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**The Renminbi towards the free
fluctuation of the exchange rate**
Impact on Foreign Companies' decisions

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INTRODUCTION

According to the International Monetary Fund (IMF)¹, in 2017 China had the largest economy in the world by gross domestic product based on purchasing power parity, abbreviated GDP (PPP), but its currency, the Renminbi (RMB), also called Yuan, is still not completely liberalised and cannot float freely according to market-based forces.

How is that possible? Is this a sustainable situation for China and for the rest of the world? If not, what are the next steps for China's exchange rate policies? And how about the implication for Foreign Companies working with the Chinese market? In this thesis, I will try to answer these questions.

Starting from a more theoretical point of view, two of the most famous fixed exchange rate systems operating since the end of the Second World War will be analysed: the Bretton Woods System (also called "Gold Dollar Standard") and the European Monetary System (EMS). With the help of Paul de Grauwe's work, the problems with a fixed exchange rate system will be explained and will be understood why those systems have collapsed.²

China's exchange rate situation will then be analysed, from its first PEG to the US dollar, underlying all the most important events during its journey through a more flexible exchange rate, to its today situation and the latest developments.

Then the problem of the unsustainability of a fixed exchange rate in China will be looked at deeper, due to its current economic situation of first economy and first exporter of the world. In a free market, there is a supply-demand equilibrium that must be respected; a country can escape this equilibrium only if it is so small that it does not affect the global balance. This is not China's case. China tried to escape this equilibrium with the stabilization of its currency to the dollar first, and then with the stabilization to a basket of currency. However, it will become clear that the use of stabilization policies will no longer be a sustainable option for China. The problems relative to the maintenance of a stabilization policy will be then analysed.

Moreover, China has to go ahead with its reforms of the exchange rate toward the free fluctuation because of external global pressures. The majority of countries, headed by the US, continue to exert pressure on China demanding a more transparent exchange rate policy and to let the RMB freely float according to market forces, without any further government interventions. The alleged Chinese interventions in foreign market will then be

¹ See "Report for Selected Country Groups and Subjects (PPP valuation of country GDP)"

² DE GRAUWE Paul, *International Money*, Oxford, Oxford University, Second Edition, 1996.

discussed. Are those interventions a tactical move to maintain China competitiveness? Are they politically motivated? Or are they just a result of the stabilization policies? There are economist that sustain the theory of a Chinese Government constantly intervening in the currency market in order to keep the yuan undervalued and thus boosting its export. Other economist, by contrast, believe that this intervention are only the result of the stabilization policies and are not profit-driven. The study of Hassan, Mertens and Zhang forms part of the second line of thinking and brings to light a different perspective about these interventions in the foreign market.³

What is China's position on its exchange rate policy? The Chinese Government has stated on a number of occasions that currency reform for an increasingly free exchange rate is always been a long-term goal, which will be implemented gradually. In this context, one question arises: why have the Chinese authorities not pursued a larger revaluation? China is not ready for a free-floating exchange rate. In order to avoid unpleasant consequences as massive speculative cash flows, some problems still has to be resolved before proceeding with further liberalization.

However, it will become clear that a free-floating exchange rate is an inevitable choice for China, also because it would produce long-term benefits for Chinese economy.

When this will happen, which are the effects for Foreign Companies working with China? Those firms must be prepared to face the evolutions of Chinese exchange rate and design the right strategies to get along with this process.

³ HASSAN A. Tarek, MERTENS M. Thomas, ZHANG Tony (2016), *Currency Manipulation*, Federal Reserve Bank of San Francisco, Working paper 2016-15.

论文前言

根据国际货币基金组织（IMF）的数据，2017年中华人民共和国是在世界上最大的经济国，关于国内生产总值根据购买力平均价计算，缩写为GDP（PPP）。但是其货币，人民币（RMB），也称为元，仍然没有完全自由化，不能根据市场力量自由浮动。

这怎么可能？对中国和世界上其他的国家来说，中华人民共和国的固定汇率是一种可持续的状况吗？为什么？如果不是，中国汇率政策的下一步措施应该是什么？外国公司和中国在进行贸易的时候影响是什么？外国公司应该如何应对中国汇率政策的变化？在本论文中，我将回答这些问题。

首先，从更理论的角度出发，我将分析在第二次世界大战结束以来运作的最著名的固定汇率制度之一有：布雷顿森林体系（也称为“黄金美元标准”）和欧洲货币体系（EMS）。1944年，世界上大部分国家同意在美国的布雷顿森林城市加入布雷顿森林体系。这个体系是以美元作为国际货币中心的货币体系。这个体系的基本原则是每个加入国承诺以固定价格维持它货币兑美元的可兑换性。但是布雷顿森林体系于1973年宣告结束。结束的原因在于多次爆发美元危机于美国经济危机。同样情况下，欧洲货币体系没成功。1979年欧洲的大多数国家建立欧洲货币体系。欧洲货币体系的加入国制定一项固定汇率政策。每个国家都确定了所涉及的其他货币的汇率评价，以及它们的波动范围。这样，它们创建了一种中央汇率的矩阵，及其这汇率的波动范围。每个中央汇率只涉及两个必须维持范围内汇率的国家。由于不同经济和政治矛盾，1972年欧洲货币体系崩溃。固定汇率制度注定要失败。本章的目的是解释固定汇率系统的问题并理解以上两个系统崩溃的原因。概括起来说，一个国家承诺维持其汇率固定的时候，它的承诺在当时和未来一样有效。每项承诺都具有可信度的问题，也就是说固定汇率制度的主要问题；在将来，一些因素可能会反驳那项承诺的有效性。在这种情况下，维持固定的汇率将不再会是国民经济

的最佳选择，所以该国家会决定违背其承诺。经济参与者非常清楚这种可能性，因此它们会不断监控金融市场。如果它们怀疑某个国家由于新的经济条件不利而会违背其承诺的话，经济参与者的反应将是出于投机原因地买卖所涉及的货币。这可能导致投机性危机，也可能危及整个固定汇率系统。如前所述，从长远来看固定汇率系统是行不通的。

在第二章，我将分析人民币汇率的最重要历史事实，从 1948 年中国人民银行首次发行人民币的事实，到今天的最新消息。1976 年毛泽东去世以后，一个改革进程开始了，以实施一种更加市场化的经济；1978 年，邓小平以经济自由化为目标开展了一系列改革。从 1981 年到 1994 年，中华人民共和国有双重汇率制度。该系统包括两种不同的汇率：第一种是官方固定汇率，设定为 1 美元兑 1.50 元，用于服务业有关的交易；第二个是贸易外汇内部结算价格的汇率，是根据当时的出口换汇成本确定，固定在 2.80 元的水平。第一个是固定的，而第二个经常调整。1995 年，由于美国委员会和国际货币基金组织的外部压力，该制度被废除。她们坚持认为这个制度违背了国际货币基金组织的标准，因为它给全球经济带来了巨大的困境。从 1994 年到 2005 人民币与美元挂钩，人民币汇率可以在非常窄的幅度内浮动。2005 年 7 月人民币汇率改为一篮子货币，汇率改为 1 美元兑 8.11 元人民币。随着而后，中国人民银行每天公布当日银行间外汇市场美元对人民币汇率的交易价。特别的值得注意的事实是：2001 年 12 月中国成为世界贸易组织的成员、2015 年 11 月国际货币基金组织宣布人民币加入特别提款权的货币篮子、2018 年 1 月中国和美国的贸易战开始。中国的历史表明，中华人民共和国汇率处于一个长而合理的过程中，将不可避免地以自由市场和自由浮动汇率结束。了解中国过去的决定将有助于我们理解其进一步的步骤。

在第三章，将讨论固定汇率对中国不可持续的原因。由于中国是世界上第一大出口国也是第一个经济大体国，它的固定汇率是不可持续的。在自由市场中，有一种每个国家必须尊重的供需平衡；除非一个国家不够大来影响全球

平衡，它才可以不尊重全球供需平衡定律。这肯定不是中国的情况。首先通过货币与美元挂钩，然后通过与一篮子货币挂钩，中国脱出这种平衡。借助不同的经济研究，我们将了解为什么稳定政策的使用将不再是中国的可持续性选择。使用稳定政策的国家经济越大，为了实施维持这种政策的费用也越大。多亏中国保持管制现金流通的能力，它一直卓有成效地实施稳定政策，然而这个过程会面临长空。中国继续维持固定汇率政策的问题是：人民币计价过低、金融抑制、中国的利率低于平均水平、房地产泡沫、国际收支不平衡等。

此外，以美国为首的大多数国家正在给中国施加越来越大的压力，以确保它正在努力地实施自由浮动汇率的改革，以阻扰中国的进一步市场干预来阻止人民币升值。中国再也不能忽视这种外部压力，特别是如果这种压力来自它的主要贸易伙伴和主要经济机构。近年来美国指责中国的汇率政策是不公平的，并且美国觉得中国操纵它的汇率以获得贸易优势。这些指控都会被证实吗？我随后将讨论中国对外国市场的干预行为。这个市场干预是战术演习以保持中国产品的竞争力还是它们只是稳定政策的结果？它们有政治动机吗？中国可不可以视为“货币操纵国”？汇率操纵国，是指美国财政部向国会提交的各国汇率政策报告书中，美国国会从其他国政府央行的交易行为中认定当中存有汇率的不当操作。有经济学者认为中国是一个汇率操纵国，有经济学者认为中国不是一个汇率操纵国。举个例子，对于经济学者们例如 **Hassan, Mertens** 和 **Zhang** 的研究看来，中国的市场干预并不意味着获得贸易优势或损害其它国家。而他们仅仅是为了让人民币水平保持在一定范围内的政策结果。

中国关于它的汇率政策的立场是什么？中国政府多次表示自由汇率的货币改革始终是一个它打算逐步地实施的长期目的。在这种情况下，出现了一个问题：为什么中国政府还没有转向自由浮动汇率呢？因为在进一步自由化之前，还有一些需要解决的问题。为了实施自由浮动汇率，中国应该松缓资本自由进出的控制，但是它还没准备好。由于现时人民币计价过低，如果中国放开现金流量控制的话，这样的投机性会也出现大规模的现金流。中国政府一直谨

慎地对待汇率改革，以便不实施可能破坏经济导致失业和随之而来的工人骚乱的政策。所以现在中国处于两个经济学家 Robert Mundell 和 Marcus Fleming 称为“三元悖论”的情况，又称“三难选择”。“三元悖论”是一个国际金融学中的原则，指一个国家不可能同时完成资本自由进出、固定汇率和独立自主的货币政策，其中只有两个是可以同时实施的。例如中国选择维持固定汇率和独立自主的货币政策，其代价是失去资本自由进出。有经济学家觉得中国为了实施资本自由进出和独立自主货币政策，应该转向自由浮动汇率。有经济学家觉得中国应该先松缓资本自由进出的控制，以实施自由浮动汇率。然而，理解正确的顺序以成功地转为市场力量决定的汇率并不是本论文的目的。本论文的目的是了解人民币转到自由浮动汇率是必然的，不但因为外部压力，而且因为实施自由浮动汇率符合中国的利益；实施自由浮动汇率为中国经济带来长期利益，比如说经济效率和经济增长率会提高、收支平衡会升华、改善劳动条件和人民生活等。

最后，在最后一章里，我将研究在中国走向自由浮动汇率的过渡阶段之中可能影响外国公司的效果，并且在以及处理中国市场的时候，为其公司提供一些建议关于实施最合适的策略。中国放开人民币汇率的时候，会发生什么？正确答案取决于当时的中国情况。中国是否能够使人民币更接近市场价格的水平？中国是否成功地加强了服务业？中国是否放松了资本自由进出的控制？变数无穷无极，结果难以预测。必然的是，中国将来要实施自由浮动汇率，外国市场必须为此做好准备。

1. RISE AND COLLAPSE OF FIXED EXCHANGE RATE SYSTEMS

In order to understand why the clock is ticking on China's fixed exchange rate situation it is better to start from the basis of the economy: money and its characteristics. Then, with the help of De Grauwe masterpiece⁴, the fixed exchange rate systems, their operations and problems will be analysed from both a theoretical and practical point of view.

1.1 FUNDAMENTALS OF MONEY

What are the characteristics of money? Paul De Grauwe identifies the fundamentals of money as the following.

The first characteristic of money is that it is close to the definition of a *collective good*; it means that a currency utility depends on how many individuals use it; a currency used by a single individual is useless. Therefore, the more people use a currency, the more useful it is. A problem arises when a *collective good* is offered in private markets, the problem of "free-riders". It is improbable that an individual will voluntarily contribute to the supply system of a *collective good* if it is difficult to preclude him the use of that good. There will be people that will not pay for the good, but still use it.

This is a marginal problem for money. In fact, its second characteristic is that it is quite easy to induce the users of money to contribute to money's supply system, that is, pay to hold money. Due to this whoever uses money has to hold nonperforming money balances (like cash, current account deposit), or with very low interest rate. In this way, the money holder pays for the mere fact of waiving a higher interest rate on other assets. Therefore, there is a mechanism in the money supply system that avoids the problem of "free-riders".

The third characteristic of money is that the willingness to hold money balances is based on holder's trust that those assets will not devaluate over time. In order to accept a particular money, all the economic agents must be confident that the money supplier will not do anything that would reduce its value; if they were afraid of this eventuality, they would not voluntarily hold money balances. Here lays one of the key problem for money suppliers; how can they prove that they will not do anything in order to reduce the value of money? How can they prove their reliability? One of the most significant method used by suppliers to establish a relationship of trust with economic agents is to ensure

⁴ DE GRAUWE (1996).

that money can be converted at a specific price in another asset, the value of which the supplier has no control. This method was widely used after the Second World War, when all the major countries declared their commitment to maintain the convertibility of their national currency into a foreign one at a fixed price. This was the main method for establishing a relationship of trust among countries and was used by different nations in order to make their currency accepted internationally for economic transactions. As we will see, this promise to maintain the convertibility of the currency carries with it the most relevant problem for a fixed exchange rate system, the problem of the reliability of this commitment. Economic agents know there could be some situations in which maintain the convertibility at a fixed price would not be convenient for the issuer of a currency and he might not respect his commitment.

The fourth and last fundamental of money is related to the economies of scale implicit in its offer. The existence of economies of scale in the money supply system results from its nature of *collective good* and are thus related to the fact that money utility increases when the number of its users grows. Issuers would try to expand the offer of their currencies in order to benefit from these economies of scale and there will be intense competition between issuers. Like in other sectors characterized by the presence of economies of scale, this non-linear process will lead to a concentration of supply in hand of a few, possibly only one, or to the cartelization of money market. If this is true at a national level, where in all industrialized countries the issuance of currency is state monopoly, from an international point of view a concentration of money supply is still not possible. As for the national level, there will be advantages for each nation in expanding their currency at an international level, to enjoy the benefits of the economies of scale. The economies of scale in the offer of an international currency generates strong competitive pressures between issuers of different national currencies, but do not lead to an international monopoly. Why is this? There are different political contexts between national and international level. At national level there was an inevitable government intervention in money supply system, while at international level a central authority capable of monopolize this market does not exist. Since De Grauwe assumes that such a central authority would not exist in the near future, the international money supply system will continue to be characterized by heavy competitive pressure and a high volatility.

1.2 EXAMPLES OF FIXED EXCHANGE RATE SYSTEMS EXPERIMENTED IN THE POST-WORLD WAR II

Thanks to the explanation of how does a currency works and its characteristics, it is easier to understand the dynamics of fixed exchange rate systems, how do they operate and what their implicit glitches are.

Before talking about the two most important examples of fixed exchange systems, a separate mention should be made of their precursor, the Gold Standard.

Operating during the second half of 19th century, it was a monetary agreement between the major countries of the planet. Every country involved had to guarantee the free convertibility of its currency in gold at a fixed price. The result of this agreement was that every currency involved was considered an international currency: the fact that every currency was convertible in gold at a fixed price made possible the convertibility of each currency into one other, always at a fixed price. This led to a period of economic growth with a relatively free trade in goods, capital and labor thanks to the advantages caused by the full exploitation of the benefits of the economies of scale, that became implicit in money supply system. This, of course, limited the competition problem, making the system more stable.

