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Supervisor

Prof. Paolo Paesani

Candidate

Francesco Accattoli

Matr. 215661

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INDEX

Introduction

Globalization has provided a fast circulation of trades around the world. But how does a country maintain economic stability? Well, each country has its own central bank which guides and regulates internal and external markets through a set of policies and interventions. In the economic field, some interventions can preclude other ones, this is named the Trilemma problem, as a matter of fact, some central banks are compelled to reinterpret their own policies due to a constant changing environment.

The thesis will analyze the economy of Hong Kong in all its features: how they set policies, and how the market reacts.

The thesis consists of two chapters: the first one depicts the Hong Kong environment from past to present; in particular it focuses on the central bank, also known as The Hong Kong Monetary Authority (HKMA). We will evaluate its internal functioning, that is, how it maintains monetary stability through a set of automated mechanisms named the Currency Board System and the introduction of the Linked Exchange Rate System (LERS). Plus, we will see how the Hong Kong Monetary Stability manages the banking stability through monitoring and internal bank classification divided in: Licensed Banks, Restricted Licensed Banks, and Deposit-taking companies.

Given its internationality, Hong Kong follows also the standards of the Basel Committee, that is, the Banking supervision utilizes the CAMELS rating system, which we will discuss later in the first chapter. Moreover, we will analyze how Hong Kong manages to maintain its international financial reputation.

In the second chapter, we will go more in deep, analyzing the past, present and future of the Hong Kong dollar, in particular, we will make comparison between the US dollar peg and the several other alternatives. Furthermore, I will give a clear picture of the relations between China and Hong Kong, especially focusing on the “one country, two systems” principle, what it means now and how it will shape Hong Kong and its currency in the future.

I got interested in this topic when I was in exchange at the Hong Kong University of Science and Technology (HKUST), its culture and tradition attracted my attention. Also, I started wondering how a small country like Hong Kong could perform so well economically, and the reason for its significant role in the international financial system.

In my opinion, Hong Kong has an incredible history which should be preserved and not loomed by other countries such as China. The threatens are increasing over time, and politically Hong Kong is not ready to face China. However, Hong Kong should try to maintain its own system as stated on the Hand Over act, in order to shield its political and economic independence.

Chapter 1 The Hong Kong Monetary Authority and its Functions

1.1 History of Hong Kong

Located on the Southeast cost of China, Hong Kong is crossed by the Pearl River Delta and by the South China sea, as a matter of fact the 'Hong' bit (香) means 'fragrant' in Chinese, while 'Kong' (港) means 'harbor'. Hong Kong consists of three parts: the island of Hong Kong, the edge of the Kowloon peninsula, and the New Territories, which amounts to 90 percent of the overall territory.

Nowadays, with population amount of approximately 7 million people, Hong Kong is officially recorded as a Special Administrative Region of the Republic of China (HKSAR). Under the "one country, two system" constitutional principle, the Hong Kong Government is exclusively in charge of Hong Kong's internal affairs and external relations. The Government of the People's Republic of China, of which the Hong Kong government is financially independent, is only responsible for Hong Kong's defense and foreign policy.

The government in Hong Kong is composed by three main branches. The Executive branch is headed by the Chief executive which also covers the role of the governor of Hong Kong, and he is elected by a committee consisting of 1,200 selected members, with the approval of the Chinese government. The Chief executive serves for five years and covers the approval of the budget, the sign of the bills, the decisional policies and the executive orders. The chief executive works closely with the financial secretary, administration chief, and other senior officials who form the executive council. On the other hand, the legislative branch has only one chamber composed of 70 members, 40 of whom are members elected by the public through a majority vote. The remaining members are elected by selected representatives from specific sectors in Hong Kong. The members are elected every four years and they debate policies and approve or reject proposed bills. Instead, Hong Kong's judiciary is an independent institution which uses laws closely linked to the British Common Law and Chinese customary law in family cases. The institution is led by the secretary of justice, whose duties are to provide legal advice to the government, prosecute criminals, and handle all legal matters in Hong Kong.

Hong Kong entered its modern era when the British Empire defeated the Qing dynasty in the "First Opium War" in 1841, conquering the island first and sixty years later the New Territories as well, plus 260 small islands.

At first, under the control of the British Crown, Hong Kong suffered from corruption and racial segregation but grew quickly as a free port that supported the trades between China and Europe.

During the Pacific War (1941 – 1945), when Japanese conquered some European colonies including Hong Kong, the myth of the white superiority faded, as a matter of fact, after the war, the British Crown was not able to restore the original colonial system, consequently reaching a pact which gave substantial freedom to Chinese in the political choices.

A second dramatic change, occurred in 1949, when the Chinese Communist Party lead by Mao Zedong[1] took control of China, in response to that, Hong Kong closed its borders on a long-term basis, causing a large distinction between the Hong Kong people and the Chinese overtime. As Hong Kong developed, it had to look to the wider world since the United States and the United Nations, at the beginning of the Korean War in 1950, imposed the trade embargos on China. From that moment onwards, Hong Kong shifted into a global metropolis, and all those events created a sort of independence perspective among the younger generation which lead to a reshape of how people used to feel about the relationship between Hong Kong and China. Moreover, given that Hong Kong was outside Chinese jurisdiction, it served as a safe haven for revolutionaries and other critics of the government of China. Even though Hong Kong did not support revolutionary activities directly, it provided safety and inspiration to Chinese dissidents pondering what alternative political systems might suit China. Indeed, many refugees from mainland China, particularly from Shanghai, settled down in Hong Kong bringing capital, know-how, and management skills

[1] Mao Zedong (1893 – 1976), leader of the Communist party and founder of the People's Republic of China, which he rules until his death.

which strengthened the industrial sector such as textile and shipments. By the 1980s, local entrepreneurs had been so successful to overtake the British companies that had run the economy of Hong Kong for a century.

In the end, the British government decided to entrust Hong Kong sovereign as a going concern to China. The Hand Over celebration took place on the 30th of June 1997. At the same time, China was obliged to maintain the system and way of life there unchanged for fifty years as a transitional period. The British colony became a Chinese Special Administrative Region (SAR) with many controversies over democratic developments, de facto, the Chinese government has been taking more and more control over Hong Kong's autonomy, eroding gradually its freedom.

The increase in interactions between the local people and the mainland Chinese, as well as the Chinese authorities' refusal to let Hong Kong develop a democracy, raised a strong sense of Hong Kong identity, which started to transform it into a real national identity that was different and distinct from that of China. By the mid-2010s this gave rise to a small but vocal movement that advocates independence.

1.2 The Hong Kong Monetary Authority

Being an international financial center, Hong Kong includes an integrated network of institutions and markets which provide a wide range of products and services to local and international customers and investors. Hong Kong's financial markets are characterized by a high degree of liquidity and operate under effective and transparent regulations, which meet international standards. The strategy of the Government of the Hong Kong Special Administrative Region (HKSAR) is to intervene in the exchange market only when it is absolutely necessary, providing a favorable environment in which business operates. Its transparent policies of simple and low taxation allow maximum room for business initiatives and innovation. What's more, there is a strong emphasis on the rule of law and fair market, characterized by no barriers of access to the market by foreign businesses and no restrictions on capital flows into and out of Hong Kong.

Hong Kong's financial system has been developing over the years. It doesn't have an officially designed central bank, but the HKMA performs the same functions that will be discussed in the next chapter.

Moreover, the financial sector regulatory authorities include by the Securities and Futures Commission (SFC), the Office of the Commissioner of Insurance (OCI) and the Mandatory Provident Found Scheme Authority (MPFA).

The Hong Kong Monetary Authority was created on the 1st of April 1993 by joining together the Office of the Exchange Fund with the Office of the Commissioner of Banking. The purpose of this decision was due to ensure that the central banking functions of maintaining monetary and banking stability could be performed with a high degree of professionalism and continuity, in a manner that commands the confidence of the people of Hong Kong and the international financial community.

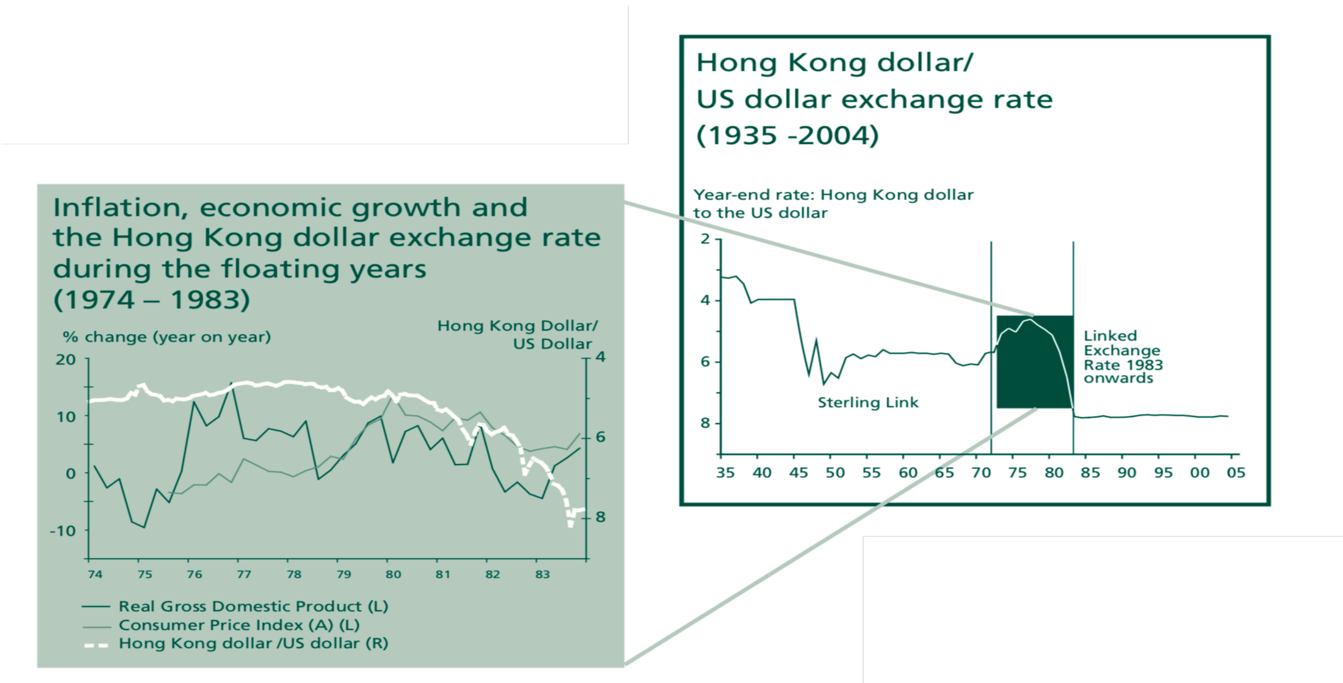
The Hong Kong Monetary Authority covers the following four roles:

1) It aims at maintaining monetary stability according to the structure of the Linked Exchange rate system (LERS) of the Hong Kong Dollar
2) It promotes financial stability and safety assets within the banking system;
3) Being Hong Kong well-known for its international financial center, the HKMA seeks to maintain its notoriety and development in terms of financial infrastructure.
4) Finally, it manages the Exchange Fund within all its functions.

