in Chinese banks' performance ratings

**Green credit**, such as loans to projects offering energy savings or emission reductions, currently account for nearly 9 per cent of total Chinese outstanding loans



PUBLISHED : Friday, 07 April, 2017, 7:39pm  
UPDATED : Friday, 07 April, 2017, 10:53pm  
South China Morning Post. Maggie Zhang.



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# III. The ROLE OF PSC POLICY MAKERS

## Other Examples:

- **Tax incentives: Jimmy Carter's solar system at home.**
- **Subsidy, Rebate: LED, lighting.**
- **SIUE- Ethanoate plant on campus: government grants.**
- **Environmental Protection Agency (EPA) in Macau?**



## **IV. GREEN FIN SYSTEM: RECOMMENATION 1**

### **\* SET UP A PSC GREEN FINANCIAL SYSTEM:**

- Green standards: Green Fin Cert Scheme
- Development guidelines and regulations
- Independent Green Investment Bank (UK?)

### **\* Development of Green Finance Thru Fiscal Policy:**

- Tax concessions
- Profit tax exemption to fund investment
- Interest subsidies to green lending products





## IV. Recommendation 2

\* SETTING UP REGIONAL STOCK MARKETS IN MACAU TO TRADE:

- PSC *Pollution Rights & Green Bonds*;

→ FOR LARGE SCALE INFRASTRUCTURE PROJECTS SUCH AS SEWAGE TREATMENT, WASTE MANAGEMENT, COOLING SYSTEM

→ increase **LIQUIDITY** & **REFINANCING**



# IV. Recommendation 3:

## Green Bonds: Best Practices

Green Bonds: Asian Develop. Bank, World Bank, European Investment Bank;  
Banking regulations: certain percentage of green loans.

Green Bond Grant Scheme (HK):  
subsidies and Green Fin Cert. Scheme.



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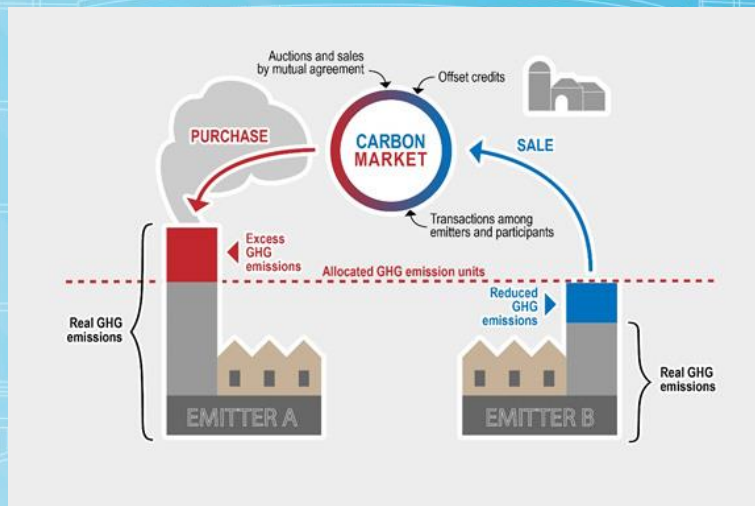


# V. Recommendation 4:

## Public and private partnership

*Examples:*

**Carbon markets** need continued reforms to make them work more effectively.



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# V. CONCLUSION

- Financial markets and financial systems are critical for China, Macau and Hong Kong to reduce the pain from the “soon to be faced middle income trap”, after its extra-ordinary economic development. Private capital can be redirect to investing in the new green financial infrastructures in PSC, not just the housing markets that are overheated (*President Xi Jinping: apartment is for sheltering not for speculation!*)





# V. CONCLUSION

- Securitization will allow for multiplier effects (leverage) that may narrow the gap of the funding needs and funding availability in GBA and PSC.
- PSC can support their green finance investments with the income from trading with China and GBA thru Macau.



**Thank You!**



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