To make the system work correctly each country had to respect some basic rules, named for the first time by Keynes "rules of the game". To understand how these rules worked, let us analyze the example De Grauwe made in his book: suppose that a country experiences a rapid growth in the supply of its currency, due to an increase of public spending funded by the issuing of new currency. This will inevitably tend to rise national prices against international ones, encouraging imports and slowing exports. This could lead to the deterioration of a country's balance of trade. From a financial point of view, this situation causes a surplus of foreign currency due to the increase of imports. National banks have to provide foreign currency to their clients who want to import goods; they buy foreign currency from the central bank, reducing their amount of cash reserves; the central bank trades gold for foreign currency with other central banks, reducing its gold reserves. Of course, the result is a decrease of national currency reserves, sold in order to purchase foreign currency. At this point, the "rules of the game" imply that the above-mentioned country allows national currency reserves to decrease along with gold reserves. In doing so, national prices would start to decrease, permitting the restoration

of the equilibrium of the balance of trade. It is clear that the “rules of the game” were fundamental for assuring the convertibility of currencies in gold.

What would happen if a country does not apply those rules? If a country keeps national currency reserves always at the same level, regardless of decreases in gold reserves, its national prices would always be higher than the foreign ones. Therefore, the country would enter into a vicious circle that would deplete its central bank’s gold reserves, causing a trust issue that would result in a gold rush with a consequent closure of the gold window, making the convertibility impossible. This is why the Gold Standard did not survive the First World War. The monetary authorities refused to fulfill their commitment to guarantee the convertibility of their currencies in gold.

The urge of a new structure was the result of the multiple crisis and disruption on global scale caused by the failure of the Gold Standard and the following attempts to restore it, which characterized the international monetary system during the two-war period. After the devastation of the Second World War, there were the ideal conditions for the rise of a new system.

1.2.1 BRETTON WOODS SYSTEM

According to P. De Grauwe, Bretton Woods System (BWS), also known as Gold Exchange Standard, was “*the most ambitious international monetary agreement between sovereign states*”. The fundamental principle was the same of the Gold Standard: the commitment to maintain the convertibility of the currency in another asset at a fixed price, which would provide a stable environment for international monetary system.

What were its peculiarities? The base of BWS was a double degree of convertibility with the US dollar in the middle of this system. As first degree, the US government guaranteed the convertibility of the dollar in gold at a fixed price. Only the foreign central banks could convert their dollar reserves into gold. Others, in order to convert dollars in gold, had to rely on the private market of gold. As second degree, all the monetary authorities of the countries involved stated their commitment to convert their currency in US dollar at a fixed price, the so-called “official exchange rate”. This exchange rate had to remain fixed, with the exception of a persistent situation of imbalance in which a mechanism for changes in the exchange rate parity was applied for occasional realignments; so, this agreement implied the

establishment of both an official exchange rate and a range in which the exchange rate could float.

This double degree of convertibility provided a system of mutual control and constraints; acceding countries, pegging their currency to the dollar, accepted to let their currency flow with it. On the other hand, the central banks' right to convert US dollar in gold granted them a considerable power on the United States' monetary assets. If US monetary authorities decided to issue a large amount of dollars, other countries could convert their dollar reserves in gold. The mere possibility of taking this countermeasure was considered sufficient to discipline US' monetary authorities.

In order to operate correctly, the Bretton Woods system had to follow and implement the "rules of the game", that were quite the same as the one of its precursor, the Gold Standard. Let us suppose that the price of the US dollar increases. In such an eventuality, the demand of dollar would decrease because foreign buyers would purchase fewer US' goods. As the demand decrease, the dollar's supply increases, thanks to foreign export to the US. The equilibrium of the official exchange rate was determined by the demand and supply of the dollar. When the exchange rate reached the upper (lower) limit of the band, the foreign central banks, following the Bretton Woods project, had to sell (buy) dollars, in order to avoid that the dollar's price exceeded the limits. If, for example, there was an increase of dollar's demand, caused by an increase in the demand of US' goods in a given country, and this increase becomes a permanent phenomenon, its authorities had to pursue restrictive fiscal and monetary policies in order to reduce the excess in the dollar's demand. These policies would reduce the aggregate expenditures and consequently the import expenditures, letting the exchange rate return inside the boundaries and in a situation of equilibrium. The intervention on the dollar supply/demand was a necessary rule the foreign monetary authorities had follow in order to let the system work correctly. The US monetary policies were the only element capable of determine the global stock of money. The rest of the world was bound to let their stock of money adjust to the one determined by the US. It seems clear, that such interventions in the stock of money for the foreign authorities could be expensive to apply.

In the 1960s, the US policy makers' idea was that they had "*a responsibility for generating sufficient growth so as to maintain a situation of full employment*"⁵.

⁵ DE GRAUWE (1996). Page 32.

Therefore, they started to pursue strong inflationary policies. As a result, other member countries that had their currency pegged to the dollar were bound to import more and more inflation. Some countries, known for their anti-inflationary position, were reluctant to follow the US policies and decided to resist them, at first, while keeping the exchange rate fixed. When their resistance was proven ineffective, for the speculators was clear that these countries were struggling against the US inflationary policies and that their only option to stop the import of inflation was a revaluation of their currency. This took down the credibility of the system and started a speculative crisis with massive purchasing of these currencies and accumulation of dollar reserve like never happened before.

The system collapsed in 1971.

1.2.2. EUROPEAN MONETARY SYSTEM

In 1979, on the initiative of the German chancellor Helmut Schmidt and the president of France Valéry Giscard d'Estaing, the members of the European Community started the European Monetary System (EMS).

Acceding countries stated their commitment to maintain the exchange rates fixed, or at least, to limit their fluctuation within stated margins. Each country determined an exchange rate parity for any other currency involved, as well as a fluctuation range. In doing so, they created a matrix of central rates and their related intervals. Each central rate involved only two countries that were bound to maintain the exchange rate inside the boundaries. These intervals were not the same for every country. The operational principles of EMS were similar to the one of Bretton Woods. When an exchange rate was close to exceed the limits, the countries involved had to intervene in the market, selling or buying monetary reserves. As was in the BW system, when the exchange rate was in a permanent situation of disequilibrium, the countries had to pursue restrictive (or expansionary) monetary policies in order to let the exchange rate return to a situation of equilibrium. De Grauwe reported that this gradually became a system in which only the deficit countries were bound to make adjustments in order to restore the equilibrium of the exchange rates. Unlike the BW system, in which countries could only intervene in the dollar market, in the EMS each country was committed to intervene in any currency involved whenever its central rate was exceeding limits.

This system was characterized by two phases. In the first phase, during the first half of the 80s, it was quite a flexible fixed exchange rate system. The countries involved did not fully make the commitment to maintain the exchange rate fixed. They could modify the central rate in case the pressure on it was too strong, if all the members agreed. These kind of realignments were frequent since the end of the 80s. In the second phase, after 1987, the system became a fully-fledged fixed exchange rate system, in which each country made a full commitment to maintain the convertibility of their currency at a fixed price. This is when the first problems of the system became evident. Germany emerged as the center country of the system thanks to its well-known low inflation and to its position of most powerful economy at that time. Many member countries decided to peg their currency to the Deutsche Mark hoping to solve their problem with inflation. As long as these countries were aiming to reduce their inflation, they gladly accepted Germany as the system's leader. However, in 1991 when some countries (France, Italy and the UK) experienced a major recession, the first problems and conflicts arose. On one hand, thanks its unification, Germany was in the middle of a booming economy and strong inflationary pressures. For these reasons, it continued to pursue its anti-inflationary policies. On the other hand, countries already experiencing a recession were reluctant to follow Germany's policies in order not to exacerbate their position. This led to a credibility problem; speculators started to assume that such countries sooner or later could break their commitment and modify their exchange rate. The EMS was in force until 1992, when the outbreak of large speculative movement forced some member countries to leave the system and pushed the system to its dissolution.

1.3 WHY DO THE FIXED EXCHANGE RATE SYSTEMS COLLAPSE?

As mentioned above, it is understood how the two most important tentative of establishing a fixed exchange rate systems work. Another element they had in common was their failure. When these systems were successfully operating, all the countries involved could enjoy the benefits of having a single currency, advantages like no competitive pressures, stability of the market and each currency was considered international and accepted in every transaction. As Delors reported in 1989

*"the creation of a single currency area would add to the potential benefits of an enlarged economic area because it would remove intra-Community exchange rate uncertainties and reduce transactions costs."*⁶

These systems, in particular the Bretton Woods system, contributed to the growth of international trade and in relation to Andrew G. Terbor words "[...] *international trade expanded at its most rapid pace of the twentieth century.*"⁷

A question arises – if they were somehow favourable for the economic growth and when they worked created many advantages for the countries involved, why did they collapse?

According to Paul Wachtel⁸ a fixed exchange rate system as Bretton Woods, had the right architecture for that time and "*the stability of the fixed exchange rate regime [...] successfully jump started the world economy.*" Its problem concerned the inability to adapt to the changes of the market and it "*did not allow for enough flexibility of exchange rates*". Exchange rate realignment were increasingly needed, capital controls were weaker and with the growth of international trade, the claim for liquidity was out of control until the availability of dollar and gold reserves were jeopardised.

De Grauwe went deeper in the matter and analysed some key factors that seems to be the problems at the base of fixed exchange rate systems' demise. When a country makes the commitment to maintain its exchange rate fixed, this commitment is valid at that moment as it is for the future. Each commitment carries a credibility issue and this is the main problem for fixed exchange rate systems; in the future, some elements could refute its validity, in this case, maintaining the exchange rate fixed would no longer be the best solution for a country, which can decide to break its commitment. De Grauwe called this problem "time inconsistency". Economic players are well aware about this eventuality and their natural reaction will be buying or selling the currencies involved for speculative reasons. This can result in a speculative crisis that could endanger the whole system.

What are the conditions and circumstances that could trigger a credibility issue in fixed exchange rate systems? The two elements that De Grauwe highlight as capable of

⁶ DELORS Jacques (1989), *Report on economic and monetary union in the European Community*, (commonly called the Delors Plan or Report) By Committee for the Study of Economic and Monetary Union, [EU Commission - Working Document] Presented on April 17.

⁷ TERBOR G. Andrew (2003), *The Post-War Rise of World Trade: Does the Bretton Woods System Deserve Credit?*, London School of Economic, London, Working paper No. 78/03, September.

⁸ WACHTEL Paul (2007), *Understanding the Old and New Bretton Woods*, January.

reducing the credibility of such systems will now be analysed: the $(n - 1)$ problem and the adjustment problem.

1.3.1 THE $(n - 1)$ PROBLEM

This theory expressed by De Grauwe states that in case of “ n ” countries bounded by a fixed rate there can only exist $n-1$ independent exchange rates. Consequently, only one country is free to decide its monetary policies and other $n-1$ countries have to design theirs in order to keep the exchange rate fixed with the one of the leading country. This could be a not negligible source of conflict between member countries. A fundamental indeterminacy exists in the system caused by the $n - 1$ problem. In order to solve this, adhering countries must agree on the ways of managing their monetary policies and they have to create a mechanism capable of fixing the system’s monetary stock. There are many ways to create this mechanism; all of them have their own difficulties.

However, according to De Grauwe, a fixed exchange rate system is doomed to fail because sooner or later the system will face the $n - 1$ problem; an external shock will inevitably cause some conflicts between the major member countries about the appropriate policy capable of dealing with this shock.

In the Bretton Woods system, the US inflationary policies implemented on large scale were no longer acceptable for some major participants, as Germany, Japan and Switzerland (known for their strongly anti-inflationary views). The arising conflict led to a crisis about the credibility of maintaining the exchange rate fixed commitment by anti-inflationary oriented countries. This caused a speculative crisis that led to the system’s collapse.

The same process involved the EMS decline, but with opposite circumstances. The problem were the strongly anti-inflationary policies pursued by the German government in contrast with the need of other countries (France, Italy and the UK) to exit from recession. Their inability to choose the right policy has undermined the credibility of the system and culminated in a speculative crisis.

As stated by De Grauwe, “*the $n - 1$ problem is the most basic problem leading to credibility issues.*”⁹ A fixed exchange rate system is incredibly fragile and need the acceptance among the major members about the implementation of monetary policy

⁹ DE GRAUWE (1996). Page 44.

for the system as a whole. Inevitably, as times go on, conflict between sovereign countries will arise. Speculators perceive this conflict as weakening members' commitment to maintain a fixed exchange rate and the resulting crisis would bring down the system.

1.3.2 THE ADJUSTMENT PROBLEM

De Grauwe present the theory of the adjustment problem as follows; when the authorities of a country decide to pursue some domestic objective that turn out to be in contrast with the external equilibrium of the fixed exchange rate system, problems concerning the credibility of that country's commitment to maintain its exchange rate fixed will arise. The blurring of the credibility of this commitment is due to external shocks that could be offset only by allowing the occurrence of even bigger internal imbalances. In this case, the official exchange rate ceases to be an equilibrium exchange rate. Country's authorities perceive this situation as a strong incentive to offset the external shock modifying the exchange rate, rather than follow the "rules of the game" and letting internal imbalances taking over the domestic economy. At this point, the occurrence of speculative crisis will be really challenging to avoid.

In order to better understand the logic behind the adjustment problem, De Grauwe exposed the following examples.

Let us suppose that a country faces an unforeseen domestic inflationary shock. This kind of shock it is assumed to be due to a wages boom. The outcomes will be the reduction of the real exchange rate, and thus a reduction of both domestic economy's and its output's competitiveness. This will then result into the declines of exports and an increase of unemployment.

In fixed exchange rate systems exists an automatic adjustment mechanism that will bring the economy which has experienced the shock to its initial equilibrium point. In this case, the only way for the economy that suffered the domestic inflationary shock to move to an equilibrium level is to let the domestic price level decline. According to De Grauwe, in a world where prices and wages are flexible, two mechanism exists that will make this kind of adjustment happen:

"First, the increase in the unemployment level reduces wage level. This, in turn, makes it possible for the price of the domestic output to decline. Second, the current account deficit forces the monetary authorities to intervene in the foreign

exchange market to sell foreign currency against the domestic one. As a result, the money stock declines and the domestic interest rate increases. The effect of this mechanism is deflationary: it reduces absorption and decreases price level. [...]The effect of these two channels is to improve competitiveness, to reduce unemployment and to improve the current account of the balance of payments”¹⁰

This is only one of the many paths that the economy could follow in its adjustment period. However, what is important to remember is that in the real world, where the level of price and wage flexibility is often limited, the adjustment mechanism illustrated above could also not operate, or it might be so slow that it would not be acceptable for the authorities. If the previous example happened in a situation of wages and price rigidity, there would be no elements that would push the real exchange back to its equilibrium level. If the local authorities want to reduce the unemployment, they can increase the spending (reduce taxes) in order to boost the economy. The results will be an increase of the absorption and the economy will move closer to an equilibrium position. This movement, however, comes at a price that is an increase of the current account deficit and of the net foreign debt. If the authorities are looking to reach the equilibrium of the current account, they will have to reduce the spending (increase taxes) in order to let absorption decline. It is clear that, in a world where prices and wages are rigid, no matter what are the decisions of the policy-makers, a devaluation is inevitable. In the case that a country opt for the implementation of a domestic equilibrium goal, the economy will face a persistent current account that, in the long-run, will deplete the stock of foreign exchange reserves to such an extent that it will become impossible for the local authorities further intervene in the foreign exchange market. Therefore, they must let the exchange rate increase. The crisis will occur anyways prior to the complete depletion of the foreign exchange reserves, caused by speculators who will anticipate the future depletion and will start to target that currency. If the country opt for following the “rules of the game”, their only option is to reduce the total spending in order to restore the external equilibrium. However, this will cause an increase in the unemployment levels and this is not considered an attractive choice for authorities, the majority of which pays great attention to unemployment. They will thus see the adjustment of the exchange rate as a more effective method to rebalance both the external and

¹⁰ DE GRAUWE (1996). Pages 51 – 52.

domestic equilibrium. Therefore, in the light of this scenario, speculators will test the solidity of the country's commitment to maintain its exchange rate fixed, and this could cause a speculative crisis. This were some example about the problems involved in the adjustment process.

Differently from the $(n - 1)$ problem, the adjustment problem usually is limited to only a single country. The country hit by the external shock must decide whether to follow the "rules of the game" imposed by the fixed exchange system's adjustment mechanism, provoking internal imbalances, or to modify their exchange rate in order to overcome the problem, giving up on their commitment and opt for the abandonment of the system, without undermining its functioning.