1.3 Monetary Stability

Hong Kong has had a Linked Exchange rate regime of one kind or another for most of its history as a trading and financial center. The Hong Kong government, under the supervision of the British Crown, established its first coinage in 1983 when the silver dollar was approved as an international exchange currency. The silver Hong Kong dollar had been used as a way of exchange until 1935, when, during a world silver crisis due to a shortage of supply, the government decided to replace the silver dollar from the market for the Hong Kong dollar which would then be linked to the pound sterling at a rate of HK$ 16 to the pound, as it is shown on the graph below. As a matter of fact, under the Currency Ordinance of 1935, banks were required to redeem to the Exchange Fund (which was invested in sterling assets) all silver bullion held by them against their banknote issues in exchange for Certificates of Indebtedness. That event gave birth to the Currency Board system in which the Certificates of Indebtedness became the new legal backing system for the issue of banknotes by the note-issuing banks. The note-issuing banks were obliged to purchase the Certificates to back eventual increases in their note issue with the sterling. However, the devaluation of the sterling on the late 1960s caused a great exchange loss to the Exchange Fund of Hong Kong, as a consequence, in 1972 the government of Hong Kong decided to link the HKD to the USD at a rate of HK$ 5.65 to 1 USD and then in 1973, HK$ 5.085 to US$1 with a 2.25% intervention bands around the central rate and the note-issuing banks were allowed, for the first time, to trade the Certificate of Indebtedness with the Hong Kong dollar as well. Subsequently, in 1974, the government of Hong Kong, with the approval of the British Crown, chose to pursue a free float system given that the US dollar was weakening, but after two years the result was a disaster because the exchange rates became too volatile, increasing the number of attacks from speculators as well as disorienting the confidence over Hong Kong future financial center. According to the ex-Chief Executive of the HKMA, Joseph Yam[2] (2000) "The record low point of HK$9.60 in September 1983 was reached after a drop of 13% in just two days."

Figure 1 The Hong Kong's Linked Exchange Rate System 1935-2004

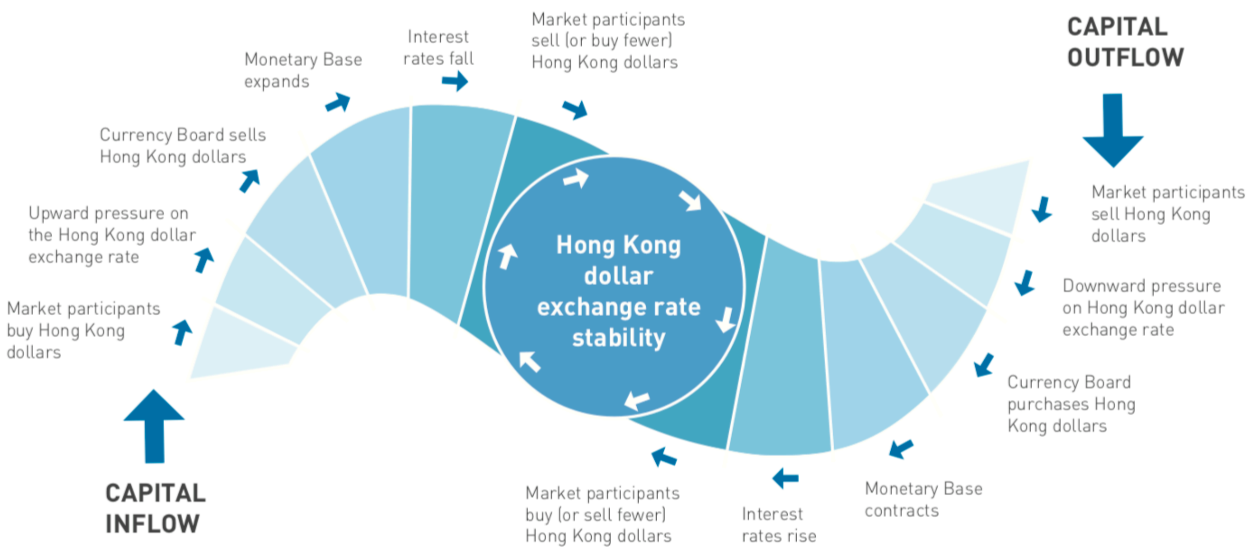


Source: The Hong Kong Government

[2] Joseph Yam was the Chief Executive of the HKMA from 1993 until 2009.

It was due to the deadlock of Sino-British negotiation which caused investors to become more anxious about Hong Kong's future in 1997. In response to that, on 15 October of 1983, the government of Hong Kong established the Currency board system that is still working nowadays. The Currency Board system arranges

Figure 2 The Currency Board System



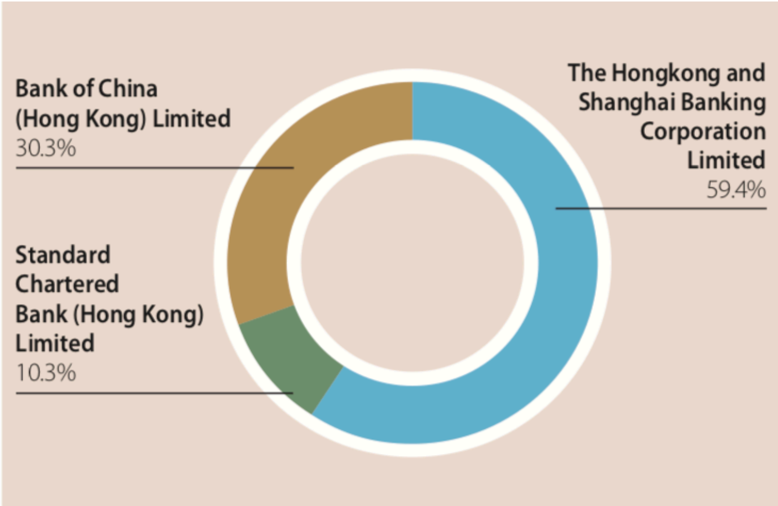
Source: Hong Kong Government

the outflow and inflow of the funds held in the Exchange Funds by automatically adjusting the interest rate. Also, the Currency Board requires the Hong Kong monetary base to be 100% backed by, and changes in it to be 100 per cent matched by the corresponding changes in, US dollar reserves held in the Exchange Fund. In Hong Kong the monetary base includes:

- Certificates of Indebtedness, which serve as a full backing system for the banknotes issued by the note-issuing banks;
- Government-issued notes and coins in circulation;
- The Aggregate Balance which comprises the sum of all the clearing account balances of the banks kept with the Hong Kong Monetary Authority;
- Exchange Funds Bills and Notes (EFBNs) issued by the HKMA on behalf of the Government.

Banknotes are issued by three note-issuing banks, which are the Hongkong and Shanghai Banking Corporation Limited (HSBC), Standard Chartered Bank (Hong Kong) Limited, and Bank of China (Hong Kong) Limited. The following chart depicts the percentage share of the notes issued by each of them in 2016.

Figure 3 Banknotes in Circulation by Note-issuing Banks at the end of 2016



Source: The Hong Kong Government

According to international rankings[3], Bank of China is the 4th top bank in the world, while HSBC is the 23rd and Standard Chartered is 46th.

To operate, these three commercial banks are required by law to purchase certificate of indebtedness by submitting an equivalent amount of Hong Kong dollars at the rate of HK$7.80 to one US dollar to the HKMA for the account of the Exchange Fund. Instead when the HKMA decides to withdraw money from the market, the certificates of indebtedness are redeemed, and the note-issuing banks receive back an equivalent amount of Hong Kong dollars from the Exchange Fund. The same exchange rate system operates for coins, which are issued by the HKMA and distributed by the responsible bank.

It's possible to distinguish two different rates: the linked exchanged rate and the market rate. Meaning that, for example, a slump of the HKD, due to a lack of confidence by investors, will cause an outflow of capital from the Hong Kong market, leading to a depreciation of the market rate of the Hong

[3] https://accuity.com/resources/bank-rankings/

Kong dollar and the contraction of the money supply which in turn results in an increase in the interest rate. One more factor that affects the financial system of Hong Kong is the currency arbitrage. When the market exchange rate deviates from the official rate, the note-issuing banks of foreign traders exploit this opportunity by trading on the differential between the two rates to make a profit. This arbitrage opportunity forces the market rate to align to the Linked Exchange rate.

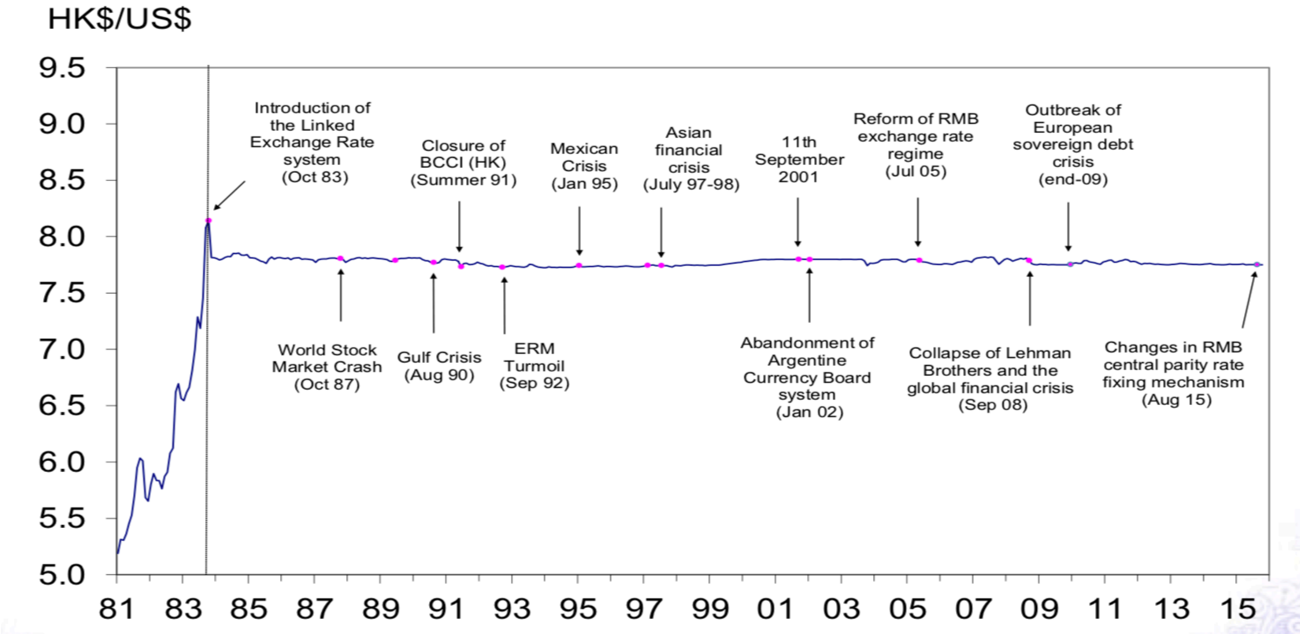
Instead, when the demand for the Hong Kong dollar increases in the market implying a capital inflow that put upward pressure on the exchange rate, the Currency Board will sell Hong Kong dollar to match the demand, then the monetary base increases and the interest rate falls. If the interest rate falls, market participants won't be interested in buying the HKD anymore, or they buy fewer. As a result, the exchange rate regime would be stabilized.