However, it is worth-mentioning that usually this two problem analysed by De Grauwe, are often interrelated. If we consider the EMS crisis in 1992-3, some economist contend that it was started from a domestic German adjustment problem deriving from the unification of Germany and result in an appreciation of the German mark. De Grauwe further explains that

*"Since the other countries in the system were pegged to the German mark, this real appreciation could only come about by an increase in the German price level or a decline in the price level in the other EMS countries. Germany refused the first solution. As a result deflation was forced on the other countries. The EMS collapsed because the cost for these other countries was perceived to be too large."*¹¹

Therefore, what started as a mere adjustment problem in a country of the system, become a huge conflict between the major countries involved. This happened because the country that faced the adjustment problem happened to be the most important one in the fixed exchange rate system.

¹¹ DE GRAUWE (1996). Page 55.

2. CHINA'S EXCHANGE RATE SITUATION

Let us move to the main topic of this paper, China.

In order to understand China's exchange rate situation today, it is important to see its history. In my opinion, the history of China is fascinating and unique. It shows power, cleverness, patience and resiliency. China managed to become the first economy of the world¹² in less than forty years (since its opening in the world market in 1978), it has by far the largest foreign reserve asset with over two and a half times more than the second largest reserve holder, Japan¹³, and it is the world's first exporter¹⁴. How was this possible?

All the steps and decisions made by China concerning its exchange rate system will now be discussed.

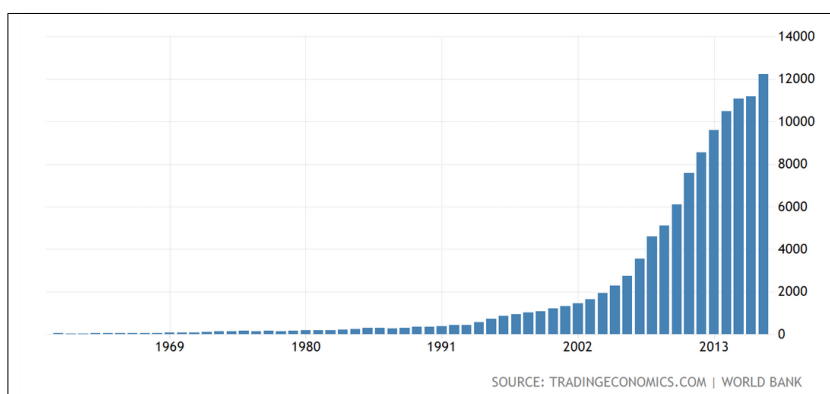


Figure n.1

China's GDP in billion US dollar. "The Gross Domestic Product (GDP) in China was worth 12237.70 billion US dollars in 2017. The GDP value of China represents 19.74 percent of the world economy. GDP in China averaged 1970.49 USD Billion from 1960 until 2017, reaching an all time

high of 12237.70 USD Billion in 2017 and a record low of 47.21 USD Billion in 1962." (World Bank)

2.1 EVOLUTION OF EXCHANGE RATE SYSTEM

Under the leadership of Mao Zedong, on 1st October 1949 the People's Republic of China (PRC) was born. Its currency, the Renminbi (RMB)(which means "People's currency"), was issued a year before the formation of this new country, in 1948, and helped to provide some kind of economic stability in the areas damaged by the civil war between the Communist and Nationalist parties fighting for power. Like most of the currencies, at the moment of its introduction, the RMB was pegged to the dollar at a rate of 2.46 RMB per USD.

¹² See note n. 1.

¹³ Investopedia, *10 Countries with the Biggest Forex Reserves*, <https://www.investopedia.com/articles/investing/033115/10-countries-biggest-forex-reserves.asp>

¹⁴ Central Intelligence Agency, *The World Factbook, Country Comparison: Exports*. Exports compares the total US dollar amount of merchandise exports on an f.o.b. (free on board) basis. These figures are calculated on an exchange rate basis. 2017

The PRC was a centrally planned economy and its market was a closed one, characterized by quite inexistent relationships with the international market. As Min Zhao reports,

*“External trade was carried out by a handful of foreign trade corporations (FTCs). The Bank of China, a state-owned bank specializing in foreign banking transactions, carried out all foreign exchange transactions. All foreign exchange receipts had to be sold to the State, and all foreign exchange payments were subject to a compulsory foreign exchange plan. China did not borrow from other countries, nor received foreign direct investment.”*¹⁵

With the death of Mao in 1976, a new process of reforms through a less closed and more market-oriented economy began; in 1978, Deng Xiao Ping started a series of reforms with the aim of economic liberalization and the government took action in order to facilitate this transition and encouraged exports, creating the “Foreign Exchange Retention System”¹⁶.

In March 1979, the State Administration of Foreign Exchange (SAFE) was established as part of the People’s Bank of China (PBOC) with the duty to control the foreign exchange.¹⁷

In 1981, the government introduced the “Dual Track Exchange Rate System” in order to accelerate and stimulate exports. This system consisted in the coexistence of two exchange rates: the official fixed exchange rate, set at 1.50 RMB per USD, used for service related transactions (like overseas remittances or tourism), and the Internal Settlement Rate (ISR), fixed at 2.8 RMB per USD, used for all the trade-related foreign transactions. The ISR was fixed, while the official exchange rate was adjusted frequently. With this mechanism, it became more profitable for foreigners to purchase from China, and less profitable for Chinese to import from foreign countries. In 1985, this system was abolished due to the external pressures of both the US Council and the International Monetary Fund. They sustained that this system was against IMF’s standards and in fact, it brought a massive distortion in the economy.

¹⁵ MIN Zhao (2006), *External Liberalization and the Evolution of China’s. Exchange System: an Empirical Approach*, The World Bank Beijing Office, May.

¹⁶ For examples, it introduced some measures that allowed exporter to retain part of their foreign exchange earnings, also for non-trade sources (as overseas remittances, port fees, tourism). See Liew and Wu (2007) and Lardy (1992) for a more detailed description of the foreign exchange retention system in China.

¹⁷ WEN Si (2014), *Evolution of RMB Exchange Rate Regime*, Shanghai Academy of Social Science.

During this period, from 1980 to 1985, a considerable number of Special Economic Zones (SEZ) were established in China with the purpose of attracting inflows of foreign investments. In May 1985, the Foreign Exchange Retention System was modified in order to guarantee more incentives for exporters, especially the ones in the SEZs.¹⁸

After the establishment of SEZ, the government decided to reintroduce a dual-track exchange rate system, under which foreign and domestic enterprises in SEZs were allowed to trade their retained foreign exchange at a “Swap Rate”. The official exchange rate was adjusted periodically responding to fluctuation in the value of a basket of currencies, while the swap rate was determined by the market, depreciating over time responding to economic-based forces.¹⁹ The first Swap Center (or Foreign Exchange Adjustment Center) was established in November 1985, and by the end of 1993, there were 108 local swap centers in China. Chodosh made an interesting description of Swap Centers; in his article, he stated:

“The Swap Center, as established in the PRC, provides an excellent model for partial devaluation of local currency, which is designed to starve the black markets and to improve the trade balance by enhancing exports. While avoiding the social costs of full devaluation, that is, those resulting from rampant inflation, partial devaluation through the Swap Center model tends in theory to enhance foreign trade in two respects. First, partial devaluation stimulates Chinese exports by reducing the cost of those goods to foreign consumers. Second, partial devaluation attracts more foreign capital investment in the development of new export markets by allowing greater repatriation of profits to those investors. Swap Centers also create a greater availability of foreign exchange for investors who need it for their ongoing operations.”²⁰

At the beginning, only Foreign Funded Enterprises were able to access the swap market, but moving forward the access was given to nearly every enterprise that had foreign retention earnings and, in 1991, even to domestic residents that wanted to sell foreign exchange. After this opening, the volume of transactions of foreign exchange in the swap market inevitably increased and, according to Lin and Schramm’s study of 2003,

¹⁸ WEN (2014).

¹⁹ Yi Jingtao (2008), *Policy Options for China’s Exchange Rate Regime in the Post-Reform Era*, China Policy Institute, Nottingham University, Discussion Paper 26.

²⁰ CHODOSH E. Hiram (1991), *Swap Centers in the People’s Republic of China: A Step Toward Partial Convertibility of Local Currency*, *The International Lawyer*, Vol. 25, No. 2. Pages 415-442.

the swap rate was used in 80% of China's foreign exchange transactions.²¹ In 1993, the swap rate increased to 8.7 RMB per USD, while the official rate remained at 5.7 RMB per USD. This gap made clear to the Chinese government that more reforms were needed.

In November 1993, the Third Plenum of the Fourteenth Central Committee of the Communist Party of China endorsed the creation of the "socialist market economy", a combination of both planning and market economies, with the coexistence of strong political authoritarianism and a market economy.

Later, at the beginning of 1994, China adopted the most comprehensive scheme of the RMB exchange rate regime reform; a market-based unified floating exchange regime and RMB convertibility were the ultimate goals of these reforms. Chinese intentions about a transition to the free fluctuation of the exchange rate were clear even back then, but as history shows accomplishing that was easier said than done. Some of the most relevant measures of these reforms included the abolishment of the dual-track exchange system (the one reintroduced with the creation of the SEZs) and the simultaneous introduction of the managed floating exchange rate regime based on market supply and demand with reference to the US dollar. The foreign exchange retention system was also abolished and Chinese enterprises were prohibited from holding foreign exchange earnings from current account as well as from pricing in foreign currency in the domestic market.²² This new system was called foreign exchange surrender and purchase system (FESPS). Firms could surrender their foreign exchange earnings from current account transactions at the official rate, and purchase foreign exchange from a Foreign Exchange Designate Bank when they needed to make a payment in foreign currency.

In 1994, the China Foreign Exchange Trade System (CFETS) was founded in Shanghai as the interbank market for foreign exchange transactions for domestic enterprises, as a replacement of the old foreign exchange adjustment market. The members of these interbank transactions include the central bank, foreign exchange banks, and non-bank financial institutions approved by the SAFE. This important financial infrastructure is still active in China and undertakes daily monitoring on market transactions, provides support and service for PBC's monetary policy transmission and

²¹ GUIJUN Lin, SCHRAMM M. Ronald (2003), *China's Foreign Exchange Policies Since 1979: A Review of Developments and An Assessment*, *China Economic Review*, 14(3):246-280.

²² WEN (2014).

market self-regulatory organizations and publishes market benchmark (including RMB central parity rate, RMB reference rate) offering reference prices for the market.²³

In 1996, China officially accepted the obligations included in the Article VIII of the IMF Articles of Agreement, losing its right to impose restrictions on the making of payments and transfers for international transactions without the approval of IMF (previously China could do it for a transitional period). By accepting those obligations, China showed its willingness to encourage further progress in current account liberalization and to facilitate the expansion of a balanced international trade. At the same time, China achieved Current Account Convertibility.

1997 was a crucial year for China; 1997 was the year of the Asian Financial Crisis when the massive devaluation of Thailand's currency (Bath), took down a large number of Asian currencies. As the journalist Justin Kuepper report in his article, "*after posting some of the most impressive growth rates in the world at the time, the so-called "tiger economies" saw their stock markets and currencies lost about 70% of their value.*"²⁴ How did China react to this crisis? China was in a period of changes and started to open up to the foreign market; in many occasions China showed its intention to move to a more open economy with an exchange rate determined by market forces. Therefore, the world was expecting China to accelerate its process of the full capital account liberalization. However, the crisis of 1997 forced China to take a step back; the government decided to narrow the RMB exchange band, in order to prevent the worsening of the crisis fuelled by the competitive currency devaluation, and to maintain strict controls on its capital account. This decision allowed China to survive the financial crisis and it managed to maintain its financial and economic stability. Between 1997 and 2005, the currency remained steadily pegged at 8.27 CNY per USD, the so-called hard peg to the USD.

In December 2001, China became a member of the World Trade Organisation. This event represented a new phase for the opening of China's financial markets, which of course, had a big impact on the RMB exchange rate regime. Further reforms were needed.

China understood that a conventional peg to the USD was no longer a valid option²⁵. In July 2005, China decided to adopt for the first time a managed floating exchange rate

²³ China Foreign Exchange Trade System, National Interbank Funding Center web site
<http://new.chinamoney.com.cn/english/>

²⁴ KUEPPER Justin, The Asian Financial Crisis, The Balance web site,
<https://www.thebalance.com/what-was-the-asian-financial-crisis-1978997>

²⁵ The causes and consequences of China abandoning the US peg will be discussed in the next chapter.

regime based on market supply and demand with reference to a basket of currencies. These currencies were of course chosen between China's major trading partners, and included the US dollar, the Euro, the Japanese yen, the Korean won (these were the four major currencies) the British pound, the Singapore dollar, the Russian ruble, the Canadian dollar, the Malaysian ringgit, the Australian dollar and the Thai baht. As a result of the reforms, China progressively permitted the trading between the RMB and the non-US dollar currencies in the inter-bank foreign exchange market, and their relative floating bands were widen in a gradual manner. The purposes of these changes were to promote and strengthen the bilateral trade and investments between China and other countries, facilitate the Renminbi's cross-border settlement rate and also to meet demands of economic entities to reduce conversion costs.

Another obvious result was the end of the peg to the USD with the consequent revaluation of the Renminbi. The USD/RMB rate was then adjusted and allowed a currency appreciation to 8.11. Unlike a common floating exchange rate, the RMB could fluctuate by up to 0.3% on a daily basis against the basket.

In the years following the adoption of the new exchange rate regime, there was a slow RMB exchange rate appreciation and its flexibility has been greatly strengthened, pointing out the fundamental role of market supply and demand in the exchange rate formation process. From July 21, 2005, to July 21, 2008, the USD/RMB exchange rate went from 8.11 to 6.83, an appreciation of 18.7%.²⁶ For the Yuan against US dollar, the band was widened from 0.3% to 0.5% in May 2007, then to 1% in Apr 2012, finally to 2% in Mar 2014.²⁷

In July 2008, China halted the appreciation of its currency in response to the global economic crisis that caused a declining global demand for Chinese products; a peg to the USD was reintroduced to prevent further appreciation of the Renminbi to the dollar. The RMB/USD exchange rate remained quite fixed at 6.83 until mid-2010.

On June 19th 2010, the People's Bank of China stated that it would "*proceed further with reform of the RMB exchange rate regime and to enhance the RMB exchange rate flexibility.*" It also stated that it would not permit any one-time large revaluation of the Chinese currency in order to avoid risky massive fluctuation of the exchange rate and to let Chinese corporation adjust more effectively to an appreciation of the Renminbi. In

²⁶ MORRISON M. Wayne, LABONTE Marc (2013), *China's Currency Policy: An Analysis of the Economic Issues*, Congressional Reserve Service, RS21625.

²⁷ WEN (2014).

order to promote a more effective internationalization of the Renminbi, in August 2010, China established the Renminbi offshore market (known also as CNH market). This was considered a first experiment of Capital Account liberalization in China, because market forces determined the CNH without the Chinese government intervention and market manipulation (at least before August 2015). At the same time, the CNY exchange rate (the one of the Renminbi onshore market) remain strictly controlled by the PBOC.²⁸ The coexistence of this two exchange rate is another example of the uniqueness of China.

From June 19th, 2010, (when appreciation was resumed) to July 10th, 2013, the USD/RMB exchange rate went from 6.83 to 6.17, an appreciation of 10.7%.²⁹

According to the National Bureau of Statistic of China, the Renminbi continue its process of appreciation until 2014, when the USD/RMB exchange rate reached 6.14. From that moment, the RMB started to depreciate.