So far, the Linked Exchange Rate System (LERS) has been confirmed as the best solution for Hong Kong. Since its financial sector is so externally oriented, it depends on many other currencies to which it trades with. De facto, the LERS smooths this problem of dependence by reducing the foreign exchange rate risks faced by importers, exporters and international investors. The Link is efficient for the following four reasons:

1. The financial system of Hong Kong reacts quickly to sudden shocks, given that it's flexible. The labor market, property and retail market respond promptly to changes in internal prices and costs. This allows them to maintain the competitiveness among each other and outsiders even in economic shocks;
2. The use of the US$ as fixed exchange rate facilitates international transactions since the US dollar is the most used currency in the world, implying also stability and small fluctuations which in turn benefit investors. Moreover, it makes easier for international companies to estimate costs for investments, hedging the risk from exchange rate volatility;
3. The banking system is robust and solvent, and capable of intervening in case of fluctuations of the exchange rates;

4. Any movement on fiscal policies by the Hong Kong government is backed by a large amount of balance sheet surplus and it seek to have a specific target of budgetary balance over the medium term, which prevents also the case of bankruptcy. This enhances public's confidence towards the Hong Kong dollar which is crucial for Hong Kong as an international center;
5. To support the LERS, the reserves held by the Exchange Fund amounted to US$ 1.835 trillion in 2018 according to A. Kwan[4], which is well enough to resist to economic shocks.

Figure 4 Resilience Against External Shocks



Source: The Hong Kong Government

Indeed, as it is showed in the graph, the Linked Exchange Rate System has been performing very well throughout its years of work, remining stable during the shocks of the 1987 stock market crash, the Gulf War in 1990, the Exchange Rate Mechanism turmoil in Europe in 1992, the Mexican currency crisis of 1994/95, the Asian financial crisis of 1997/98, the 911 Terrorist Attack in 2001, the Abandonment of Argentine Currency Board system in 2002, the reform of RMB exchange rate regime in 2005, the collapse of Lehman Brothers and Global Financial Crisis of 2008, the outbreak of European

[4] Dr. Andy Kwan, South China Morning Post, 2018.

sovereign debt crisis in 2009, and finally the changes in RMB central parity rate fixing mechanism in 2015.

As mentioned by International Monetary Fund (IMF) in 2012, the linked exchange rate system "has generated substantial benefits in terms of monetary and financial stability, built up a stock of credibility over the decades, and kept the real exchange rate of the Hong Kong dollar broadly in line with fundamentals"[5].

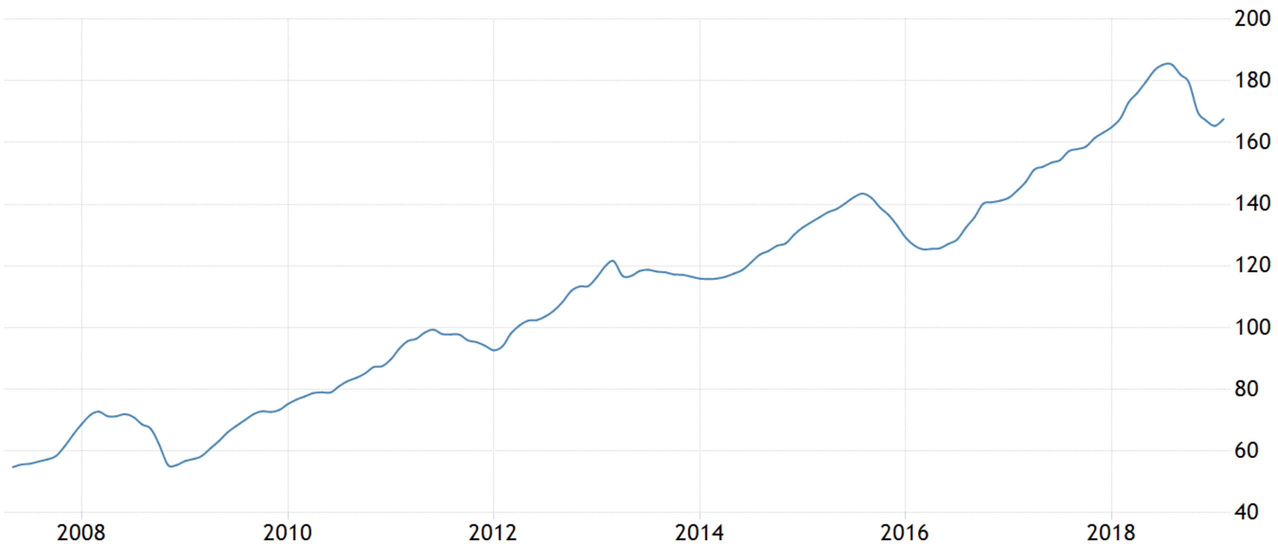
However, some countereffects are also involved. First of all, the LERS reflects on the nominal interest rate, thus on particular economic shocks such as a sudden depreciation of Hong Kong's competitors or a recession in the export market, it could not be efficient enough to maintain a stable exchange rate, as a matter of fact, some other adjustments would need to be made, for instance a cut on the internal prices. Secondly, a macroeconomic issue could arise, that is, given that economic cycles can be different from country to country, a discrepancy between the US and Hong Kong might generate unsuitable local interest rate for Hong Kong citizens. For example, suppose the Federal Reserve wants to increase the US interest rates to prevent an overheating economy, this could disrupt a recovery from recession in Hong Kong.

For instance, when the Federal Reserve decides to expand the US economy by reducing the interest rate, the price level in the US will increase which will consequently encourage imports but discourage exports. Hence, Hong Kong's imports from the US will decline but Hong Kong's exports to the US will rise. Finally, a US expansionary policy will imply a budget surplus in Hong Kong's funds causing the HKD to appreciate independently from the HKMA. So, under the Linked Exchange Rate system, the Hong Kong Monetary Authority cannot perform a monetary policy independently from the one of the Federal Reserve. The best example is the global financial crisis of 2008. The Federal Reserve adopted an

[5] From Hong Kong press releases (2013), see: https://www.info.gov.hk/gia/general/201301/18/P201301180259.htm

expansionary policy through the quantitative easing to stimulate the economy and bring it over a recession phase; in contrast to that, Hong Kong property prices began to rise drastically from that year.

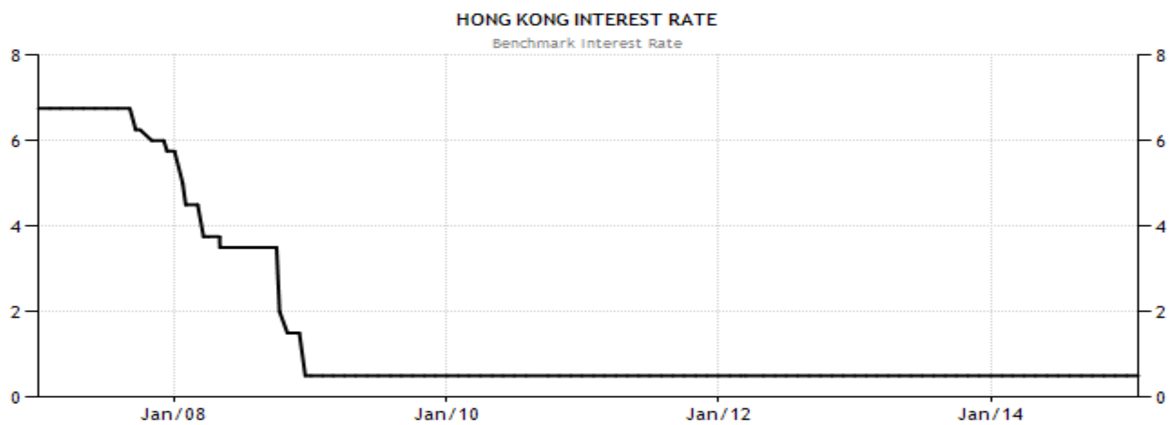
Figure 5 Hong Kong Property Prices, 1996-2012



Source: Tradingeconomics.com

Hence, as the following graph depicts, Hong Kong's low interest rate caused by the US's expansionary

Figure 6 Hong Kong Interest Rate



Source: 1 Tradingeconomics.com

policy is surely one of the significant factors that creates asset bubbles and volatility in Hong Kong.

Finally, one more issue related to the LERS is the large cost of operation when economic shocks occur. That is, during the Asian Financial Crisis of 1997, speculators took advantage of the Currency Board system to exploit the devaluation of the Hong Kong dollar since the Hong Kong's inflation rate was much higher than the one of the US for several years. The Hong Kong Monetary Authority decided to keep the LERS unchanged, causing the stock market to be more volatile; the major Hong Kong index, the Hang Seng Index dropped by 23% and the interbank rate increased by 280%. The crisis ended when the HKMA intervened in the market by pumping more money into the exchange market. Even if the LERS was defended, the cost to do so was dramatically huge and the foreign reserves dropped[6].

Alternatives to the Linked Exchange Rate System

One possible solution could be to keep the Exchange rate fixed to the US$, but at a different rate.

However, changing the exchange rate could decrease the level of credibility of the HKMA, thus attracting speculators for future movements. Furthermore, the loss of credibility could impact the investors relations causing a large outflow of money which would threaten the overall real economy.

Besides, it is suggested to link the HK$ to another currency. Given that the two most globalized currency are the US dollar and the renminbi, the only option left would be to link it to the Chinese currency, also because their economies are considerably integrated. Even if the internationalization of renminbi is spreading more widely, the US dollar is still the currency most traded globally. In particular, the renminbi is overregulated, de facto it is not fully convertible, implying that the capital movements are limited. For transactions outside of mainland China, such as in Hong Kong and Singapore, the Chinese Yuan is fully convertible, however if the transaction involves a party inside China, the regulations set by the Chinese central bank and the Chinese Safe Administration of Foreign Exchange (SAFE), apply.

In addition, the principle of "one country, two systems, two currencies" is well-described in the of the Hong Kong Basic Law article 111, that says, "the Hong Kong dollar, as the legal tender in the Hong Kong

[6] For more information visit: Hoi Yin Tsoi "Should Hong Kong maintain a liked exchange rate system?" (2015) https://commons.ln.edu.hk/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1028&context=ljbfe

Special Administrative Region, shall continue to circulate"[7]. Therefore, for now it is not convenient neither possible for Hong Kong to link its currency to the Chinese one.

Some economists believe that the liquidity of the currency of reference is also important since it allows for swift intervention in foreign exchange markets, at low cost. The US dollar is not the only one that provides this benefit. As a matter of fact, the euro is just behind the dollar in such terms, thus it could be a good option for the peg.

It's even possible to link the HKD to more than one currency which would spread the risk of sudden swings in the exchange rate and interest rate of a single anchor currency. In this case, given that the US dollar plays an important role globally, the best option to do this would be to choose a major currency that is uncorrelated to the dollar but linked to the yuan, which is the euro. There are two key reasons for that.

First, the euro is structurally uncorrelated to the dollar. The two are the most traded currencies with fully flexible exchange rate regimes, but their correlation has been close to zero for the last 10 years. At the same time, the euro appears to be somewhat correlated to the yuan. Data show around 30% correlation between the euro and the yuan since the latter moved from a full peg in 2005, and close to 80% correlation in the last six months, as both currencies have decupled from dollar weakness.

Second, the euro is the second largest reserve currency in the world with 33% of global payments carried out in the currency. In addition, the euro is the currency most commonly traded in foreign exchange and bond markets after the dollar.

Dollarization is another alternative, suitable in case the Hong Kong dollar is crushing. However, that's not the case for now, and more importantly the dollarization would involve significant legal, technical, and transitional issues which would require long preparation time. Lastly, the dollarization, once implemented, it would be very difficult to reverse.

[7] for more, visit: https://www.basiclaw.gov.hk/en/basiclawtext/images/basiclaw_full_text_en.pdf

The ultimate case is the free float exchange rate regime in which the HKMA could implement independent monetary policies to achieve price stability and economic objectives. Nevertheless, exchange rate fluctuations would increase the uncertainty to investment, and it would increase the cost of doing business due to the use of instruments to hedge exchange risk. One more reason is that, in case of large capital outflows or inflows in Hong Kong, the exchange rate would become more volatile and so, as it is mentioned before, the cost of investments would increase especially for countries whose economy depend on Hong Kong's trades. As a natural consequence, the financial market will be also affected, creating volatility such that speculators might be attracted. Even if in the short-run the LERS could intensify a recession due to the impossibility of managing monetary policies, in the long-run the linked exchange rate is more reliable and efficient compare to the free float system.