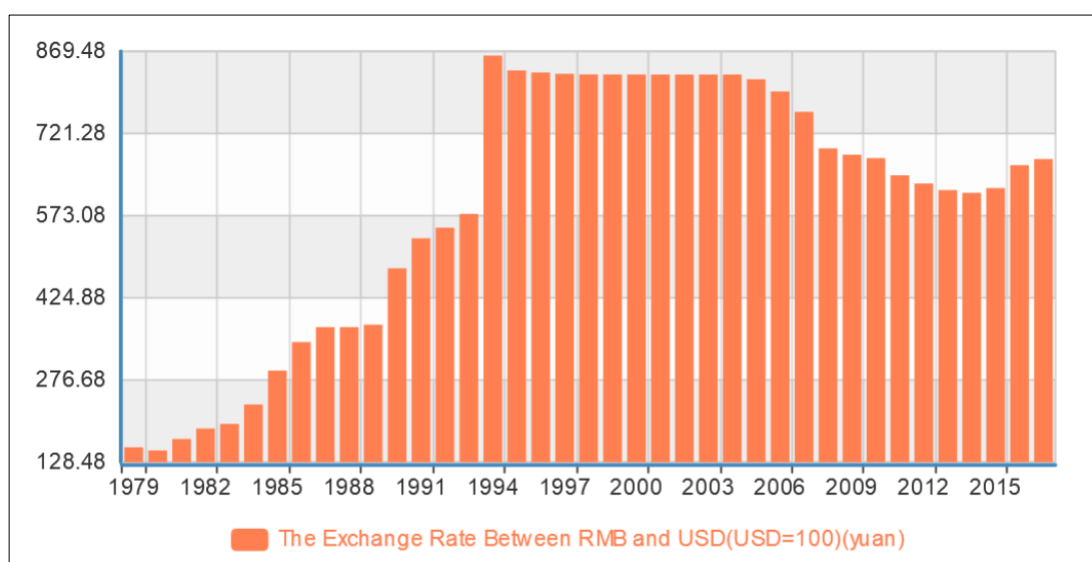


Figure n. 2

The evolution of the USD/RMB exchange rate, from 1978 (year of Deng Xiao Ping economic reforms) to 2017. It is worth mentioning the massive depreciation of 1994, when the managed floating exchange rate regime based on market supply and demand with reference to the US dollar was introduced. The exchange rate was stable during the so-called “hard peg” to the USD, from 1997 to 2005.

SOURCE: National Bureau of Statistic of China.

²⁸ LIANG Youshua, SHI Kang, WANG Lisheng, XU Juanyi (2017), *Fluctuation and Reform: A Tale of Two RMB Market*, March.

²⁹ MORRISON, LABONTE (2013). Page 9.

2.2 LATEST DEVELOPMENTS

Since 2014, China implemented a series of reforms with the purpose of a better and easier internationalization of the renminbi. An example of the successful results of these reforms is the inclusion of Chinese Yuan in the IMF Special Drawing Right Basket (effective from October 1st, 2016)³⁰.

On August 11th, 2015, China implemented a new Exchange Rate Reform and adjusted the CNY central parity formation system. From that date on, the PBOC officially stated that “*daily central parity quotes reported to the China Foreign Exchange Trade System (CFETS) before the market opens should be based on the closing rate of the inter-bank foreign exchange rate market on the previous trading day, supply and demand in the market, and price movement of major currencies. After that, the central parity of CNY was pegged to its closing price in the last trading day more closely.*”³¹ The PBOC officially published for the first time the composition of the reference currency basket. This reform’s aim was to make the RMB exchange rate a better reflection of market forces, but the result was inevitably huge fluctuation in both RMB inshore and offshore markets. The USD, the Euro and the Japanese Yen had the highest weightings at 26.40%, 21.39% and 14.68% respectively, followed by the Hong Kong Dollar (6.55%) and the Australian Dollar (6.27%).³²

Starting from January 1st 2017, the CFETS’s reference basket of currencies increased to 24 from the previous 13. It is known that the more currencies are included in a reference basket, the lower the volatility of the exchange rate index will be. The new CFETS RMB Index is more representative. In 2016, the RMB depreciated by around 6.5% against the USD, and by 3.9% and 9.4% against the Euro and the Japanese Yen respectively. The RMB devaluation was relatively substantial, driving the CFETS RMB Index down. In the first 11 months of 2017, the RMB appreciated 5.08% against the USD,

³⁰ “The IMF Special Drawing Right is an international reserve asset, created by the IMF in 1969 to supplement its member countries’ official reserves. So far SDR 204.2 billion (equivalent to about US\$291 billion) have been allocated to members, including SDR 182.6 billion allocated in 2009 in the wake of the global financial crisis. The value of the SDR is based on a basket of five currencies—the U.S. dollar, the euro, the Chinese renminbi, the Japanese yen, and the British pound sterling.” International Monetary Fund’s website.

<https://www.imf.org/en/About/Factsheets/Sheets/2016/08/01/14/51/Special-Drawing-Right-SDR>

³¹ China Foreign Exchange Trade System (CFETS) website <http://new.chinamoney.com.cn/english/>

³² Hong Kong Exchanges and Clearing’s Research Report (2018), *The RMB Reference Currency Basket and the Implications of a market based RMB Currency Index*, July.

but remained stable against the Japanese Yen and depreciated by 6.8% against the Euro.³³

On January 20th, 2017, the world saw Donald Trump becoming the 45th president of the United State of America. Trumps is well-known for his anti-China position, as his statement made while campaigning for the Republican party's presidential nomination can confirm: he said "*We can't continue to allow China to rape our country and that's what they're doing. It's the greatest theft in the history of the world*". After becoming president, it was only a matter of time before Trump acted against China.

In April 2017, at the "Mar-a-Lago" estate in Florida a historical meeting occurred between the world's two most powerful men: the president Xi Jinping and Donal Trump. This summit was made with the proposal of reaching an agreement and solve the two countries' long-term disputes on trade. The summit's deliberation were only agenda-setting agreements, very far from concrete pacts. Initially, the relations US-China seemed to be peaceful; on May 11th China agreed to increase the US access to the Chinese market in certain industries, suck as the agriculture, energy and financial market. However, over the course of few months started what will go down in history as the "trade war between China and the USA", characterized by a chain reaction of tariffs on goods traded between each other.

The first mover was the US government that, in January 2018, imposed the "*safeguard tariffs on imported large residential washing machines and imported solar cells and modules*"³⁴ introducing a 30 percent tariff on solar panel imports and a 20 percent tariff on washing machines. According to the 2016 snapshot of global photovoltaic market made by the International Energy Agency, China is the world's leader in solar panel generation. Clearly, the USA's decision was a direct attack to the Chinese imports.

A few months later, in March, Trump wanted to reinforce his message and he imposed a 25 percent tariff on all steel imports and a 10 percent tariff on aluminium import.

³³ Hong Kong Exchanges and Clearing's Research Report (2018), *The RMB Reference Currency Basket and the Implications of a market based RMB Currency Index*, July.

³⁴Office of the United States Trade Representative website, <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2018/january/president-trump-approves-relief-us>

China's "counterattack" consisted in imposing some retaliation tariffs on 128 products including wine, fruit, pork and a lot more. China's Ministry of Finance justified this action as a way to balance the losses caused by US tariffs on Chinese products.

From that moment on, China and US started to draft list about tariffs on an ever-increasing number of products³⁵.

The future outputs of this trade war are still to be analysed. The US is asking China to pursue more transparent policies on trade and exchange rate. China, conversely, state that it needs time.

³⁵ For a more accurate timeline, see WONG Dorcas, CHIPMAN Koty Alexander, *The US-China Trade War: a timeline*, China Briefing web site: <http://www.china-briefing.com/news/the-us-china-trade-war-a-timeline/>

3. IS A FIXED EXCHANGE RATE SYSTEM STILL SUSTAINABLE FOR CHINA?

In the previous chapter, all the crucial steps made by China regarding its exchange rate system are discussed. China's history shows that China is in a long and well-reasoned process, which will inevitably end with a free market and a free-floating exchange rate. China has managed to become one of the biggest and strongest economy of the world while maintaining tight controls on capitals and on the fluctuation of its exchange rate. In fact, it is still in a partially open economic contest and its exchange rate is allowed to float only against a basket of twenty-four currencies. How long can this state of affairs last?

As it has been explained in the first chapter, fixed exchange rate systems are doomed to failure, due to their intrinsic problem of "time inconsistency"; a country making a commitment to maintain its exchange rate fixed (or deciding the adoption of a flexible exchange rate system) knows that in the future some elements could refute this commitment's validity. In that event, maintaining the exchange rate fixed would no longer be the best solution for a country, which can decide to break its commitment. As it is already mentioned, this situation could trigger speculative cash flows so significant that they could seriously damage that country's market.

However, a fixed exchange rate is usually the best solution for developing countries or, at least, the most used one. Countries are better keep in mind that fixed exchange rate systems, like pegging their currency to a stronger one, are only a temporary solution that can help strength their currencies and economies. The more a country develops, the more difficult will be to maintain a fixed exchange rate's stabilization policy. China, in its position of first exporter and first economy of the world, necessitates a more open market and a free-floating exchange rate and in this chapter the reason why will be discussed.

3.1 UNSUSTAINABILITY OF STABILIZATION POLICIES

In a free market, there is a supply-demand equilibrium that should be respected. A country can escape this equilibrium only if it is so small that it does not affect this global balance. China tried to escape this equilibrium by pegging its currency to the dollar. At its beginning, this was China's best choice; it had a closed market and it affects the global balance, but only a tiny percentage. Pegging a currency can help developing countries to protect their domestic currency by reducing the likelihood of currency crisis and can also help to gain comparative trade advantages while protecting their own economic

interests.³⁶ Is a Peg still the best choice for China, considering its size of economy and trade flows, and the impact that these have in the global economy?

Every country is free to choose to Peg its currency if it wished to do so and it is free to choose the most suitable monetary policy based on its own economic interests. It is also true that, considering China's situation of first exporter and first economy of the world, a peg, either relative to a currency or relative to a basket of currencies, is no longer an option.

From a global perspective, stabilization policies, both conventional "hard" peg and their softer version (crawling peg, managed float), manipulate the variances of exchange rates by changing the states of the world and the extent to which they appreciate and depreciate.³⁷ Moreover, these stabilization policies could undermine economic forces and distort the global allocation of resources when they are not correctly adjusted along with the changes of a country's economic conditions (it will be discussed that this is exactly China's case). This generates global imbalances and market disruption.

From a local perspective, *during the phase in which the inflow turn to outflow (a phase that is part of the cycle that so many developing countries have gone through so many times before), the temptation to maintain a peg that has worked so well for years is high, but it is crucial not to rely on a peg for far too long.*³⁸ As Jeffrey Frankel report in his article, a regime of greater flexibility for countries with pegged currencies is likely to occur eventually anyways. A country has to exit from a peg when the balance of payments is strong and the currency is in an appreciation phase.³⁹ That was China's situation when deciding to end its "hard" peg to the US in 2005 and switch to a managed float with reference to a basket of currencies.

³⁶ LEE Richard, *Pegged Exchange rates: The pros and cons*, Investopedia.

³⁷ HASSAN, MERTENS, ZHANG (2016).

³⁸ FRANKEL Jeffrey (2004), *On the Renminbi: The Choice between Adjustment under a Fixed Exchange Rate and Adjustment under a Flexible Rate*, HARVARD UNIVERSITY, Faculty Research Working Paper Series, August, RWP04-037.

³⁹ FRANKEL (2004).

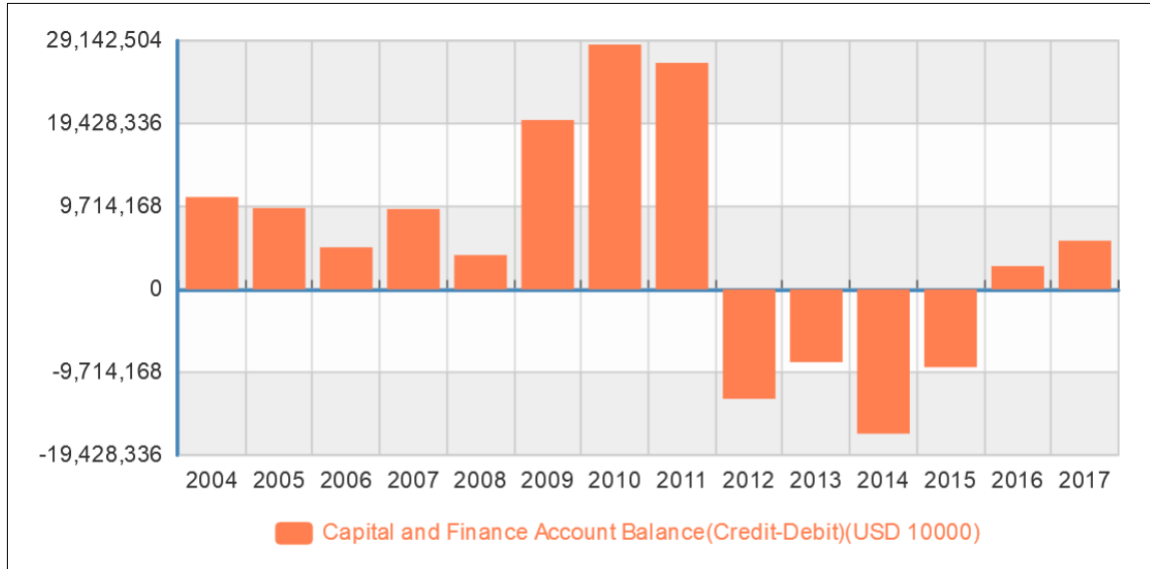


Figure 3
 China's Capital and Financial Account Balance 2004 – 2017.
 Source: National Bureau of Statistic of China

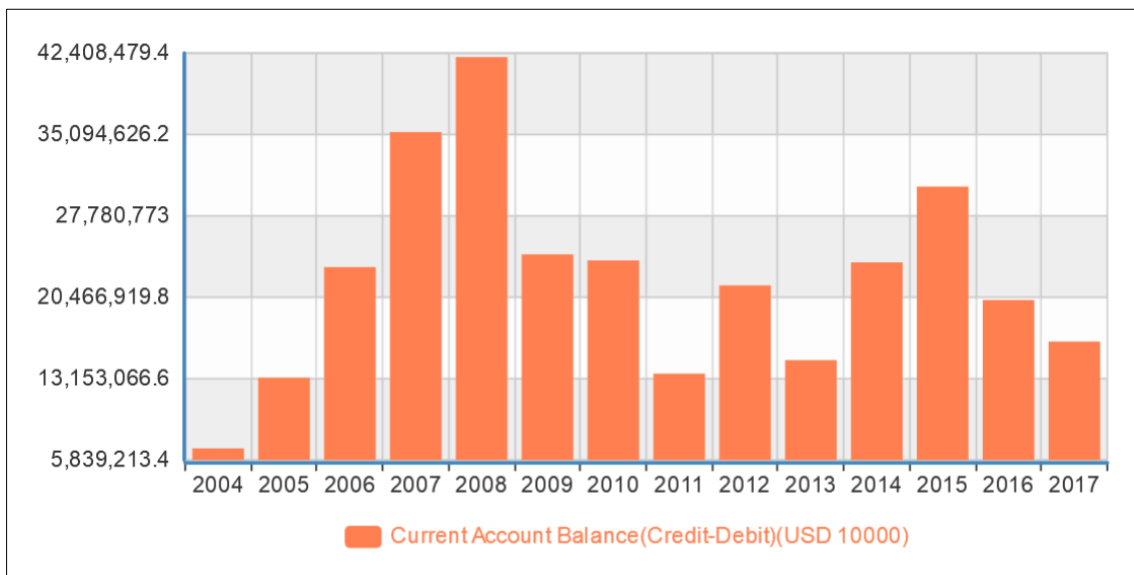


Figure 4
 China's Current Account Balance 2004 -2017
 Source: National Bureau of Statistic of China

However, many countries procrastinate, postponing their exit from the peg either through devaluation or expenditure reduction, and this seems to be China's today situation. The reasons why China is constantly postponing the inevitability of a free-floating exchange rate will be discussed later.

Another reason in support of the idea of the unsustainability of a managed float exchange rate for the Chinese economy is related to the cost of such stabilization policies. Before analysing this topic, let us explain how a peg works. To maintain the managed float exchange rate, China has to control the value of the yuan so it can rise or fall along with the dollar, as well as other currencies in the basket. In Hassan, Mertens and Zhang's study, they argue that

“to stabilize its real exchange rate, the stabilizing country’s government adopts a set of policies that alter the state-contingent plan of imports and exports of traded goods. In particular, when the target country appreciates, the stabilizing country matches that appreciation by reducing traded goods consumption, which raises domestic marginal utility and the price of domestic consumption. Similarly, when the stabilizing country suffers a shock that increases domestic marginal utility and would ordinarily result in an appreciation, it imports additional traded goods to lower domestic marginal utility.”⁴⁰

From this perspective an idea emerges that is, the bigger the stabilizing country is, the bigger the resources are needed to implement and maintain this monetary policy. China must dispose of a big amount of resources, the most important of which are dollars. This seems not to be a major problem for China, which has the largest foreign reserve asset⁴¹, most of which comes from exports. Chinese enterprises exporting, for example, to the U.S. receive dollar as payments for their products and exchange those dollars for yuan in order to pay workers. In this way, banks send those dollars to the central bank, which add them to its foreign currency reserves. These reserves build-up grows along with the current account surplus. The problem of having such huge amounts of foreign reserve is that it increases local currency supply, causing the growth of prices and resulting in inflation and, therefore, in the appreciation of the exchange rate. In order to avoid that, China has to invest its dollar reserves in U.S. Treasuries, which usually pay a low return, in order to strengthen the dollar and lower the value of yuan, returning to a situation of balance. This operation of absorbing the excess of local currency in the financial market, neutralising the effects of imbalances in the balance of payments, is called sterilization. China has always been successful in its sterilizing operations, but they could be challenging to implement, especially if the currency is undervalued.