A more recent approach to what the Hong Kong Monetary Authority should implement is given by professor Hoi Yin Tsoi[8]. In the long run, the HKMA should abolish the Linked Exchange Rate system and seek a managed floating exchange rate. This new system will spread the risk exposure from fluctuations since the Hong Kong dollar will be attached to a basket of currencies instead of just the US dollar. Also, the Hong Kong Monetary Authority will be free to implement monetary policies to resist external shocks; this will enhance the level of confidence by investors. A proof of the success of the manage floating exchange rate system is Singapore's experience. Even if Singapore is ranked forth on the Global Financial Centers Index[9], right behind Hong Kong, the overall economic performance of Singapore has been at the same level of, sometimes even better than, Hong Kong.

However, as it mentioned above, the system would be very complex since the HKMA would have to monitor more currencies simultaneously and adjust the right weights to each of them. Moreover, the Asian Financial Crisis of 1997 revealed that both the Hong Kong exchange rate and the Singapore exchange rate remained stable even though they had different exchange rate system, compare to Thailand in which during the devaluation period, the government's decision to no longer peg the local currency (Baht) to the U.S. dollar (USD), resulted in a dramatic decline in the stock market prices. Then,

[8] Hoi Yin Tsoi: "Should Hong Kong maintain a liked exchange rate system?" (2015)
[9] Global Financial Centers Index: https://en.wikipedia.org/wiki/Global_Financial_Centres_Index

to stabilize the Asian economy, the IMF provided $110 billions in short-term loans to the most affected Asian countries, including Thailand, Indonesia, and South Korea.[10]

1.4 Banking Stability

The core of Hong Kong's financial stability is the banking system within its regulations.

As a robust banking system, it is crucial for the normal functioning of the LERS, that the HKMA continues to closely monitor banks' credit, liquidity and interest rate risk management and stress-test results, and strengthens its supervisory efforts on household, corporate, and Mainland- related lending to ensure the resilience of the banking sector, particularly in the event of a global economic shock. Given that the Linked Exchange Rate System doesn't allow the Hong Kong Monetary Authority to implement independent monetary policies with respect to the Fed, the Hong Kong Banking sector must be strong enough, and the most important factor is liquidity.

The structure of Hong Kong's banking system consists of three tiers of 190 authorized institutions (AIs): Licensed Banks (154), Restricted Licensed Banks (RLBs) (19), and Deposit-taking companies (DTCs) (17).

Licensed Banks are the only one allowed to operate current and savings account, to accept deposits of any size and maturity from the public, and to pay and collect cheques. The largest banks incorporated in Hong Kong are: Bank of China Limited (BoC), Hong Kong and Shanghai Banking Corporation Limited (HSBC), Bank of East Asia Limited (BEA), Hang Seng Bank Limited, and Citibank.[11]

Instead, some of the banks incorporated outside Hong Kong that fall in this category are: Agricultural Bank of China, Bank of China, Banco Santander, BNP Paribas, Barclays Bank PLC[12], Deutsche Bank, Commerzbank, Banca Monte dei Paschi di Siena (MPS).

[10] [10] For more visit: https://www.investopedia.com/terms/a/asian-financial-crisis.asp
[11] To check the lists of the Tier Banks, visit: https://www.hkma.gov.hk/eng/key-functions/banking-stability/banking-policy-and-supervision/three-tier-banking-system.shtml
[12] PLC = Public Limited Company

The second group is the Restricted Licensed Banks which operate in merchant banking and capital market activities such as long-term debt, and they are allowed to take deposits of any kind of maturity from HK$ 500,000 and above. Some of the largest banks in this category are: Bank of Shanghai Limited, Goldman Sachs Asia Bank Limited, and Morgan Stanley Asia International Limited.

The third division is composed by the Deposit-taking companies which engage in different activities related to consumer finance and securities business. They are either owned or associated by banks and they may take deposit of HK$ 100,000 or above, with an original term of maturity of at least three months. An example could be the incorporated deposit-taking company BPI International Finance Limited which offers banking services, such as accepting deposits while it works as a subsidiary of Bank of the Philippine Islands.

Overseas banks may also establish a local representative office in the Hong Kong territory. However, this office cannot perform banking activities and its role is concentrated only on intercommunication between the bank and its customers in Hong Kong. For instance, the Italian bank Banco Popolare di Milano (BPM) doesn't conduct operations in Hong Kong, but they have offices for representation purposes.

Banking supervision is performed by the Hong Kong Monetary Authority, which aims to provide the safety of depositors and the overall stability of the system under the Banking Ordinance[13]. Stabilizing a banking system is challenging because a banking sector is affected by a trade-off between safety and development. In other words, given that Hong Kong is externally-oriented, the players on the banking sector are widely spread from all over the world. This implies that the government needs to be vigilant, but at the same time tolerant in order to allow the banking system to grow at a secure path and try to avoid volatility.

The Banking Ordinance includes the authorization criteria under the Guide to Authorization, which provides guidelines and policies of the Hong Kong Monetary Authority in order to either accept or refuse candidate banks. In case of failure to meet those requirements, the Hong Kong Monetary Authority's power of revocation would become exercisable in respect of that institution.

[13] Banking Ordinance: https://www.elegislation.gov.hk/hk/cap155

The Guide to Authorization is divided in 10 chapters: the first one is just an introduction to the HKMA, then, chapter 2 to chapter 9 focus on issues related to authorized institutions through a set of guidelines which explains how the Hong Kong Monetary Authority regulates and supervises those institutions. Finally, chapter 10 delineates the legal framework for the supervision, approval as well as the revocation criteria of money brokers.[14]

The Hong Kong Monetary Authority supervises the authorized institutions in a continually approach. In 1999, the HKMA introduced a risk-based supervisory approach to Hong Kong in order to ensure that the authorized institutions establish a suitable risk management system in place to identify, measure, monitor and control risks inherent in their business operations. The aim of this strategy is to deduct and tackle issues at an early stage, reducing the risk of bank failure, and particularly avoiding an overall recession (as the case of the crash of the Lehman Brothers that caused the Global Crisis of 2008) since the financial sector is interconnected nowadays. The HKMA attempts to avoid eight major risks: credit risk, interest rate risk, market risk, liquidity risk, operational risk, legal risk, reputation risk and strategic risk. Those risks are measurable throughout the CAMELS which is an international rating system under the BASEL III[15], that consists of a set of indicators: Capital Adequacy Ratio (CAR), Asset Quality, Management, Earnings, Liquidity, and Sensitivity to risks. The overall rating is assigned by the Supervisory authority and it is expressed by a number between 1 (the best) and 5 (the worst). Banks that are given an average score of less than two are considered to be high-quality institutions. Banks with scores greater than three are considered to be less-than-satisfactory institutions. Capital Adequacy Ratio is intended to measure a bank's available capital with respect to its exposure to credit risk, market risk and operational risk. The CAR is the sum of the 3 tiers (Regulatory Capital) divided by the Risk-Weighted Assets or Risk Adjusted Assets. In Hong Kong, incorporated authorized institutions must maintain a Common Equity Tier 1 capital ratio of not less than 4.5%, a Tier 1 capital ratio of not less than 6% and a Total capital ratio of not less than 8%. On the other hand, the risk-weighted assets depend on the level of risk; the higher the risk the higher the weights. For

[14] Guide to Authorization Hong Kong: https://www.hkma.gov.hk/eng/key-functions/banking-stability/guide-authorization.shtml
[15] Basel III is a package of regulatory reforms introduced by the Basel Committee on Banking Supervision. For more visit: https://www.bis.org/bcbs/

example, secured residential lending are given a percentage of risk of 30% due to the warranty, instead corporate bonds are given a risk of 100%.

Asset Quality is an evaluation in order to assess credit risk. In Hong Kong, asset quality is measured based on the classification system which is divided in:

I. Pass: loans for which borrowers are current in meeting commitments and for which the full repayment of interest and principal is not in doubt;
II. Special Mention: borrowers are experiencing difficulties, and which may threaten the authorized institution's position;
III. Substandard: borrowers are experiencing definable weaknesses that are likely to imperil repayments;
IV. Doubtful: Loans for which collection in full is improbable and the authorized institution expects to sustain a loss of principal and/or interest;
V. Loss: uncollectable loans (after the realization of the collateral).

Management is a more subjective rating system since it determines whether an institution is able to properly react to financial stress and to conduct daily operations.

The HKMA takes also a close look at the authorized institutions' earnings to assess whether a bank is able to expand. Supervisors rates banks by analyzing their growth, stability, valuation, net interest margin, return on equity (ROE) and return on asset (ROA).

One more step is to evaluate the liquidity of the authorized institutions. The liquidity requirements are provided in the Banking Liquidity Rules (BLR) of the Banking Ordinance, which sets out the conditions depending on the category on which the authorized institution falls. Category 1 institutions are the ones that either have a significant international exposure or are significant for the general stability of Hong Kong banking system. These institutions are required to comply with the requirements relating to the Liquidity Coverage Ratio (LCR) which is a generic stress test that assess the proportion of highly liquid assets to the total net cash flows for short-term. And, according to Basel III standards, this ratio has been increasing year by year since its implementation in 2016, when it was 70% coverage. In 2019, authorized institutions must maintain a level of LCR equal to 100%. Moreover, category 1 has to meet the requirements of the Net Stable

Funding Ratio (NSFR) which is the total available stable funding (ASF) divided by the total required stable funding (RSF). This ratio must be equal or exceed 100%. The total available stable funding is the proportion of a bank's capital and liabilities that will remain with the institution for more than one year (reliable) and the total required stable funding is the amount of stable funding that is required to hold given the liquidity characteristics and residual maturities of the assets and the contingent liquidity risk arising from the off-balance sheet exposures. An RSF factor of 100% means that the asset or exposure needs to be entirely financed by stable funding because it is illiquid. In good times, banks may expand their balance sheets quickly by relying on relatively cheap and abundant short-term wholesale funding. The NSFR aims to limit this and in general seeks to ensure that banks maintain a stable funding structure.

On the other hand, category 2 institutions must comply with the Liquidity Maintenance Ratio (LMR) which is expressed in percentage of liquefiable assets to the amount of the institution's qualifying liabilities (after deductions) over a calendar month.

Lastly, supervisors analyze an institution's sensitivity to market risk by monitoring the management of credit concentrations. That is, supervisors are able to check how lending to specific industries (agricultural, medical, energy sector and credit card) affects an institution. Exposure to foreign exchange, commodities, equities and derivatives are also included in rating the sensitivity of an authorized institution to market risk.

The HKMA conducts different supervisory activities: on-site examinations occur with a frequency that ranges from one to three years depending on the CAMEL rating. Those examinations are equal for all the authorized institutions irrespectively of their place of incorporation and whether they're overseas branches and subsidiaries; instead, off-site surveillance includes regular analysis of statistical returns and an annual comprehensive review of the performance and financial position of the authorized institutions; the annual off-site review is usually followed by a prudential meeting in which the HKMA clarifies specific issues related to each authorized institutions. External institutions play an important role because they conduct an independent examination of the authorized banks usually once a year. They focus more on the technical part to certify the financial situation of the institution; however, they must follow the Banking Ordinance rules.

1.5 Exchange Fund

Hong Kong's Exchange Fund was established by the Currency Ordinance of 1935 (later renamed the Exchange Fund Ordinance). Since its beginning, the Fund has held the backing to the note issue of Hong Kong. Originally, the Fund was held in gold, silver and British pounds. Overtime, the Fund obtained a more important role, beginning to hold the official reserves of Hong Kong mainly in foreign currency assets including cash, short-term deposits, foreign government bonds, equities and gold. The Fund is managed by the Hong Kong Monetary Authority (HKMA) under powers delegated by the Financial Secretary to the Monetary Authority under the Exchange Fund Ordinance.

The Exchange Fund Ordinance stipulates the main uses of the Fund, which consists of the safeguard of the value of the Hong Kong dollar, and the aim to maintain the integrity and stability of the monetary and financial systems of Hong Kong, as well as, its reputation as an international financial center. The fund performs open market operations, when necessary, in order to maintain monetary stability.

The key objectives of the Fund’s investment strategy are:

- to preserve capital;
- to ensure that the monetary base is fully backed by highly liquid short-term US$ denominated securities;
- to ensure enough liquidity to maintain monetary and financial stability;
- to carry out an investment return that will preserve the long-term purchasing power of the asset.

The Fund’s portfolio is managed in two distinct categories:

1) Backing Portfolio which consists of short-term, highly liquid Us dollar denominated securities to fully back the monetary base; it accounts for about 30% of the assets of the Fund and it is managed internally by the direct investment division of the HKMA; and
2) Investment Portfolio which consists of longer-term investments to preserve the value of the Fund for the future benefit of the Hong Kong’s citizens, is jointly managed by the direct investment division and about 30 external managers appointed by the HKMA.

1.6 Hong Kong as an International Financial Centre

The aim of the Hong Kong's government is to maintain its internationality through the Hong Kong Monetary Authority in cooperation with other authorities. They are responsible for the maintenance and development of Hong Kong's financial infrastructure, which is essential to the stability and integrity of the monetary and financial systems. Hong Kong's infrastructure is based on a multi-currency, multi-dimensional platform, and it has been improving to smooth payment flows, enabling banks to use liquidity more efficiently. The platform is used to handle real time transactions in major foreign currencies and the Hong Kong dollar. As a matter of fact, the HKMA has entered into repurchase agreements with many central banks or monetary authorities including Australia, Mainland China, Indonesia, Japan, South Korea, Malaysia, New Zealand, the Philippines, Singapore and Thailand.

Particularly, on 20 January 2009, The HKMA and The People's Bank of China (PBoC) signed a currency swap agreement, under which short-term liquidity support can be provided to the Mainland operations of Hong Kong banks and vice versa in case of need. The agreement also helps the development of renminbi-denominated trade transactions between Hong Kong and the Mainland.

Even if, under the "One Country, Two Systems" Principle, through which China resumes the exercise of sovereignty over Hong Kong on 1 July 1997, financial and monetary systems of Hong Kong and Mainland China are kept mutually independent, China has backed these commitments through practical co-operation with Hong Kong. The HKMA and the PBoC work closely on matters of common concern, including on-going discussions on monetary issues and the establishment of links between China's and Hong Kong's payment systems. In 2003, Hong Kong and China signed an agreement named Closer Economic Partnership Arrangement (CEPA) which enhances the cooperation between the HKMA and The People's Bank of China. It refers to a free trade agreement to which qualifying products, companies and residents of Hong Kong enjoy preferential access to the mainland Chinese market. The CEPA objectives are the following:

- progressively decrease or eliminate tariff and non-tariff barriers on substantially all the trade in goods between the two sides;

- progressively achieve liberalization of trade in services through reduction or elimination of substantially all discriminatory measures;
- promote trade and investment facilitation.

Recently, the Chinese government has been working to introduce the Greater Bay Area which involves the south-east Chinese region Guangdong[16], Hong Kong and Macao in order to create a cross border mobile payments system, eWallets, account onboarding and wealth management products. Hong Kong is the major financial center in Asia which combines the manufacturing strengths of the nine cities of Guangdong which will boost the regional development.

[16] The region Guangdong includes nine cities: Shenzhen, Dongguan, Guangzhou, Zhaoqing, Foshan, Zhongshan, Jiangmen, Zhuhai, Huizhou

Chapter 2 Present and Future of the Hong Kong dollar

2.1 The Chinese currency: Renminbi (Yuan)

China was one of the first nations on the earth to replace the barter system with a currency. During his dynasty, the first Chinese emperor Qin Shi Huang implemented a uniform monetary system between 259B.C. and 210 B.C. He revoked all the types of currency that the Chinese were using up to that point and introduced the copper coin as China's official currency.

Later on, in 9th century, China introduced paper currency. In spite of its practicality, coinage was extremely heavy at that time and paper money was lighter and easier to carry. This laid the foundations for the leather and paper bank notes, which were used parallel to the copper coins until the late 19th century when the yuan (renminbi) was introduced as China's official currency.

The renminbi was first issued on December 1, 1948, by the Chinese Communist's party People's Bank of China. That was a strategic decision since at that time, the Chinese Communist's party was fighting the civil war with the Chinese Nationalist Party, which had its own currency, and the first issuance of the renminbi was used in order to stabilize Communist-held areas.

The issuance of renminbi has occurred few times after the Chinese Communist's party victory. In 1955, the People's Bank of China issued its second series of the renminbi that substituted the first at a rate of one new RMB to 10,000 old RMB, which has remained unchanged since.

In 1962, the PBOC emitted a new renminbi in which the multi-color printing technology and hand-engraved printing plates were introduced for the first time. In this period, the RMB's exchange value was unrealistically set with many European currencies which created a large underground market for foreign exchange transactions.

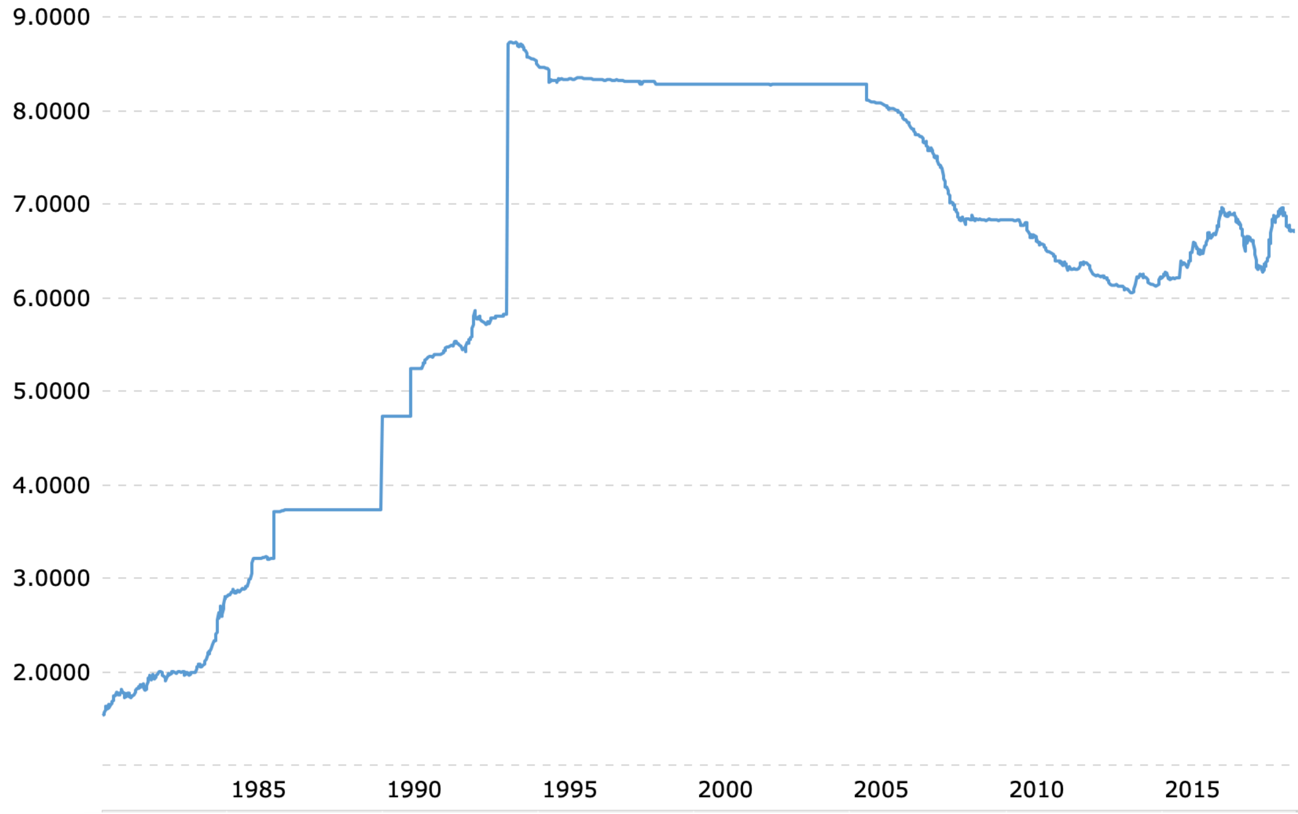
With China's economic reforms in the 1980s, the RMB was devalued and became more easily traded, creating a more realistic exchange rate. In 1987, a fourth series of RMB was issued featuring new technologies such as water mark, magnetic ink, and fluorescent ink. In 1999, a fifth series of renminbi was issued, featuring Mao Zedong on all notes.

Nowadays the Chinese formal currency name is renminbi (RMB), but the ISO code is CNY (which is an abbreviation of "Chinese yuan"), and it is used in currency trading markets. However, for off-shore transactions, the Chinese currency is the CNH which stands for "Chinese yuan Hong Kong" since at the beginning it was launched for Hong Kong only.

During its lifetime, the Chinese renminbi has been pegged to the US dollar and a basket of currencies alternately.

The chart on the next page shows the exchange rates between US dollar and Chinese yuan (CNY) from 1980 to 2019. The vertical axis represents the equivalent value of one US dollar over the years. From 1997 to 2005, the Chinese government pegged the RMB to the US dollar at a rate of 8.3 RMB per dollar, de facto, the line is approximately flat. On July 2005, the PBOC ended the dollar peg, revaluing the yuan to 8.11 per dollar. It also introduced a narrow trading band which has been widen over the past decade, starting at +/-0.3% and finally reaching +/-2% by March 2014. So, the yuan doesn't trade freely like other major currencies such as the dollar and the pound.

Figure 7 : US dollar to Chinese Yuan exchange rates from 1980 to 2019



Source: Macrotrends.net

Every morning, China's central bank sets a "band" within which the yuan's value is only allowed to move 2% up or down.

Nowadays, the price of the yuan is set by a basket of more than 20 currencies, many of which are either pegged to the dollar or managed implicitly against it. Consequently, the value of the yuan is effectively the opposite of a U.S. dollar index; when the dollar goes up, the yuan goes down, and vice versa.

However, most investors are still skeptical about China's currency stability. To encourage other countries to begin using the yuan as a trading currency, the Chinese government has improved access to yuan financing by allowing a pool of offshore liquidity to develop in Hong Kong. Nevertheless, this is not sufficient according to Tom Holland (2019), China should implement a secure risk-free asset denominated in yuan which must be liquid and convertible. Thus, global investors would have an alternative to US Treasure bonds and German Bunds, as a safe store of value. Also, the Chinese bonds should offer higher returns with respect to its competitors to attract more investors. Finally, the big step towards a more stable and global currency would be for China to persuade commodity exporters, particularly oil companies, to accept payment for their shipments in yuan. To do this, China must convince producers that they can do more with the yuan they earn than simply use it to buy manufactured goods from China.