⁴⁰ HASSAN, MERTENS, ZHANG (2016).

⁴¹ Investopedia, *10 Countries with the Biggest Forex Reserves*,
<https://www.investopedia.com/articles/investing/033115/10-countries-biggest-forex-reserves.asp>

3.1.1 THE RENMINBI IS UNDERVALUED

A large strand of the literature argues that the renminbi has historically been undervalued against the US dollar. As different methodologies and data sets can be used to study potential misalignment, and as different approaches sometimes produce different results, the search for a consensus on whether the renminbi is undervalued continues. The problem is not whether the yuan is undervalued or not, but the degree of its hypothetical undervaluation and its effects on the global economy.

Several economic studies have been released over the years that have tried to estimate the degree of the RMB's undervaluation against the dollar with varying results. Goldstein and Lardy affirm

“any methodology that defines the equilibrium exchange rate for the renminbi as the real effective exchange rate that would produce “balance” in China’s global current account position, or in its basic balance, or in its overall balance-of-payments position, yields the qualitative conclusion that the renminbi is significantly undervalued”⁴².

In July 2011, the IMF argue that it believed *“that the renminbi remains substantially below the level consistent with medium-term fundamentals.”* This was the first time that the IMF published its data of the RMB's undervaluation.⁴³ In July 2012, the IMF declared that *“The renminbi is assessed to be moderately undervalued, reflecting a reassessment of the underlying current account, slower international reserves and in accumulation, and past real effective exchange rate appreciation.”⁴⁴* In May 2013, the IMF repeated its assessment that the RMB remained moderately undervalued against a basket of currencies.

However, according to Morrison and Labonte there is no universally accepted methodology for precisely determining a country's real market exchange rate. The economic conditions and assumptions that are used to determine “equilibrium” exchange rates change continuously.⁴⁵

⁴² GOLDSTEIN Morris, LARDY Nicholas (2007), *China's Exchange Rate Policy: An Overview of Some Key Issues*, Conference on China's Exchange Rate Policy Peterson Institute for International Economics, October 19.

⁴³ International Monetary Fund, *People's Republic of China, 2011 Article IV Consultation*, July 2011, p.18.

⁴⁴ International Monetary Fund's website, <http://www.imf.org/external/pubs/ft/scr/2012/cr12195.pdf>

⁴⁵ MORRISON, LABONTE (2013). Page 29.

To conclude, there is a considerable body of literature on the theory of the undervaluation of the Renminbi. Since the end of the US peg in 2005, China has gradually reformed its currency policy and the RMB effectively has appreciated on nominal basis against the dollar (see Figure 2). In addition, China's trade surpluses have fallen in recent years (see Figure 4) and its accumulation of foreign exchange reserves has slowed (see Table 5). These factors have led some analysts to conclude that the RMB exchange rate with the dollar may be approaching market levels, or is only modestly undervalued.⁴⁶ However, many economist still argue that the RMB is heavily undervalued and are afraid of the consequences for the economic balance. A fixed exchange rate or a managed float whose level is not adjusted when economic conditions changes is a distortion of the global balance and could hinder economic forces, causing a distortion in the global allocation of resources.⁴⁷ In addition, they argue that continued pressure should be made until the Chinese government adopts a market-based exchange rate, but this will be dealt later.

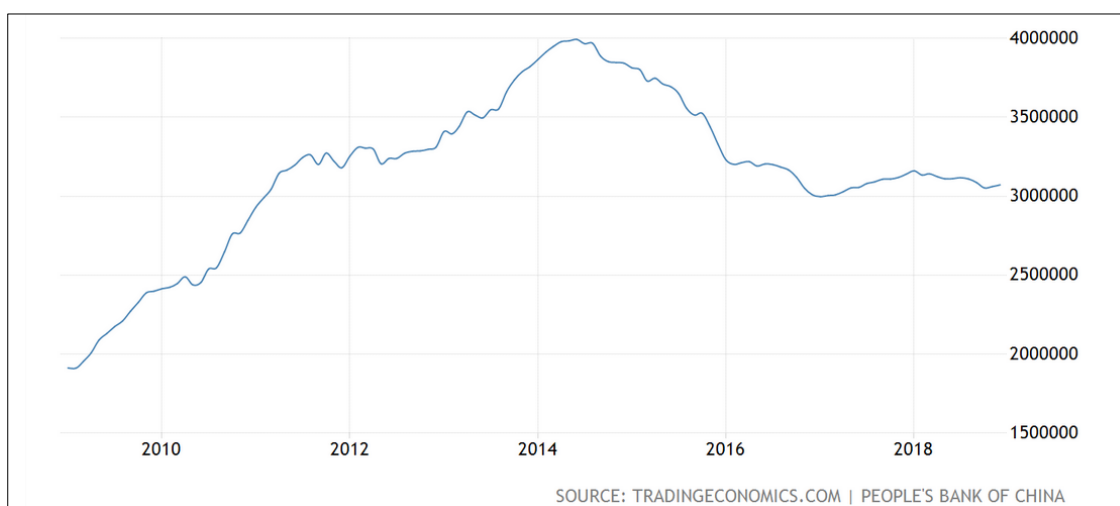


Figure n. 5

China Foreign Exchange Reserves.

Considering full 2018, foreign exchange reserves decreased by USD 67.24 billion to USD 3.073 trillion, compared with a USD 129.4 billion increase in 2017 to USD 3.14 trillion. It marks the third decline in four years, amid a slowing economy and trade pressures.

Source: Trading Economies / People's Bank of China

⁴⁶ MORRISON, LABONTE (2016). Page 6.

⁴⁷ MORRISON, LABONTE (2016). Page 34.

3.1.2 PROBLEMS WITH THE STABILIZATION POLICIES

As anticipated, the operation of “sterilization” of excess currency could generate some problems. China, a country with an undervalued fixed exchange rate and thus a huge current account surplus, will face the challenges of sterilizing increasing amount of supply of local currency resulting from the large-scale purchase of foreign currency⁴⁸. China can afford to buy and hold a large amount of U.S. dollars due to their huge trade surplus with America, and they purchase as many U.S. dollars as nearly the amount of the surplus. Then, in order to avoid that dollars increasing local money supply, China sterilizes the dollar purchases by selling bonds to Chinese investors (like commercial banks). This just weakens the balance sheets of banks and raises the chances of a banking crisis. So far, the Bank of China seems to have had little difficulty selling its sterilization bonds⁴⁹, but this could change soon. If China does not successfully use these sterilization operations, the growth of liquidity in the banking and financial system will lead eventually to inflation that will result in an appreciation of the real exchange rate, causing potential destabilizing cash flows. It is thus true that fixed exchange rate system are usually characterized by strong capital controls, useful for preventing large capital flows when the domestic interest rate is not aligned with the foreign one. Capital controls, however, become more and more difficult to maintain as long as the economy opens up, especially if traditional barriers to capital flows have been gradually eroded. Goldstein and Lardy remind us

*“even when sterilization is used successfully to control the growth of domestic liquidity, when the currency is increasingly undervalued, the authorities will need over time to sell greater quantities of bonds to acquire the funds necessary for sterilization. This, in turn, eventually causes an increase in the interest rate the central bank must pay on these bonds. Eventually the interest the central bank pays on these bonds could exceed their earnings from their holdings of interest-bearing foreign currency denominated financial assets, imposing a substantial financial constraint on sterilization operations.”*⁵⁰

⁴⁸ GOLDSTEIN, LARDY (2007). Page 5.

⁴⁹ ZHANG Chenying (2011), *Sterilization in China: Effectiveness and Cost*, the Wharton School, University of Pennsylvania, Finance Department, June.

⁵⁰ GOLDSTEIN, LARDY (2007). Page 5.

There are different views on this. On one hand, some economists argue that China has always been successful in sterilizing excess currency⁵¹ and can continue these processes indefinitely⁵². On the other hand, other economists acknowledge that sterilization processes could be implemented indefinitely; however, they also argue that these processes are already damaging China's economy and causing financial repression. For examples, they affect China's interest rates structure, defined as "far from optimum".⁵³ Real interest rates have been unusually low for a rapidly growing economy like China. As it happens in other countries with undervalued exchange rates, the Chinese authorities have been reluctant to raise interest rates in order not to attract higher levels of capital inflows that at some point could be more challenging to sterilize. However, one consequence is that real estate and stock market booms and intensifies financial risk.

Another problem is that continuative sterilization processes prolong the balance of payments disequilibrium, because it bypasses the automatic mechanism of adjustment that reserve flows provide under the monetary approach to the balance of payments⁵⁴, making China strongly dependent on export as only source of economic development. A too strong reliance on export make China vulnerable to global economic slowdown's effects.

They also argue that sterilization processes entail hidden costs and risks. China is obliged to buy U.S. Treasury in order to maintain the stabilization policy instead of investing in higher return investments. According to Stephen Kaplan:

*"this policy sacrifices tremendous alternative investment opportunities domestically, including investment aimed at spurring consumer demand and economic development in the interior of the country. At the same time, the undervalued exchange rate reduces the actual purchasing power of domestic citizens, creating welfare losses for broader society."*⁵⁵

Chinese consumers pay more for goods, not only because an undervalued currency made import more expensive, but also because domestic competition is restricted. Rather than use its trade surpluses to purchase goods and services from

⁵¹ Like China did in 2007 when inward capital flows increased dramatically, but the central bank had little difficulty in maintaining control on the growth of the domestic money supply. GREEN Stephen (2007), *China: Calling all PBoC FX Sterilization Geeks*, Standard Chartered On the Ground—Asia, June 18.

⁵² ANDERSON Jonathan (2004), *China: Reminders on the RMB*, UBS Investment Research, November 5.

⁵³ GOLDSTEIN, LARDY (2007). Page 6.

⁵⁴ FRANKEL (2004). Page 11.

⁵⁵ KAPLAN B. Stephen (2006), *The Political Obstacles to Greater Exchange Rate Flexibility in China*, Yale University, World Development Vol. 34, No. 7, pp. 1182–1200.

abroad, China is forced, because of its need to maintain its peg to the dollar, to put a large share of its foreign exchange holdings into U.S. debt securities, which earn a relatively low return.⁵⁶

China must start to implement an economic development based more on expanding domestic consumption and less on a growing trade surplus. This is because when the RMB will be determined by market forces, it will experience significant and frequent changes, typical of an expanding currency, reversing the trend of export. In this case, China will need to implement domestic consumption in order not to rely only on imports and thus face a trade deficit. Shifting to a market-based exchange rate would allow China to stop purchasing low-return US Treasury Bond and better allocate its resources, investing in its local market (for example investing in the service sector), rather than divert the majority of the resources to the export sector.

Another problem with the dollar peg is that it strongly limit China's possibility to control its monetary policies⁵⁷; as explained in the first chapter, when a country made its exchange rate fixed to another currency it is bound to that currency's destiny and to that country's monetary policies. For example, if the U.S. implement inflationary monetary policies, China has to follow the directions set by the U.S. government. If Chinese banks tried to increase interest rates in an attempt to reduce inflation (caused by U.S.' monetary policies), it would face destabilizing capital inflows made by speculators that are trying to take advantage of the temporary higher interest rates. As already mentioned, in managing these capital flows, also known as "hot money", China has always succeed thanks to its tight capital controls and sterilization processes. Nevertheless, this will not be the best solution in the long-run, for the reasons mentioned above.

It emerged that China could continue without much effort to implement the kind of policies it prefers, thanks also to its capability to maintain controls on capitals. However, China is part of the global market and this also mean that it has some obligations under the international monetary system and can be asked to take into account the interests of others, as part of a reciprocal system that has gains for all. The world started to question China's decisions about its exchange rate policies.

⁵⁶ MORRISON, LABONTE (2013). Page 39.

⁵⁷ GOLDSTEIN, LARDY (2007). Page 5.

3.2 EXTERNAL PRESSURES ON CHINA TO IMPLEMENT A MARKET-BASED EXCHANGE RATE

The world is putting an increasingly heavy pressure on China to make sure that it is working to implement a freely floating market-based exchange rate, without any further market interventions to prevent the RMB to appreciate. China can no longer ignore these external pressures, especially if they are coming from its major trading partners and from the major economic institutions.

China became a member of the World Trade Organisation back in 2001, the organisation symbol of free market. However, China maintain its exchange rate fixed and its controls on capital are stable, even if it has an impressive trade volume. China's exchange rate policies and controls on capital run counter some of the WTO's principles, for example the "*More open*" principle, which state

*"Lowering trade barriers is one of the most obvious ways of encouraging trade; these barriers include customs duties (or tariffs) and measures such as import bans or quotas that restrict quantities selectively".*⁵⁸

This is exactly the opposite of what China is implementing lately, as a consequence of the Trade war with USA. Some doubts about China's good conduct could also raise reading the "*More Competitive*" WTO principle:

"Discouraging 'unfair' practices, such as export subsidies and dumping products at below cost to gain market share; the issues are complex, and the rules try to establish what is fair or unfair, and how governments can respond, in particular by charging additional import duties calculated to compensate for damage caused by unfair trade".

This is probably one of the most popular allegation made against Chinese government, i.e. that it is manipulating its exchange rate in order to gain "unfair" trade advantages.

The United States have been at the forefront of the global initiative to tackle China's "unfair" exchange rate policies. President Obama stated in February 2010 that China's undervalued currency puts U.S. firms at a "*huge competitive disadvantage*," and he committed to make addressing China's currency policy a top priority⁵⁹. During a conference in November 2011, he also stated that China needed to "*go ahead and move*

⁵⁸ WTO official website: https://www.wto.org/english/thewto_e/whatis_e/what_stand_for_e.htm

⁵⁹ The White House, *Remarks by the President at the Senate Democratic Policy Committee Issues Conference*, February 3, 2010.

towards a market-based system for their currency” and that the United States and other countries felt that “*enough is enough.*”⁶⁰ Also the 45th President of the United States, Donald Trump, made clear his anti-China position, starting a trade war against China with the purpose of encouraging more transparent Chinese monetary policies and a freely floating RMB exchange rate. They further allege that an artificially undervalued RMB was a major factor behind the increasing American trade deficit, which grew from \$84 billion in 2000 to \$315 billion in 2012 and has reached \$375 billion in 2017⁶¹, and the consequent job losses in the United States. As Morrison and Labonte suggest, most of the economists agree that a more flexible RMB would help to reduce global imbalances, believed to be one of the major factors that caused global financial crisis and economic slowdown.⁶²

Speaking of US employment, some analysts argue that there is a direct correlation between the U.S. trade deficit and U.S. job losses. The Economic Policy Institute (EPI) conducted a study in 2012 whose results claimed that the U.S. trade deficit with China (which EPI claims is largely the result of China’s currency policy) caused the loss of 2.7 million jobs (of which, 77% were in manufacturing) between 2001 and 2011.⁶³ The EPI report states that, while U.S. exports to China support U.S. jobs, U.S. imports from China “*displace American workers who would have been employed making these products in the United States*”.

Are all of the previous allegation substantiated? Are China’s market interventions a tactical move to maintain its competitiveness? Or are they just a result of the stabilization policies? Can China be considered a “currency manipulator”?

3.2.1 IS CHINA A CURRENCY MANIPULATOR?

What does it mean “currency manipulation”? Article IV of the International Monetary Fund's articles of engagement specifies that countries should “*avoid manipulating exchange rates... in order to prevent effective balance of payments adjustment or to gain an unfair competitive advantage over other members.*”⁶⁴

⁶⁰ The White House, *News Conference by President Obama*, November 14, 2011

⁶¹ United States Census Bureau. <https://www.census.gov/foreign-trade/balance/c5700.html>

⁶² MORRISON, LABONTE (2013). Page 6.

⁶³ SCOTT E. Robert (2012), *the China Toll: Growing U.S. trade deficit with China Cost More Than 2.7 Million Jobs between 2001 and 2011, With Job Losses in Every State*, Economic Policy Institute, August 23.