So far, China's successes have been modest. Qatar is accepting some gas payments in yuan. And Russia last year moved around US$50 billion of its foreign reserves from US dollars to yuan.

What's more, even though, China has been promoting the use of its currency globally and the PBOC holds the largest amount of US dollar (around $3.1 trillion), the yuan is not yet considered fully convertible because the Chinese government has maintained strict rules on the financial markets, as a matter of fact, investors who exchange dollars or other foreign currency for yuan must sell them directly to China's central bank, which incorporates them into the country's foreign reserves.

2.2 The Chinese Central Bank: People's Bank of China

The People's Bank of China (PBOC) was founded after the Chinese Communist Party's victory and the creation of the People's Republic of China in 1948, by merging the Huabei Bank, the Beihai Bank and the Xibei Farmer Bank. When China began to open its economy to foreign investors in the 1980s and '90s, the country began to accumulate large amounts of dollar reserves, de facto, the PBOC is currently the largest central bank in the world with approximately $3.1 trillion in foreign exchange reserves[17] in 2019.

The People's Bank of China is located in Beijing, but it has nine regional branches located in Tianjin, Sjhenyang, Shanghai, Nanjing, Jinan, Wuhan, Guangzhou, and Xi'an, two operations offices in Beijing and Chongqing, 303 municipal sub-branches and 1,809 county-level sub-branches. It is run by a board of directors coordinated by the governor Yi Gang and it represents China in official international financial organizations such as the International Monetary Fund (IMF), the World Bank and the Asian Development

[17] CEIC data: https://www.ceicdata.com/en/indicator/china/foreign-exchange-reserves

Bank (ADB). As a result of the reforms, the PBOC carries out its tasks according to Western models of autonomy, control and supervision of the banking system.

The PBOC outlines laws and regulations for its financial functions, including implementing monetary policy to maintain financial stability and economic growth in China. It also sets interest rates, regulates financial markets, issues and administrates the circulation of the renminbi. Moreover, the POBC regulates the inflows and outflows of money in the interbank market. As a matter of fact, it intervenes directly by buying and selling the currency, managing foreign exchange and recording foreign currency transactions. As for the Hong Kong Monetary Authority, China has used a portion of its reserves to influence the value of its currency through foreign exchange market interventions. To strengthen the yuan, the Chinese central bank sells foreign currency reserves (typically dollars) into the market. Instead, if the country wants to weaken its currency, it uses its local currency to buy foreign currency.

On the other hand, the PBOC works differently from the European Central Bank and from the Federal Reserve because it is not independent of the ruling Communist Party, so it ultimately takes its orders on monetary policy from China's top leaders.

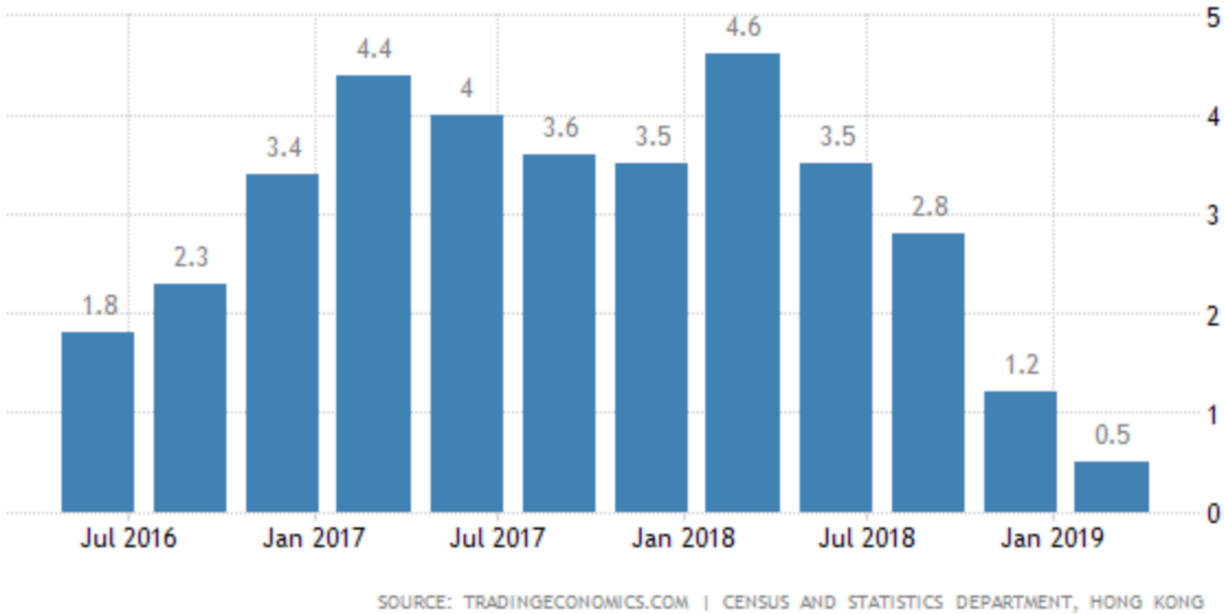
2.3 China and Hong Kong Relations

The relationship between China and Hong Kong is very complex. It includes politics, economics, trade, laws, and, above all, the people. On one side, there is Hong Kong which is considered the world's freest economy, while on the other side, there is China, a communist country which has been opening up its economy globally quite recently.

Chinese and Hong Kong economies have always been divergent in that the former has the second largest economy in the world, at $12.2 trillion and relies on heavy industry development, ramping up the country's industrial and service output over the years. Instead, the economy of Hong Kong has faced a drastic transition in the past decade as services took over manufacturing, shifting it to the mainland. As a result, the contribution of manufacturing in the GDP has declined over the years and agriculture doesn't add value to the GDP, as Hong Kong is not rich in natural resources and depends on imports for food and raw materials. As a result, Hong Kong service sector accounts for the 92.7% of the GDP. Among Hong Kong services, the most important are wholesale and retail trade (25% of GDP); public administration and social services (17%); finance and insurance (16%); real estate and business services (11%); ownership of premises (10%) and transportation and postal services (6%). While, both information and communications and food and accommodation account together for 8% of the GDP. Construction represents 3.5% and lastly, electricity, water and gas supply, waste management and manufacturing accounts for 3.4%.

The Hong Kong gross domestic product has been growing at an average annual pace of 5.19% from 1974 until 2019, and in the first quarter of 2019, it has advanced 0.5 percent year-on-year, nevertheless it has been facing a negative trend since January 2018, as shown in the following chart. The growth rate was the weakest since the third quarter of 2009, when the economy shrank 1.7 percent. Private consumption and government spending lessen, and fixed investment continued to shrink.

Figure 8 Hong Kong GDP Annual Growth Rate



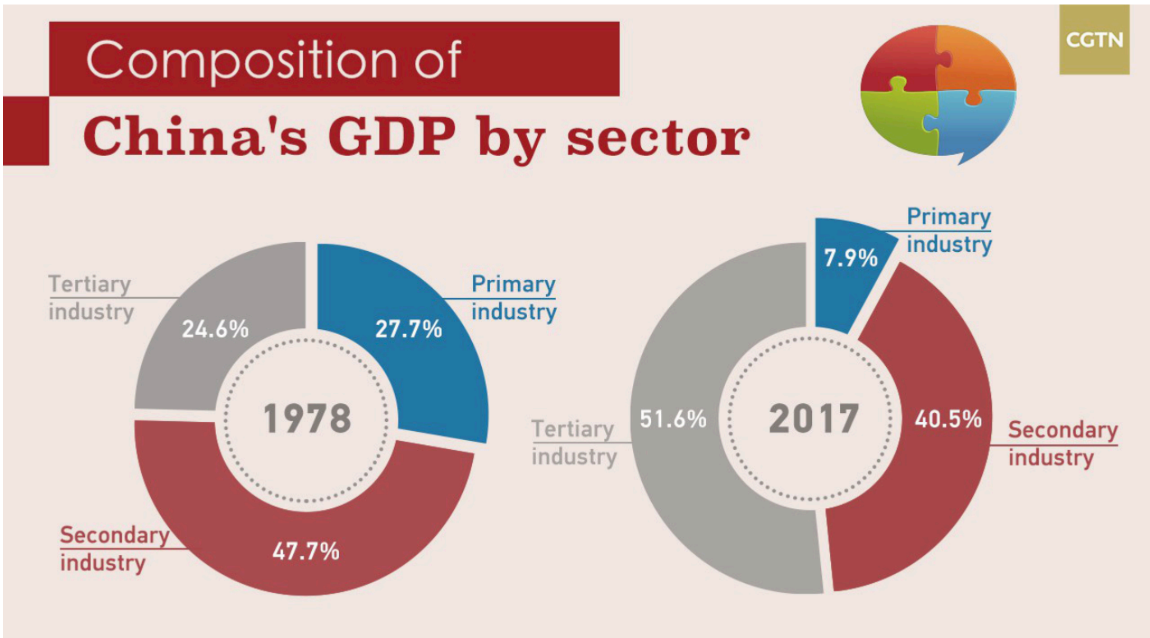
Source: Tradingeconomics.com

Since 1978, the Chinese government has worked on opening-up policies which led to a significant transformation of its economy. Deng Xiaoping, the Chinese political leader after Mao Zedong, introduced

China to capitalist market reforms and moved away from a centrally-planned economy. As the chart below shows, in the past, China's GDP was driven mostly by the secondary industry which accounted for 47.7%. In 2011, the government established a five-year plan to increase the service sector, which de facto, more than doubled in 2017 accounting for 51.6%.

transformation of its economy. Deng Xiaoping, the Chinese political leader after Mao Zedong,

Figure 9 Composition of China's GDP by sector.



Source: National Bureau of Statistics

Furthermore, given its strategic geographical location, well-developed infrastructure and international communication network, Hong Kong plays a pivotal role for the trade between the Mainland and the rest of the world. In 2017, the value of goods re-exported through Hong Kong from and to the Mainland was HK$3,397.2 billion (US$435.9 billion), accounting for 88.6% of Hong Kong's total re-export trade value.