⁶⁴ International Monetary Fund website:

[https://www.imf.org/external/SelectedDecisions/Description.aspx?decision=15203-\(12/72\)](https://www.imf.org/external/SelectedDecisions/Description.aspx?decision=15203-(12/72))

So, is China a currency manipulator? There are two possible answers.

On the “Yes” side, some economists argue that the large increase of foreign exchange reserves that China has experienced in the latest 20 years is an evidence of market intervention in the currency market in order to keep the value of the RMB low, which is also the cause of an increase of Chinese current account surplus. China’s foreign exchange holdings grew significantly from 2004 to 2014, reaching an all-time high of \$399 billion in June of 2014, but that growth slowed sharply in 2016 (\$301 billion)⁶⁵ (see Figure 5). However, as mentioned above, if this is an evidence of market intervention made by the Chinese government, the recent slowdown of accumulation of foreign exchange reserves is a sign that the RMB exchange rate with the dollar may be approaching market levels and therefore, that the government is not pursuing large market interventions.

The English journalist Sebastian Mallaby, senior fellow for international economics at the Council on Foreign Relations (CFR)⁶⁶ states:

“There is no doubt that China manipulates its currency. On April 14, Fed Chairman Ben Bernanke declared that the yuan is “undervalued . . . to promote a more export-oriented economy,” voicing what virtually every economist believes to be the case about Chinese policy. Over the past decade and more, the country’s leaders have made a series of political decisions to peg, un-peg, and re-peg the yuan to the dollar, frequently directing the central bank to keep the currency at the desired level by intervening in the currency markets on a vast scale, accumulating enormous quantities of U.S. Treasury bonds.”⁶⁷

The observation that China’s economy has grown rapidly over the period from 2008 to 2012, in which real GDP grew at an average annual rate of 9.2%, while other countries have experienced slow or stagnant growth since the beginning of the global financial crisis, led to some arguments that China’s exchange rate intervention represents a “beggar thy neighbour” policy^{68 69}. Although China experienced a decline in the Current Account surplus (see Figure 4) dropping to \$140 billion by 2011, effect of the global economic slowdown, China’s growth rate did not suffer much the global crisis, also thanks to the government’s decision to re-peg the RMB to the USD.

⁶⁵ Data source: Trading Economics <https://tradingeconomics.com/china/foreign-exchange-reserves>

⁶⁶ A United States non-profit think tank specializing in U.S. foreign policy and international affairs. <https://www.cfr.org/>

⁶⁷ WOLVERSON Roya (2010), *Is China a Currency Manipulator?*, Council on Foreign Relations, April.

⁶⁸ Policies meant to promote Chinese economic development at the expense of other countries.

⁶⁹ MORRISON, LABONTE (2013). Page 17.

As an evidence of this, U.S. economist Paul Krugman in 2009 argued that the undervalued RMB hampered global economic recovery, estimating that it had lowered global GDP by 1.4%, damaging less developed countries.⁷⁰

On the “No” side, many economists are supporting the hypothesis that China market interventions and controls on its exchange rate are not meant to gain trade advantages or to damage other countries. These are merely strategies designed to keep the level of the RMB inside the boundaries in order to prevent destabilizing cash flows. Therefore China was simply stabilizing its currency, firstly to the dollar, and then to a basket of currencies.

In their aforementioned study, Hassan, Mertens and Zhang assert:

“U.S. policymakers have often voiced concern that China may be undervaluing its exchange rate and that this undervaluation may be bad for U.S. workers. The official Chinese response to these allegations has been that China is merely stabilizing the exchange rate and not systematically distorting its level. The implication of our analysis is that, even if this assertion is accurate, the mere fact that China is stabilizing its currency to the dollar may divert capital accumulation from the U.S. to China, a policy that is likely to be bad for U.S. workers. [...] The reason is that a large economy (such as China) stabilizing its exchange rate relative to a larger economy (such as the U.S.) diverts capital accumulation from the target country to itself, increasing domestic wages while decreasing wages in the target country—thus offering a novel perspective on the ongoing controversy about Chinese interventions in foreign exchange markets.”⁷¹

Their model suggests that there are no hidden market strategies in Chinese market intervention, but they are just the result of stabilization policies.

According to Goldstein and Lardy⁷², keeping the bilateral exchange rate between the dollar and the renminbi at an undervalued rate affects too small a share of China’s total employment growth to guide China’s overall exchange rate policy. In addition, they states that also the hypothesis of overall RMB undervaluation as the basis of China’s development strategy does not stand because China has not managed to deliver an undervalued trade-weighted real exchange rate over much of the past decade.

⁷⁰ KRUGMAN Paul (2009), *Macroeconomic Effects of Chinese Mercantilism*, New York Times, December 31.

⁷¹ HASSAN, MERTENS, ZHANG (2016).

⁷² GOLDSTEIN Morris, LARDY R. Nicholas (2005), *China’s Role in the Revived Bretton Woods System: A Case of Mistaken Identity*, Institute for International Economics, Working Paper Series, Number WP 05 – 2, March.

Mark Sobel wrote in his article⁷³ *“China is where the screams about ‘manipulation’ are the loudest. But the case is by far the weakest.”* He argued that, according to IMF projection, China's current account surplus is falling to under 1% of GDP. The RMB rose sharply against the dollar up to April 2018. Since then, the renminbi has fallen and the Foreign Exchange Reserves, even if extremely high, remain unchanged in the past few years. This demonstrate that there is little evidence of Chinese foreign exchange market intervention. In recent month, the RMB has depreciated against the dollar. Many analyst claim that this fall of the RMB is a move in order to compensate for the relative current account losses, arising from Trump’s tariffs. Sobel has a different view; he states,

*“the renminbi’s decline against the dollar since mid-April (2018) is broadly in line with the dollar’s general rise. The reasons are clear – US growth is solid and interest rates are rising; China’s growth appears to be moderating; and the Chinese authorities have been easing monetary policy. Washington’s continued harsh rhetoric about tariffs against China further exacerbates renminbi selling. It is argued capital controls allow China to tightly manage the currency, but the capital controls are not hermetic.”*⁷⁴

Sobel’s position is clear; China cannot be considered a Currency Manipulator.

Jeffrey Frankel, when speaking about China, states: *“allegations of ‘illegal exchange rate manipulation’ are inappropriate”*.⁷⁵ He supports the idea that every country is free to choose its own monetary policy and China has to determine the policy that better serves its own interest.

In my opinion, China’s market interventions are not intended for gaining trade advantages. With the 1994 Peg to the dollar, China was able to develop an export-led economy which made possible the creation of hundreds of jobs, the attraction of FDI, which permit to gain access to foreign technologies and know-how. Even back then, China’s exchange rate policies could not be considered illicit. China was simply stabilizing its currency to the dollar.

When China decided to adopt a manged float exchange rate, it showed its intention of market opening. The following undervaluation and market intervention were meant to keep the RMB stable and were a result of the stabilization policies.

⁷³ SOBEL Mark (2018), *Currency manipulation: Theory v. reality*, OMFIF, Washington, 22 August.

⁷⁴ SOBEL (2018).

⁷⁵ FRANKEL (2004). Page 4.

Moreover, latest data demonstrates that China's market interventions are almost none. The yuan is approaching market levels, its current account surplus is decreasing and the accumulation of foreign reserves are slowing.

China understood that it can no longer rely on exports and must shift to a domestic consumption model of development. Persisting in pursuing market intervention and keeping the RMB constantly undervalued would be counterproductive for a China that want to shift its focus on the internal demand, but is necessary for a China that is not ready for a freely-floating exchange rate. In conclusion, I think that the motivations behind an undervalued currency and market interventions are not profit-driven but are being driven by the necessity of maintaining the yuan stable while working to implement the domestic market.

These were some of the world's opinions about China's exchange rate policies. But what is China's version?

3.3 CHINA'S POSITION ON ITS EXCHANGE RATE SYSTEM

The Chinese government has stated on a number of occasions that currency reform for an increasingly free exchange rate has always been a long-term goal, which will be implemented gradually. Officials have strongly condemned international pressures to induce China to appreciate its currency, arguing that it hinders China's sovereignty to implement its own domestic economic policies.⁷⁶ The Chinese government has always moved cautiously on its exchange rate reforms, in order not to implement policies that might disrupt the economy causing unemployment and the consequent worker unrest. In China, the economic growth is always been a crucial point for the political stability. China's reluctance to abandon its fixed exchange rate regime relies on the weakness of its domestic financial system. Policymakers fear that open capital markets and adopting a freely floating exchange rate could generate large-scale capital flows and a sharp currency depreciation⁷⁷.

Moreover, Chinese officials reject the allegation made by some economists who are confident that China's exchange rate policies undermine the global economy. As the

⁷⁶ MORRISON, LABONTE (2013). Page 37.

⁷⁷ GOLDSTEIN Morris, LARDY R. Nicholas (2003), *A Modest Proposal for China's Renminbi*, Financial Times, August 26.

Foreign Ministry spokesperson Lu Kang stated, “*We have repeated that China has no intention to spur export through competitive currency devaluation*”.⁷⁸

China has always been consistent with its purposes of greater flexibility for its exchange rate. So, why has China not yet adopted a market-based exchange rate and keeps postponing the inevitable?

In order to proceed with a floating market-based exchange rate China has to proceed with the relaxation of capital controls; this is one of the main issues for China, that use capital controls as a political tool for maintaining the economic and political stability. At the same time, opening capital controls while the currency is undervalued, even if moderately undervalued, will precipitate capital flows that can be destabilizing.⁷⁹ As professor Eswar Prasad states in his article, in the past ten years, the government gradually liberalised capital outflows, hoping that more outflows would reduce appreciation pressures by counterbalancing the huge amount of money coming from trade surpluses and capital inflows. In recent years, when the RMB faced depreciation pressures, China’s Central Bank decided to tighten up again on capital outflows but this initially generates a huge number of panic-driven outflows. The Bank of China was, even in that case, successful in managing the flows of capital.⁸⁰ He further contend that China has to fix its approach to capital flows as well as its exchange rate policy. He states

“Each country and each experience with changing a currency regime is special in its own way. But one common lesson from history is that exiting from a fixed or tightly managed exchange rate at a time of depreciation pressures adds to market turmoil, making the exit messier and harder to manage. Doing this from a position of strength, and combining it with policies to open up the capital account further, could stave off these pressures.”

In essence, China now found itself in what the economists Robert Mundell and Marcus Fleming called “*the impossible trinity*” situation, that is “*a country cannot achieve the free flow of capital, a fixed exchange rate and independent monetary policy simultaneously. By pursuing any two of these options, it necessarily closes off the third.*”⁸¹ According to the economist Duncan Weldon⁸², China's policy mix has been

⁷⁸ Foreign Ministry Spokesperson Lu Kang's Regular Press Conference on April 13, 2017, Ministry of Foreign Affairs of the People's Republic of China.

https://www.fmprc.gov.cn/mfa_eng/xwfw_665399/s2510_665401/2511_665403/t1453551.shtml

⁷⁹ LARDY Nicholas, DOUGLASS Patrick *Capital Account Liberalization and the Role of the Renminbi*, Peterson Institute for International Economics, Working Paper series (WP 11 -6), 2011

⁸⁰ PRASARD Eswar (2017), *China needs to come clean on its exchange rate policy*, Financial Times, September 14.

⁸¹ KENTON Will, *Trilemma*, Investopedia. <https://www.investopedia.com/terms/t/trilemma.asp>

⁸² WELDON Duncan (2015), *China's Impossible Trinity*, BBC News, September 8.

designed to have an independent monetary policy and a controlled exchange rate, which automatically imposed restrictions on the free movement of capitals. However, he argues that in reality the situation is more complicated. China's controls on capitals are not so tight as they should be and the exchange rate is not stable, with periodic semi-pegging to the dollar. With this in view, controls of capital are better to stay in place until China will be able to have an independent monetary policy and a stable exchange rate. As already been discussed, China is not ready to let go its controls on capital.

According to the economist Chi Hung Kwan, in order to achieve the free movement of capitals, China has to first shift to a free floating exchange rate, but before this transition would take place, the government still has to make some adjustments. He states:

*"Based on the impossible trinity theory, China currently adopts an "intermediate system" in which a certain level of fluctuations in exchange rates is permitted and capital mobility is also free to some extent. Under this system, a certain level of independence and effectiveness of monetary policy are maintained. To further enhance the independence and effectiveness of monetary policy, China must shift to a free floating exchange rate system. Under the current managed floating exchange rate system, however, the authorities continue to play a decisive role in determining the yuan's exchange rate through intervention and the setting of the midpoint rate. To shift to a free floating exchange rate system, in which exchange rates are determined by market forces, the authorities eventually will have to terminate the announcement of the midpoint rate and refrain from foreign exchange intervention. Given that a specific schedule has yet to be announced, it may take some time before this transition process is finally completed."*⁸³

Moreover, China needs time in order to gradually introduce more rights in the labour market, increase the salaries and thus raise the living standards. Its objective and its main challenge is to create a domestic market with a purchasing power large enough to absorb most of the national production; to try to enrich the Chinese consumers so that they become the ones who buy Chinese companies' products, vastly enlarging the scope of consumers.⁸⁴

China has to carefully design its further reforms because, as Paul Wachtel says, "*the absence of proper sequencing can be the death knell of good ideas*". However,

⁸³ KWAN Chi Hung (2015), *The Yuan's Shift to a Free Floating Exchange Rate System yet to be Completed*, RIETI (Research Institute of Economy, Trade and Industry), October 14.

⁸⁴ MIAVALDI Matteo (2010), *La vicenda dello Yuan spiegata ad un marziano*, China Files, July.

understanding the right sequencing for a successful transition to a market-based exchange rate is not the purpose of this thesis.

3.4 THE INEVITABILITY OF A FREELY FLOATING EXCHANGE RATE

It has already been explained that China is in a transitional phase, in which it has to make changes in its exchange rate policy, due to the unsustainability of the one currently in force. China has proved to the rest of the world its ability in managing a fixed exchange rate, but this state of affairs cannot last forever due to the cost that stabilization policies imply, and also due to the increasingly strong external pressure that is pushing for a Renminbi determined by market forces.

At this point, there are no doubts that a market-based exchange rate is in China's future.

In addition to what has already been said before in this chapter, it is important also to underline that a freely floating exchange rate is in China's interests, because it would produce long-term benefits for Chinese economy, resulting from the appreciation of the RMB (currently supposed to be undervalued).

Morrison and Labonte⁸⁵ listed some examples of these benefits:

- prices for imported goods and services would decrease and the domestic economy would be exposed to greater global competition, thus lowering prices for consumers and improving Chinese living standards;
- the economic efficiency (and hence economic growth) would increase, thanks to the better allocation of resources, away from inefficient sectors of the economy (and often over-subsidized, as export) to those that could become the ones more efficient and competitive;
- the efficiency and competitiveness of many Chinese domestic firms would also increase, due to the lowering prices for imported inputs, raw materials, and machinery, thus boosting their output;
- the development of domestic financial markets would happen through the participation of foreign investors and there would be more opportunity for Chinese investor to benefit from international portfolio diversification;

⁸⁵ MORRISON, LABONTE (2013). Pages 39-40.

- more exchange rate flexibility would allow the central bank to use monetary policy and other market instruments capable of managing and controlling inflation and credit. This in turn would help in reforming the banking system, improving again the allocation of capital, and easing financial system risks;

- last but not least, a market based exchange rate would reduce the source of tensions between China and its major trading partners, some of whom view China's undervalued currency and its use of subsidies as beggar-thy-neighbour policies that promote economic development in China at the expense of growth in other countries.

It is clear that implementing a freely floating exchange rate is in China's interests on many levels. If China "plays its card right", it will complete its transition to a fully open market without destabilizing too much its economy and thus the global one. Of course, this inevitable transaction will produce effect on global scale, whether it will be a success or not.

Which will be the effects on foreign companies?

4. IMPLICATIONS FOR FOREIGN COMPANIES

The purpose of this chapter is to investigate the possible effects on foreign companies that could emerge during the Chinese transitional phase toward the free fluctuation of its currency, and provide some advices about the strategy to implement when dealing with the Chinese financial market.

What is going to happen when China will liberalize its currency? The right answer is it depends on China situation at that time. Was China able to bring the yuan closer to its real value? Has China succeeded in strengthen its service sector and domestic market? Has China relaxed its controls on capitals? The varieties are endless and the results hard to predict. What is certain is that China is going to have a free-floating exchange rate in the future and foreign market has to get ready for this, and this process would increase the RMB's exchange rate volatility.