China's average growth rate accounts for 10% approximately, however, last year it experienced the slowest rate in nearly three decades, as it is shown on the graph below. There is more than one reason for the slowdown. A rapidly aging population, a falling birth rate, a tightening Federal Reserve, and a slowing global economy have combined to put the brakes on China's economy

Figure 10 China's GDP Annual Growth Rate

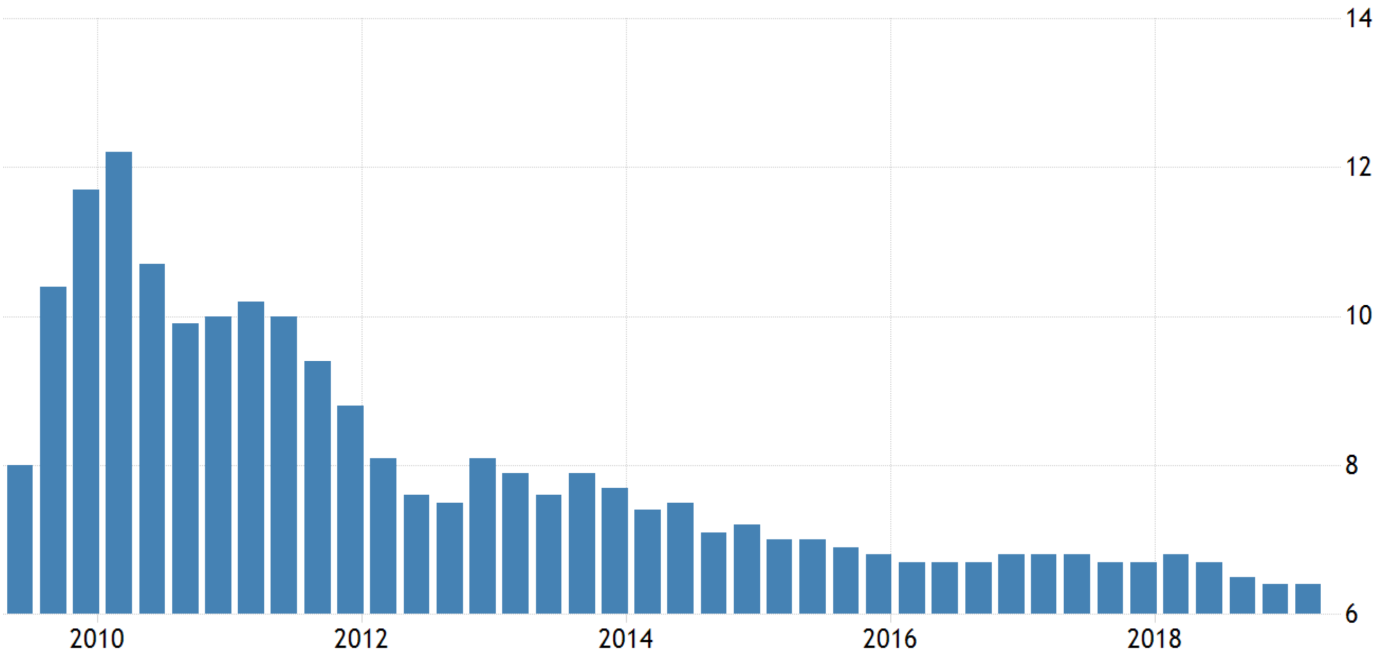


Figure 10: Source: Tradingeconomics.com

Lately, Hong Kong's economy has been converging towards the Chinese one; in fact, the latter has gradually increased its investments on Hong Kong. In 1978, Chinese trading shares were 9.3% of Hong Kong global trade, while in 2017, they reached 50% which amounts to US$530.7 billion[18]. By being Hong Kong's largest trading partner since 1985, China signed the "Mainland and Hong Kong Closer Economic Partnership Arrangement" (CEPA) in June 2003, providing tariff free treatment to all Hong Kong-origin goods meeting the CEPA rules, thus furthering the development potential of the trade between the two places.[19]

[18] Data from the Trade and Industry Department of Hong Kong: https://www.tid.gov.hk/english/aboutus/publications/factsheet/china.html

[19] CEPA: for more, see Chapter 1.

Figure 11 Hong Kong and China GDP Annual Growth Rates

Source: Tradingeconomics.com

Moreover, as we can see from the chart above, Hong Kong and China's GDPs comove together. As a matter of fact, just like China, Hong Kong has had the slowest annual growth in nearly ten years, in 2019 first quarter. The economy grew 0.5%in the January-March quarter from a year earlier, the weakest increase since the third quarter of 2009, compared with a revised 1.2% pace of growth in the final quarter of 2018, an advance government estimate showed that the slowdown was mainly due to a decrease in exports and investment. In particular, Hong Kong's GDP has been hit by China's slowing economy and the U.S.-China trade war, along with cooling property prices and volatile stock markets.

Regarding infrastructure relation between China and Hong Kong, the plan is coherent with the "one country, two systems" principle that has been analyzed before. For example, in 2011 the Chinese government started to build a mega bridge, officially called Hong Kong–Zhuhai–Macau Bridge that connects the three countries China, Hong Kong and Macau through 55 kilometers including the longest undersea tunnel. The aim of China is to facilitate and expedite the transportation of visitors as well as to increase its presence on those countries.

In contrast, events like the one described above have raised critics regarding Hong Kong's national identity. This could make an integration between the two countries more problematic. "Beijing is speeding up the homogenization of Hong Kong into another Chinese city and escalating its crackdown on Hong Kong freedom," Ho-Fung Hung[20] said in an interview. "The physical infrastructure is definitely an integral part of the homogenization, as one common characteristic of these projects is to erode the Hong Kong–mainland China border."

Even the British Foreign Secretary Boris Johnson expressed concern that the "one country, two systems" principle was under threat, and urged respect for "the established constitutional framework for any change to the Basic Law", nevertheless, the Chinese foreign ministry spokesman said: "Britain has no power to intervene, there is no room for interference."[21]

Some other critics are related to the fact that Hong Kong citizens do not have free word on the political system of their country. As a matter of fact, there are no free elections in selecting the region's highest office, which instead is appointed by the Chinese government, and as Claudia Mo[22] mentioned "If Beijing wants something done in Hong Kong, they just do it."

In conclusion, Hong Kong has maintained a complicated, and codependent, relationship with the mainland. China has been Hong Kong's largest trading partner for more than 30 years and, in turn, Hong Kong is China's third largest trading partner, behind only the United States and Japan. However, it is difficult to forecast the future of the two countries, particularly after the 2047.

[20]Ho-Fung Hung is a political-economy professor and expert on Hong Kong–China relations at Johns Hopkins University
[21] Wendy Liu "Hong Kong balances 'one country, two systems' in relations with Britain", South China Morning Post
[22] Claudia Mo is a pro-democracy Hong Kong lawmaker who has been a vocal critic of the infrastructure projects

2.4 Hong Kong Dollar Peg

As we have mentioned in chapter 1, the Hong Kong dollar is yet pegged to the US dollar.

The Hong Kong dollar has been linked to the US dollar since 1983, at a rate of HK$7.8 with a trading band of 7.75-7.85 since 2005. Earlier, we have proved that the Linked Exchange Rate System (LERS) resulted strong enough to face crisis such as the Asian financial crisis of 1997, the 911 Terrorist Attack in 2001, the reform of RMB exchange rate regime in 2005 and the Global Financial Crisis of 2008.

However, the Hong Kong dollar peg has become more fragile recently, as a matter of fact, the Monetary Authority has intervened in the exchange market repeatedly.

First of all, it is important to recall the role of the Hong Kong Monetary Authority in the exchange market. To keep the peg fixed within a narrow band of 7.75 - 7.85 HKD per one US dollar, the HKMA either buys or sells its currency or the US dollar in the exchange market. When the Hong Kong Dollar gets stronger (and so it gets closer to the 7.75 edge) the HKMA injects more Hong Kong dollar in the exchange market and buys the US dollar in order to decrease the value of the former. On the other hand, when the Hong Kong dollar gets closer to the top edge 7.85 (and so it devaluates with respect to the US dollar), the HKMA sells US dollar and buys HKD, in order to increase the value of the latter by draining liquidity from the exchange market.

The peg has become weak due to the strengthening of the US dollar as well as higher short-term interest rates. This implied a large amount of capital flow from Hong Kong into the US.

Since late 2015, the US Federal Reserve's tightening has increased the value of the US dollar. A good indicator to explain this uptrend is the US dollar index (DXY). The index is currently calculated by factoring in the exchange rates of six major world currencies, which include the euro, Japanese yen, Canadian dollar, British pound, Swedish krona and Swiss franc. The euro holds the most weight versus the dollar in the index, aggregating 57.6 percent of the weighting followed by the yen with about 14 percent, pound 11.9 percent, Canadian Dollar 9.1 percent, Swedish Krona 4.2 percent, and Swiss franc 3.6 percent. When the index goes up, the dollar gets stronger compare to the global market, and vice versa when it decreases. The dollar automatically strengthens when the euro weakens. That is because the euro makes up 57.6 percent of the value of the U.S. dollar index. This means that whatever makes the euro weaker will make the dollar stronger and vice-versa. The strengthening of the US dollar is shown in the chart below, representing the dollar index (DXY), which has been up over 21% since 2014.

Figure 12 DXY chart, 2014-2019

Source: Tradingview.com

The reasons behind the strengthening of the US dollar are three.

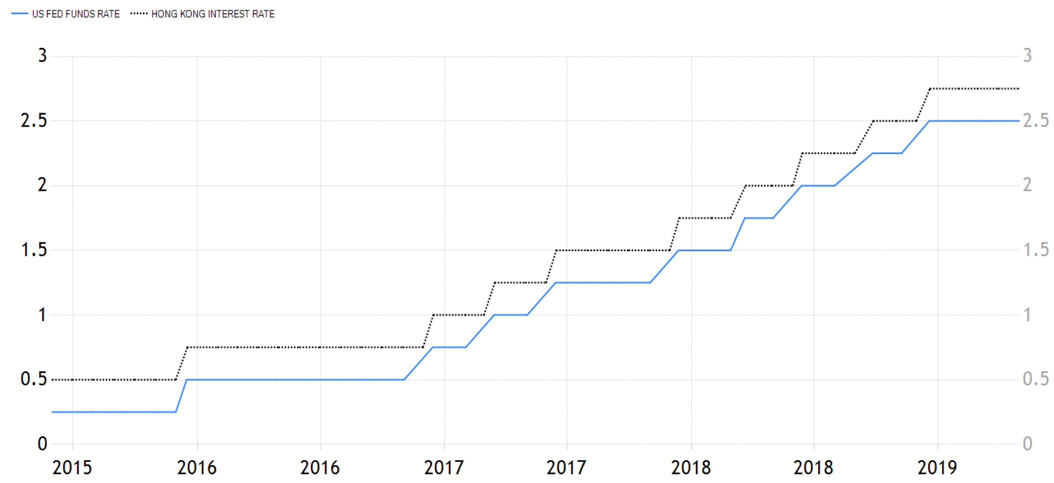
Firstly, the Fed ended its expansive monetary policy as the economy improved. It stopped adding to the money supply. This constrained the supply of the dollar and increased its value.

Secondly, the European Central Bank has lowered the value of the euro by decreasing the interest rate, reaching the zero-lower bound since 2016. This and the overall political instability of Europe have frightened investors recently.

Thirdly, the Fed has raised interest rates since December 2015 which strengthened the value of the dollar. It meant that U.S. Treasury notes would attract higher interest rates in the short-term, increasing the demand for dollars. And, investors earned a higher rate of return on dollar deposits than on euro deposits, which paid lower interest rates.

Moreover, the Linked Exchange Rate System (LERS) implies the Hong Kong Monetary Authority to follow the US economic policies. Thus, as the Fed increases the interest rates, Hong Kong applies the same policy in order to maintain the same exchange rate. We can see that on the following graph.