4.1 GLOBAL EFFECTS OF CHINA'S TRANSITIONAL PHASE TOWARD THE FREE FLUCTUATION OF ITS EXCAHNGE RATE

As it has been already discussed, the effects of RMB completely free to float according to market forces are hard to predict because they depend on China's overall situation at that time. However, if China decided to open its economy and liberalize its currency under present circumstances, probably, since China is in a situation of trade balance surplus, a readjustment of the global competitiveness will occur and thus the RMB would probably appreciate.

What happen when a currency's foreign exchange appreciates? Currency appreciation is an increase in the value of one currency in relation to another one. Owing to this increase, local product will became more expensive and foreign product cheaper, causing an increase of import and a decrease of export for the country whose currency appreciated. Of course, the appreciation due to the changes in the country's exchange rate might take time before it can affect the country's balance of trade and balance of payments.

Countries that are looking forward to the appreciation of the Renminbi are many; they think that it would help to restore the global balance. However, the International Monetary Fund think that the Renminbi appreciation alone would produce only limited benefit to the global economy. It believes that in order to actually boost the global economy, China

has to implement its local consumption and improve the service sector, along with the appreciation of the Renminbi. If China decided to let its currency appreciate, under today conditions and without other reforms, the result would be an upheaval of the balance of payments, from a situation of surplus, to a situation of deficit. China then would depend on imports, because its domestic market would not be ready to compete with the foreign one. In its study, it estimates that a hypothetical 20% RMB appreciation would boost, for example, the US economic growth (one of China's major trade partner) by 0.05% to 0.07%, while an appreciation combined with further reforms made in order to rebalance the Chinese economy would boost US growth by over 0.15%.⁸⁶

From an economist's perspective, adopting a more market based currency would likely be a favourable situation for China and the global economy as a whole, in the sense that it could end with a more efficient global allocation of resources and thus a readjustment of each country competitiveness. Even though there are numerous factors affecting global economic growth and the relative trade flows, let us assume that an appreciation of the RMB produces a significant change in the global trade balance. What would be the effect for the global economy?

When the RMB happen to be less expensive than it would be if it were determined by market forces, due to Chinese exchange rate policies, it causes Chinese exports to be comparatively cheap and foreign companies' exports to China to be comparatively expensive. As a result, foreign companies' exports and the production of their goods and services that compete with Chinese imports would decrease, in the short run. This causes an increase of foreign countries' balance of trade deficit and reduces aggregate demand in the short run. A market-based exchange rate could boost foreign companies' exports to China and provide some relief to those firms that directly compete with Chinese firms.⁸⁷

However, a big portion of foreign companies import from China capital equipment and product's part to produce finished goods. An undervalued RMB make Chinese input cheaper for those kind of companies, lowering the price of their finished products, increasing their output and thus strengthening their competitiveness internationally. Firms that rely on imported Chinese parts for their manufacturing process could face higher costs, attributable to the increase of the value of the Chinese currency, making them relatively less competitive.

⁸⁶ International Monetary Fund, *People's Republic of China, 2011 Article IV Consultation*, July 2011, p. 36.

⁸⁷ MORRISON, LABONTE (2013). Page 34.

As stated by the economist Morrison and Labonte, “*a society’s economic well-being is usually measured not by how much it can produce, but how much it can consume.*”⁸⁸ An undervalued RMB inevitably lowers the price of imports from China. In this way, foreign countries are able to increase their consumption through an improvement in the terms-of-trade, which means that for every unit of export sold these countries can buy more unit of imported goods.⁸⁹ Therefore, from a long-term perspective, the lasting effect of an undervalued RMB is to increase the purchasing power of foreign countries’ consumers. An appreciation of China’s currency could raise prices for foreign countries’ consumers, lowering their economic welfare, thus meaning they will be able to spend less on other goods and services, because they will need more money in order to purchase Chinese products.

A RMB not in line with market values also affect foreign borrowers. It is known that the U.S. is China’s main borrower, because every time the dollar face a current account deficit with China, China provides to invest the same deficit’s amount of capital in the United States, in order to keep the value of the exchange rate stable. In this way, the Chinese central bank or private Chinese citizens invest in U.S. assets, which allows more U.S. capital investment in plant and equipment to take place than would otherwise occur if China’s currency were not linked to the US dollar. Private U.S. firm are thus benefiting from the lower interest rate caused by the steady capital inflows coming from China.

It is worth mentioning that the Chinese Central Bank’s main purchase of U.S. assets consists of U.S. Treasury securities, which is the major source for funding U.S. federal budget deficits. According to the Treasury Department of the United States of America, in November 2018 the estimated foreign holdings of U.S. Treasury bonds and notes have seen China as the main and largest foreign holder of Treasury securities, reaching \$1.1 trillion in such securities.⁹⁰ Some analysts contend that, even if an appreciation of the RMB could help boost global economy, and thus U.S. exports to China, it could also reduce China’s need to buy U.S. Treasury securities, which would increase U.S. interest rates and cause a big deficit in the American economy. If the Chinese central bank would no longer purchase U.S. assets to maintain the peg, U.S. borrowers, including the federal

⁸⁸ MORRISON, LABONTE (2013). Page 34.

⁸⁹ Economics Online https://www.economicsonline.co.uk/Global_economics/Terms_of_trade.html

⁹⁰ Department of Treasury / Federal Reserve Board of the United States of America, *Estimates of Major Foreign Holder of Treasury Securities*, January 2019 <http://ticdata.treasury.gov/Publish/mfh.txt>

government, would then need to find new investors to finance their borrowing. The increase of interest rates in the United States would lessen the expenditures on interest-sensitive purchases, such as real estate, capital investment and consumer durables. The decrease in investment spending would reduce the long-run size of the U.S. capital stock, and thus the U.S. economy.⁹¹ This gives some economists grounds for concern. For example the economist Marc Labonte fear that a sudden decline of Chinese purchase of the American assets, due to the Chinese shift to a market based currency, could generate a depreciation of the U.S. dollar so big that it could destabilize the American economy, and thus the global one.⁹²

As already discussed, China's effect on the global economy as well as on foreign companies will depend on China's overall situation at the time of its transition to a freely floating exchange rate. What is sure is that China would also shift the focus of its economic growth to the implementation of its domestic market and will stop to rely only on export. The government will relax its controls on capitals and will become easier to penetrate the Chinese market. Price will inevitably increase, as well as the standard of living, the working conditions and thus the purchasing power of Chinese consumers. China could become a new interesting market for placing and selling foreign companies goods.

For companies directly competing with Chinese products, there would be positive changes in terms of competitiveness. An increase in prices of Chinese goods due to a market based RMB would ideally rebalance the levels of competitiveness among countries, and thus the purchasing parity power, impossible under nowadays driven RMB undervaluation.

Different situation will be for companies purchasing input from the Chinese market; this kind of companies has to take into account the increases in Chinese's output and act accordingly in order not to lose their competitiveness. In the next section, how to manage this kind of risks will be discussed.

⁹¹ MORRISON, LABONTE (2013). Page 40.

⁹² LABONTE Marc (2012), *The Sustainability of the Federal Budget Deficit: Market Confidence and Economic Effects*, Congressional Research Service's Report number R40770, December 14.

4.2 CHINESE CURRENCY'S FLUCTUATION EFFECTS ON COMPANIES AND RELATIVE STRATEGY FOR HEDGING DERIVING RISKS.

During China's transitional phase toward a free-floating exchange rate, there will be a more volatile exchange rate context, due to the predictable and often adjustment that the government would implement in order to bring the value of the Renminbi closer to market levels. Changes in exchange rates may affect the settlement of contracts, cash flows and the firm valuation. Companies must put extra attention in taking risks associated with the use of the Renminbi.

According to the Bank for International Settlement, in 2016 the RMB was the eight most traded currency in the world. The report states:

*"The renminbi doubled its share, to 4%, to become the world's eighth most actively traded currency and the most actively traded emerging market currency, overtaking the Mexican peso. The rise in the share of renminbi was primarily due to the increase in trading against the US dollar. In April 2016, as much as 95% of renminbi trading volume was against the US dollar."*⁹³

As the Renminbi become more and more internationalized, an increasing number of firms is starting to use the RMB for setting the price of their trade transactions. When a company makes transactions with more than one currency, it has to deal with the Currency Risk. The problem is related to the impact that the changes in the exchange rate produces on the cash flows of the company that could cause both an increase in the firm's cost and the deterioration of the profit margin. When working with more than a currency, companies has to take into account two types of resulting risk exposures: the Transaction Exposure and the Economic Exposure, both related to the changes in the exchange rate.

The Transaction Exposure is the typical financial risk; it applies to the fluctuation of the exchange rate and their impact on the company's cash flows relative to the existing obligations, affecting the company's short-term management.

The Economic Exposure is the one that applies to the unexpected fluctuation of the exchange rate and their impact on the company's future cash flows, foreign investments and earnings, affecting the company's medium/long-term management.

⁹³ Triennial Central Bank Survey Foreign exchange turnover in April 2016, Bank for International Settlements Monetary and Economic Department, September 2016, Annex tables revised on 11 December 2016.
<https://www.bis.org/publ/rpfx16fx.pdf>

The company can offset these two types of risk exposures through different financial products and strategies. Unlike Transaction Exposure, Economic Exposure is difficult to measure and hence more challenging to hedge. For the Transaction Exposure all the fluctuations of the nominal exchange rate are relevant, because if the nominal quotation changes may produce an impact in both the accounting and treasury performances of the company. However, this is not the case for the Economic one, where the risks is more related to the possible downturns emerging from a deviation from the purchase parity power (PPP), so the real fluctuations of the exchange rate are relevant, not the nominal ones.

Let us now further analyse this two types of risk exposure and how companies can hedge them through financial products. How these financial products and strategies do apply to the Chinese financial market will also be analysed.

4.2.1 TRANSACTION EXPOSURE

This kind of risk exposure affects every company that has transactions in more than one currency and is related to the company's already existing financial obligations. It affects the short term management of a company. A high level of exposure to the fluctuations of the exchange rate is dangerous and can result in losses for the company. Whenever the company has foreign-currency-denominated receivables or payables, it is subject to transaction exposure, and their settlements are likely to affect the firm's cash flow position.

The risk related to transaction exposure is unilateral because only the company that pays or receives money in a foreign currency will be affected by this exposure. The entity paying or receiving funds in its local currency is not subject to the same risk.

When two companies with two different currencies settle a transaction, they decide what currency they shall use. Let us suppose that a U.S. company wants to purchase some products from an Italian company. They both agree that the U.S. company will pay the product using the Italian's company local currency, the euro. Supposing that the value of the euro to the dollar could be a 1-to-1.5 ratio, it means that for every euro in product the U.S. company agrees to purchase, it costs the U.S. company \$1.50. Once they conclude the agreement, it might take a while before the purchase take place. Meanwhile, the exchange rate may change before the purchase

is done. This is when the transaction exposure takes place. While it is possible that the values in the exchange rate between the dollar and the euro will not change, it is also possible that the rates could become more or less favourable for the U.S. company, depending on factors affecting the international currency marketplace.

How can a company withstand this external risk? Some financial products help companies offsetting the risk of transaction exposure. These are also called hedging financial products. A hedge is an investment to reduce the risk of adverse price movements in an asset. In order to understand the process of hedging let us first analyse what the Forward Market is.

In the Forward Market companies are contracting with international banks today for future purchases or sales of foreign exchange. The Forward Price is the result of these transactions and can happen to be the same as Spot price (the cost of the immediate purchase or sale of foreign exchange), but usually it is higher (premium) or lower (discount) than the spot price. FWD exchange rates are quoted on most major currencies for a variety of maturities, along with the spot quotations. Bank quotes for maturities of 1,3,6,9 and 12 months are available.

In this market, companies can purchase or sell some of the abovementioned financial products that can help companies in managing the currency exchange risk (hedging). These products can be divided into two big families of financial products: SYMMETRICAL products and ASYMMETRICAL products.

Symmetrical products secure a stated price of foreign currency whatever will be its direction and the magnitude of fluctuation. The most famous product is the FORWARD contract, a "*vehicle for buying or selling a stated amount of foreign exchange at a stated price per unit at a specified time in the future.*"⁹⁴ Fix today the price a company will pay/get for a given amount of foreign currency at a given maturity.

Asymmetrical products, instead, secure a stated price when market price moves to one way and the market price when it moves to the other way. It is up to the company to decide whether to pay the stated price or to work on the free market. The most famous products are options, contracts giving the owner the right (but not the obligation) to buy/sell a given quantity of an asset at a specified price at some time in the future.

⁹⁴ EUN Cheol, RESNICK Bruce (2018), *International Financial Management*, eighth Edition, McGraw-Hill / Irwin Series in Finance, Insurance and Real Estate.

Symmetrical products are easier to obtain, lower in cost and available for many underlying asset and many delivery date. Asymmetrical products are more expensive, but also more flexible.

4.2.1.1 HEDGING WITH FORWARD CONTRACTS

When a company buy or sell a FWD contract, it is said that is taking respectively a Long positions or a Short position.

A company buying a FWD contract is said to be “taking a Long Position”, and it is usually taken by who is expecting to make profit from the foreign currency’s appreciation. The price they will pay if the appreciation happen will be lower than the SPOT one. They fix a price today that will pay in the future, and they will be immediately in the position to resell the currency at a higher price because the spot price next month will be higher than the price forward they fixed.

A company selling a FWD contract is said to be “taking a Short Position”, and it is usually taken by who is expecting to make profit from the foreign currency’s depreciation. The company fix the price today it will cash in the future. This operation is profitable for the company if the SPOT price that will happen in the future will be lower than the one the company is fixing today.

Compare the expected depreciation or appreciation with the situation of a Forward Price at Premium or at Discount. Suppose that a company is taking a Long Position (waiting for an appreciation of the currency). If it buys the foreign currency at a PREMIUM, the company is already paying a price that is higher than the SPOT one. Part of the appreciation is already paid by the company, is already in the price.

Example: A company is waiting for an appreciation of the USD. Today the SPOT quotation is 1.18 and its expectation is that in one month the quotation of USD will be 1.10. The company should buy FORWARD because it is able to fix today the price of USD it will pay next month to buy USD. This is the best solution for a company waiting for an appreciation of USD from 1.18 to 1.10. First of all, the company has to be sure that its expectation are right. Second, it has to pay attention to the FWD quotations, because FWD price may be quoted at a premium or at discount. If the FWD price is quoted at a premium, it means that it could happen that the FWD rate is already 1.10. If the company’s expectation were 1.10, it is clear that taking a long position is not in the company interests, because the FWD price has already offset its expectation.

A company has to pay attention of the FWD quotation and has to make sure that its expectation are compared with the FORWARD price, not the SPOT one.

Also a company's business risk profile can be defined as taking Long or Short position. What is a company's business risk profile? Is the impact that the fluctuations of the prices of a foreign currency produce on company's performance, so basically on its profit.

Let us analyse the exporters and the importers' business risk profile. An exporter will cash somewhere in the future a given amount of foreign currency for the product sold in the foreign market. It can be assessed that he is LONG in foreign currency, so it means that the more the foreign currency appreciate the higher is his profit. If the foreign currency depreciates, the exporter will receive less than the initial stated price, thus less than he would have received if there would have been no changes in the foreign currency exchange rate, and can even suffer a loss if the amount of money he will cash is lower than the cost of production.

The opposite is the position of an importer that has to pay a given amount of foreign currency at maturity for the purchasing of foreign products. It can be assessed that he is SHORT in foreign currency. If the foreign currency appreciates, the costs of the product he has to pay would increase and the profit for the business falls down. If the foreign currency depreciate, the profit margin goes up because of the reduction in the cost the company has to pay.