Figure 13 US and Hong Kong Interest Rates



Source: Tradingeconomics.com

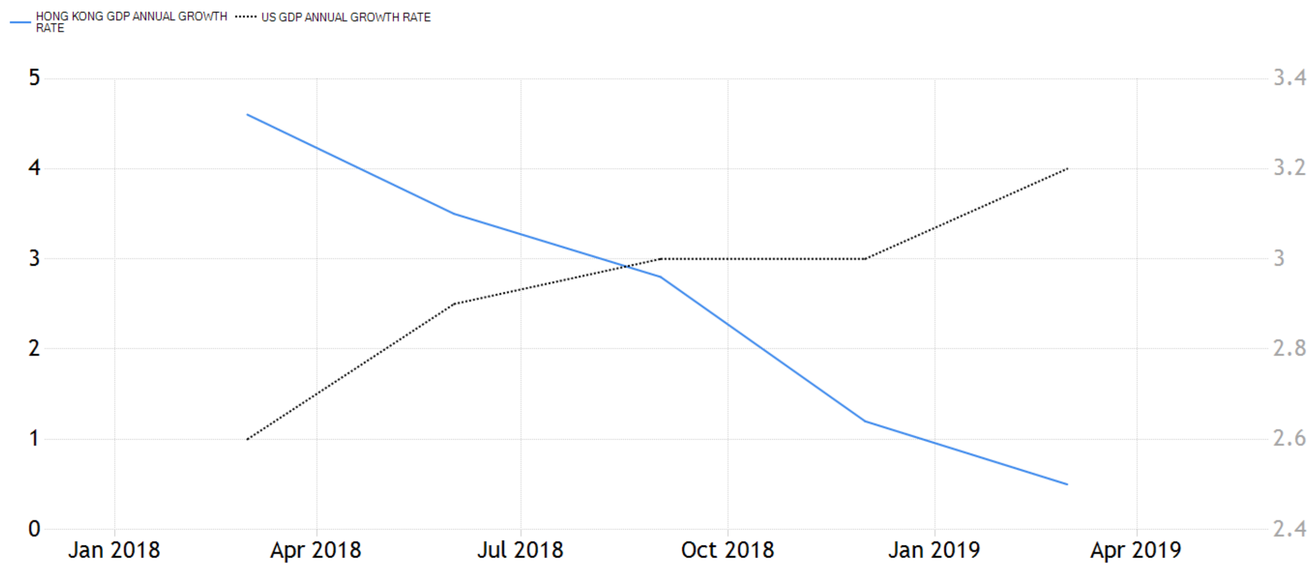
However, when a central bank increases interest rates, its GDP annual growth rate decreases. As interest rates are increased, consumers tend to save as returns from savings are higher. With less disposable income being spent as a result of the increase in the interest rate, the economy slows, and inflation decreases. Particularly, the US economy has been growing at a high rate since 2018, while Hong Kong GDP growth rate has had an opposite trend as it is shown by the blue line in the graph number 14. By macroeconomic principles, the US Federal Reserve should have increased interest rates, to slow down its economy, bringing inflation with it; and that is what happened, reaching a stable level of 2.5% in 2019.

On the other hand, the Hong Kong Monetary Authority should have decreased its interest rates in order to boost the economy. However, due to the dollar peg, this has been impossible, de facto, the Hong Kong interest rates has been rising at a very similar rate as the US, to maintain a stable exchange rate.

Instead, as interest rates are reduced, more people are able to borrow more money. The result is that consumers have more money to spend, causing the economy to grow and inflation to increase.

Thus, this inconsistency proofs one of the limitations of adopting a Linked Exchange Rate System (LERS).

Figure 14 Hong Kong and US GDP Annual Growth Rates



Source: Tradingeconomics.com

In contrast to the strengthening of the US dollar, the reasons behind a weak Hong Kong dollar include firstly the interbank market.

The interbank rate for Hong Kong dollars has risen at a slower pace than for US dollars. This was due to both a cooling property market and weak investments in the middle of the US-China trade war that have left banks flushed with liquidity, keeping the cost of money low. This unstable situation created arbitrage opportunities. In that investors took advantage of the weakness in Hong Kong rates to borrow the Hong Kong dollar as a cheap funding, and then invest it in higher yielding assets elsewhere, particularly in the US.

While, the most significant reason is the Impossible Trinity, also called Mundell-Fleming trilemma. A trilemma is a complex problem that includes three options of choice. It is used by governments when making fundamental decisions on the management of international monetary policy. The trilemma has three options: setting a fixed currency exchange rate system, allowing capital to flow freely with no fixed currency exchange rate agreement, or making independent monetary policy. The technicalities of each option conflict because of mutual exclusivity. As such, mutual exclusivity makes only two options out of three achievable at a given time.

As we have seen previously, Hong Kong has a fixed exchange rates system with the US and have a free flow of capital with others. Thus, in this case, independent monetary policy is not achievable because interest rate fluctuations would create currency arbitrage stressing the currency pegs and causing them to break. As a matter of fact, we have seen that the Hong Kong Monetary Authority has had to match its interest rates with the ones of the US.

The issue here is that, the US economy has been growing recently, so the interest rate hikes were justified, however, when it comes to Hong Kong's economy, since it has been slowing down, a rise in interest rates is not suitable at all.

Every time the Fed lifts its benchmark rate, the HKMA raises its base rate, but with little effect. That's because the base rate is the one at which the authority offers overnight funds to banks -- hardly relevant when the banking system has been brimming with cash for years.

Thus, if Hong Kong wasn't locked in the US dollar peg, they could cut interest rates to stimulate economic growth, however they cannot because of the Impossible Trinity mechanism, unless they break the peg and allow the Hong Kong dollar to float freely.

Moreover, to defend the HKD's peg, the HKMA has had to intervene multiple times by buying Hong Kong dollar in the foreign exchange market in large amounts. For instance, just in the first quarter of 2019, the HKMA spent more than $700 million USD[23]. They're doing all this purchasing in attempt to push the HKD-to-USD exchange rate back into 'healthy' peg territory (away from the very edge).

[23] Source: Bloomberg, https://www.bloomberg.com/news/articles/2019-03-12/hong-kong-steps-in-again-to-defend-fx-peg-buys-hk-3-925-billion

Yet, that policy is not working since the exchange rate is at the bottom of its limit 7.85 HKD, as it is shown in the graph.

Figure 15 USD - HKD exchange rate

Source: Tradingeconomics.com

In conclusion, we have seen that there are both advantages and disadvantages on keeping the peg to the US dollar, however, due to the Trilemma issue, in the nearest future, the HKMA will have to implement more and more interventions in the exchange market which will decrease the amount of foreign reserves. Despite all its interventions, the city still has more than $430 billion of foreign reserves, or seven times the Hong Kong dollars in circulation, but for how long will the HKMA be able to sustain this strategy?

Eventually, this issue will need to be backed by a permanent solution.

2.5 Pegging the Hong Kong Dollar to Renminbi

Some economists believe that a more efficient approach would be to link the HKD to an alternative currency such as the Renminbi (RMB).

In 2012, former HKMA chief executive Joseph Yam, a pivotal figure in its creation and defense, suggested a switch to a more flexible currency regime similar to that of Singapore, arguing the US and Hong

Kong are too economically different for a peg system. The renminbi is considered the most likely currency to constitute a hypothetical new peg, or at least be part of a trade-weighted group of currencies.

Moreover, in a poll of business executives in China and Hong Kong conducted last year by the London Business School and Hong Kong University, 62% estimated the Hong Kong dollar would simply be phased out eventually, as the renminbi internationalized.

To determine when will the RMB become a proper anchor currency for Hong Kong, one must consider the following conditions:

– A market-determined exchange with full convertibility and an established interest rate market;

– Sufficiently liquid RMB asset market to ensure fungible collateral;

– High degree of operational transparency of the People's Bank of China;

– A stable market condition and low RMB volatility to avoid market and economic disorder.

2.6 The Future of the Hong Kong Dollar

Given that in 2047, the 'one country, two systems' principle will expire, economists are rising questions about the future of the Hong Kong Dollar.

Under the "one country, two systems" framework, Hong Kong enjoys a "high degree of autonomy". Article 5 of Hong Kong's Basic Law also states that the former British colony's "capitalist system and way of life shall remain unchanged for 50 years" after the 1997 handover.

Song Ru'an, deputy commissioner of China's foreign ministry office in Hong Kong, also reiterated that any effort to make Hong Kong an independent nation would lead nowhere.

In recent years, there has been increasing concern that China is increasing its control over Hong Kong, with localist groups proposing that a referendum should be held in Hong Kong to decide whether it can become independent in 2047. However, the idea has been snubbed by both the Chinese and Hong Kong officials.

The success of the renminbi over the Hong Kong dollar seems to be the most plausible projection.

In a Hong Kong government research[24], they have estimated that an introduction of personal renminbi business, including deposits, exchange services, remittance and credit card services, will lead to an increase in the use of the renminbi in Hong Kong, in part by reducing the transaction cost.

As for domestic residents, the availability of renminbi deposits and credit cards will reduce the costs of using the renminbi as a means of payment in Hong Kong. In particular, there may be a dynamic process whereby the increasing convenience of using renminbi in both Hong Kong and China will raise the demand for the Chinese currency in Hong Kong. In particular, as economic integration intensifies, the network externality of using the renminbi is likely to grow.

These developments raise the question of whether the role of the Hong Kong dollar will be marginalized by the renminbi. Even though, the Basic Law stipulates that the Hong Kong dollar is the legal tender in Hong Kong, this does not prevent the use of other currencies for transactions and investment purposes.

Nevertheless, a number of factors favor the use of the Hong Kong dollar for domestic transactions, and its role is unlikely to be eroded in the foreseeable future:

- The sound record of monetary stability in Hong Kong — The stable value of the Hong Kong dollar, which is backed by the US dollar, and its full convertibility provide a solid basis for its continuous use in Hong Kong.
- Exchange rate risk — As most domestic prices are likely to continue to be denominated in Hong Kong dollars, the use of the dollar provides a natural hedge against any potential change in the exchange rate between the renminbi and the Hong Kong dollar.

[24] By Kitty Lai and Joanna Shi of the Hong Kong Research Department, 2004.

Thus, a ‘renminbisation’ that is, the situation in which the renminbi is used by households and the business sector in Hong Kong to a significant extent as transaction and investment, is not likely to occur in the foreseeable future. When the renminbi becomes fully convertible, its use in Hong Kong is likely to grow.

However, the role of the Hong Kong dollar is likely to remain significant, not least because of its legal tender status and its use for tax and other official payments.

Conclusions

In this paper, we have analyzed both the Hong Kong Monetary Authority, de facto, Hong Kong central bank, and its currency. We have provided an overview of Hong Kong as a major global financial center within its limitations and forecasts for the future.

The results of this analysis clearly illustrate that the Hong Kong dollar peg has gathered the attention of both the citizens and global investors in the last decade. In 2047, when the “one country, two systems” principle will expire, the future of the Hong Kong dollar might vanish alongside with its independence.

Even though, the Hong Kong Government and the Hong Kong Monetary Authority has done a great job during their lifetimes, by keeping its monetary and banking system stable, investors expect Hong Kong to take action to preserve its independent system.

For what concern the US dollar peg, there are some conflicting opinions. First of all, it is important to mention that the peg has been fragile for a short period of time, which however has been costly for Hong Kong, which in turn had to allow its reserves to decrease.

Moreover, most economists believe that the peg has been successful in its duty to stabilize the Hong Kong dollar so far, however, some of them consider the peg not suitable for the nearest future, as a result of the divergent economies between the United States and Hong Kong. Those economists support the idea of attaching the Hong Kong dollar to the renminbi since the Chinese economy and the Hong Kong economy are much more closely related than the US. On the other hand, there are people who think that the Hong

Kong dollar should be attached to two or more currency, such as the renminbi and the euro. In the second chapter we have demonstrated the advantages and disadvantages of both solutions.

In the end, the most drastic change could be the 'renminbisation' in which the renminbi would take over the use of the Hong Kong dollar even by households.

In conclusion, it is complicated to estimate the right forecast on the future of Hong Kong for several reasons. First, the Chinese government avoids exposing itself on its intents over Hong Kong. On one side, it assures that the "one country, two systems" will hold, on the other side, it is investing and rearranging Hong Kong's infrastructures, which in part where widely criticized by local economists. This could lead not only to the vanish of the Hong Kong's independence but also, to the Hong Kong dollar disappearance.

Second, once the renminbi will become fully convertible, and given that the constantly growing importance of China as a major financial center is occurring, Hong Kong role could be drastically marginalized, gradually eroding its functions in the international trade.

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