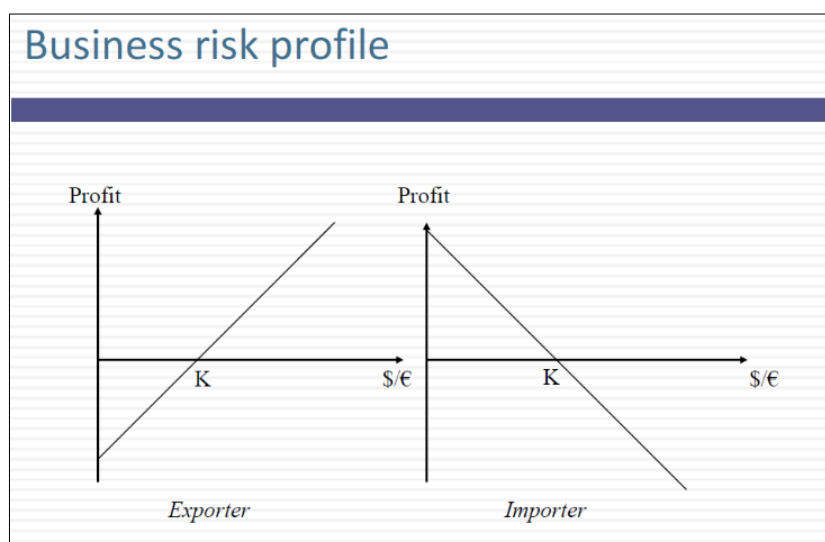


Figure n. 6

Representation of Exporter and Importer's Business Risk Profile.

Source: BERTINETTI, Finanza Aziendale Internazionale, 2006

So how do a company hedge?

Hedging means to combine the risk profile of the company and the risk profile of the contract that it want to exercise. Figure n. 7 is the representation of the Forward Contract's risk profile, useful when deciding which product a companies need for hedging purposes.

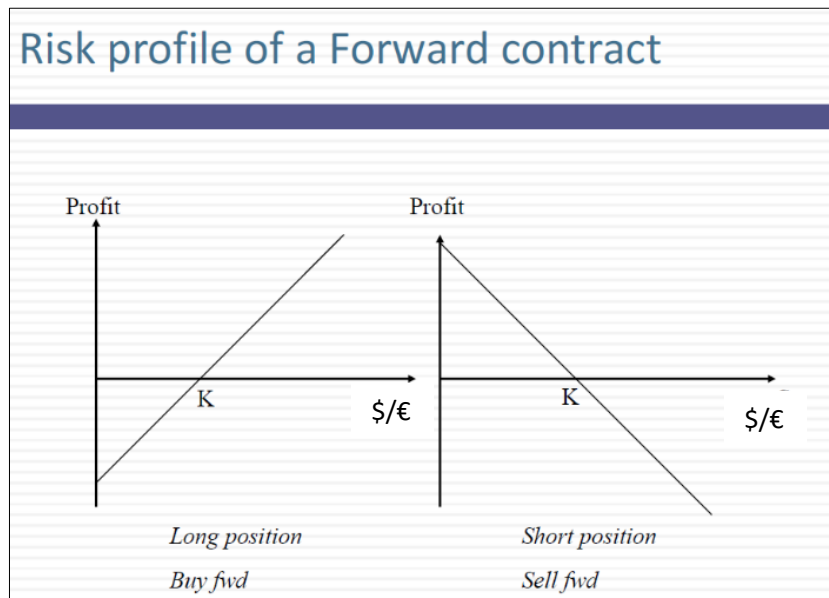


Figure n. 7

Representation of the risk profile of a FWD contract

Source: BERTINETTI, Finanza Aziendale Internazionale, 2006⁹⁵

Now we consider the hedge with FWD contracts. Combining the exporter's business risk profile, that is Long Position FWD, with the relative risk profile of the hedging product he have to use, that is selling a FWD contract, also called Short Position FWD. The result is the Hedge Position. The exporter fix today the amount of profit he is going to gain at maturity, regardless the changes in the quotation of the exchange rate at maturity. This way the risk connected with the Transaction Exposure, resulting from the variation of the exchange rate is completely offset (Figure n. 8).

The importer's situation is symmetrical to the exporter one. The importer's business risk profile is Short of foreign currency, thus he has to buy a FWD contract in the financial market also said he is taking a Long Position. As an importer, he has to pay at maturity a given amount of foreign currency. Buying this money forward, he

⁹⁵ BERTINETTI Giorgio (2006), *Finanza Aziendale Internazionale, Verso un approccio manageriale per la gestione del rischio di cambio*, G. Giappichelli Editore – Torino.

fix today the price he will pay at maturity in order to buy the amount of foreign currency he need for the import transaction. He moves from a risky position to a hedge one, where he is sure to get a given amount of profit in any case. The dynamics of the future exchange rate are no longer relevant for the importer and the Transaction Exposure Risk can be considered hedged. (Figure n.9)

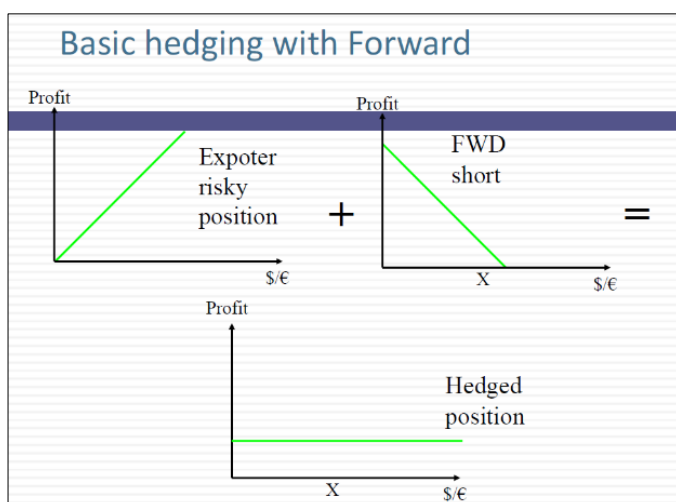


Figure n.8
Basic hedging of the exporter risk profile with a FWD Contract
Source: BERTINETTI, Finanza Aziendale Internazionale, 2006

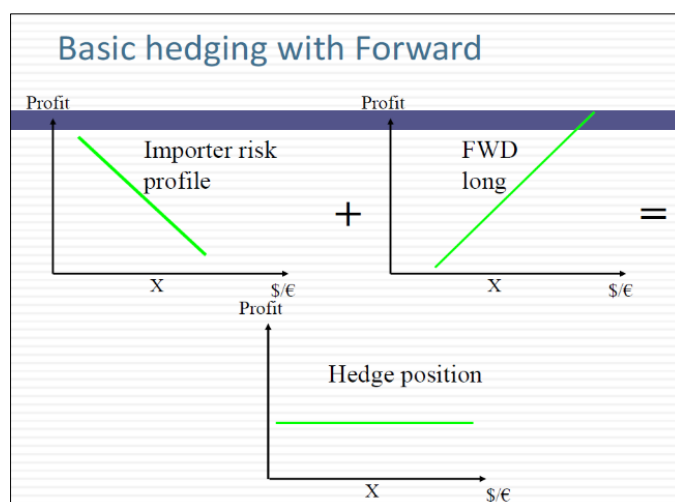


Figure n.9
Basic hedging of the importer risk profile with a FWD Contract
Source: BERTINETTI, Finanza Aziendale Internazionale, 2006

Working with symmetrical hedging products, also defined as FWD contracts, both the downside (profit lower than expected) and the upside risk (profit higher than expected) disappear. How to choose whether to hedge or not with FWD contracts? It depends also on the company risk aversion.

In the case of the exporter going Short on FWD contract, the gain will be *positive* as long as the FWD exchange rate (F) is higher than the spot rate on the maturity date (S_T) that is $F > S_T$. The gain will be *negative* if the opposite situation holds. The exact opposite is the situation of an importer going Long on FWD contracts. It is important to underline that the absolute analysis is ex-post, in fact no one can know for sure what the future spot rate will be beforehand. Firm must decide whether to hedge or not ex-ante. When the firm has to decide whether to hedge or not, it is important that it considers this variables:

1. $S_T \approx F$ (FWD rate) \rightarrow “expected” gains/losses are approximately 0 (S_T \rightarrow denotes the firm’s expected spot exchange rate for the maturity date). In this scenario firm can eliminate foreign exchange exposure without sacrificing any expected earnings deriving from changes in the foreign exchange rate. The firm would be inclined to hedge as long as it is averse to risks.
2. $S_T < F$ \rightarrow firms expect a positive gain from FWD hedging since the firm expects to increase the foreign exchange proceeds while eliminating exchange exposure, it would be even more inclined to hedge under this scenario. However, this scenario implies that the firm’s management dissents from the market’s consensus forecast of the future spot exchange rate as reflected in the forward rate.
3. $S_T > F$ \rightarrow when lower foreign currency proceeds are expected, the firm can eliminate exchange exposure via the FWD contract only at the cost of reduced expected foreign exchange proceeds from the foreign sale. Firm would be less inclined to hedge under this scenario. Whether the firm actually hedges or not depends on the degree of risk aversion. The more risk averse the firm is, the more likely is to hedge.

4.2.1.2 HEDGING WITH OPTIONS

As already mentioned, an option is “*a contract giving the owner the right, not the obligation, to buy or sell a given quantity of an asset at a specified price at some time in the future. Like a forward contract, an option is a derivate, or contingent claim, security. Its value is derived from its definable relationship with the underlying asset, in this case foreign currency, or some claim on it.*”⁹⁶ An option to buy foreign exchange is called a CALL option, and an option to sell the foreign exchange is called a PUT option.

The CALL options gives a company the right to buy a given amount of foreign currency at a given price, called the strike price. The strike price is the price a company will pay at maturity if it decides to exercise the option. Is up to the company whether to exercise the option or not. The PUT options gives the owner the right to sell a given amount of foreign currency at a given price. In option terminology, the buyer of an option is also referred to as the Long, and who is selling the option is referred as the writer or the Short.

⁹⁶ EUN, RESNICK (2018).

If somebody buys an option, somebody else is selling that option because is a contract between two parts. That is why there is a LONG position (who is buying the option) and a SHORT position (who is selling the option) in the CALL. The same is for the PUT option, with the LONG position (who buys the option) and the SHORT POSITION (who sells the option).

Because the owner of the option is free to decide whether to exercise its option or not depending on the market situation and if he can make a profit, the option has a price, also called premium.

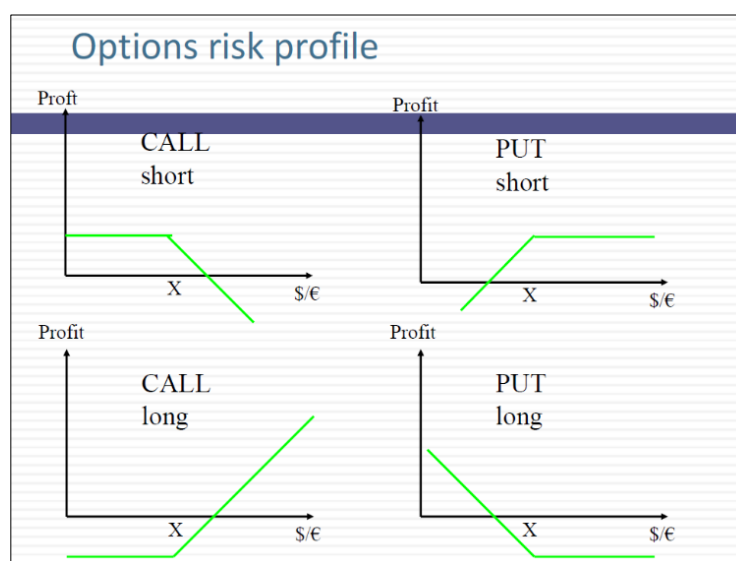


Figure n.10
Representation of options' risk profile
Source: BERTINETTI, Finanza Aziendale Internazionale, 2006

Figure n.10 is the representation of the options' risk profile. In the higher part of the image is represented the position of the seller of the options, or writer, thus who is making a profit from the price, or premium, of the option. The seller of this kind of options are usually international banks. On the top left side it is represented the risk profile of the seller of a CALL option, on the top right the risk profile of the seller of a PUT option.

In the lower part of the image, it is represented the risk profile of the buyer of an option, usually a company that has to buy or sell foreign currency for their transactions. The buyer of an option will initially suffer a loss that is equivalent to the price, or premium, of that option. On the bottom left side, it is represented the risk profile of the buyer of a CALL option, on the bottom right side the risk profile of the

buyer of a PUT option. The position of buying a CALL denominated in foreign currency is the same position of selling a PUT option denominated in domestic currency. If someone is buying foreign currency, at the same time is selling the domestic one, because the option contract is an exchange of currencies.

In order to better understand how an option works, let us make an example. Let us suppose the situation of a CALL Long option, so the situation in which a company is buying an option that gives him the right to buy a determined amount of foreign exchange at maturity. If the foreign currency appreciates, the result is that the SPOT price (the cost of buying that currency at present) at maturity is higher than the STRIKE price (price the company has to pay in order to exercise the option). In that case, the company can immediately exercise the option according to the previously agreed strike price and eventually resell the amount of money in order to gain a higher profit.

If the foreign currency depreciates, the result is that the SPOT price at maturity is lower than the STRIKE. In this case, the company can decide not to exercise the option, because it is more convenient to buy the same amount of currency at a lower price in the market. The option will thus expire without being exercised. The only cost the company will suffer is equal to the cost of buying that option.

Respect to the forward contract, the owner is protected by the downside risk and he is free to benefit of the upside risk. This advantage of course come at a price, that is the abovementioned Premium.

The process of hedging is the same of the one with FWD contracts; compare the business risk profile with the option risk profile.

Like the previous example, an importer that agreed to pay a given amount of foreign currency at maturity and want to hedge the risks deriving from the transaction exposure needs to buy a CALL option, also defined as the importer goes Long on CALL option. Using this financial contract, he fixes today the maximum price he will pay in order to buy the foreign currency that he will use in the future to pay the import transaction. In this situation, if the foreign currency appreciate, the importer exercise the option, otherwise he will let the option expire. The strike price is the maximum cost that the importer will suffer, because in case of foreign currency depreciation, he will buy the foreign currency on the market at a lower price, this way reducing the cost of the import and increasing the profit of the deal.

The opposite situation is the exporter's situation. An exporter that agreed to sell foreign currency, deriving from its export transaction needs to buy a PUT option, also said he is going Long on a PUT option. If the foreign currency appreciate, so the quotation of the spot price at maturity is higher than the strike price, the exporter will not exercise the option, because is better for him to sell the foreign currency on the spot market. The premium he has paid is its maximum loss on the option position that reach the maturity without being exercised. If the foreign exchange depreciate, so the spot quotation of the foreign currency at maturity is lower than the strike, the exporter will decide to exercise the option and start making profit, first compensating part of the premium he has paid. The profit of the exporter comes from the difference between the spot price and the strike price, minus the premium of the option.

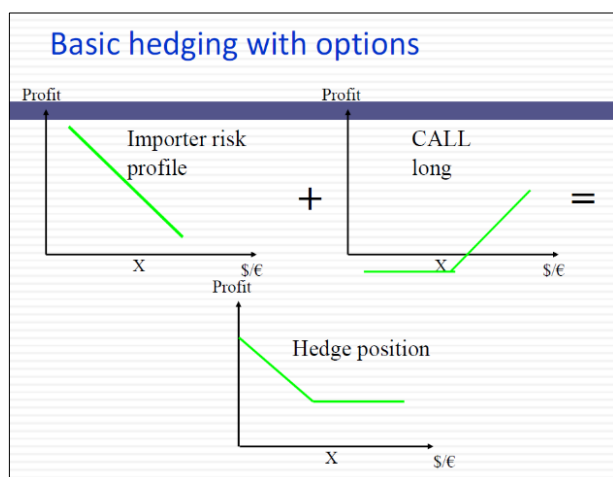


Figure n.11
Basic hedging of an importer's business risk profile with options.
Source: BERTINETTI, Finanza Aziendale Internazionale, 2006

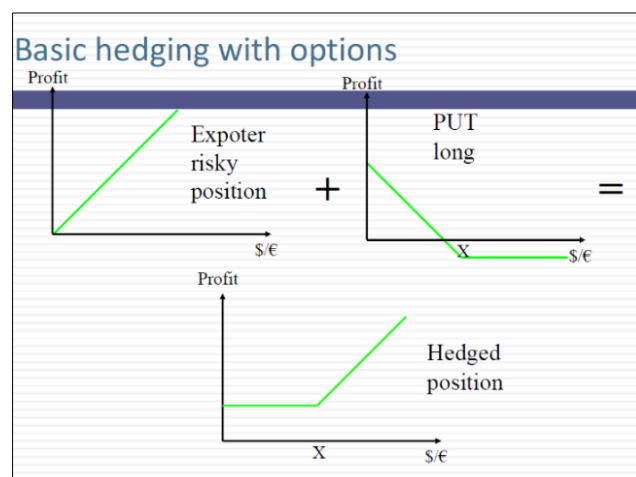


Figure n.12
Basic hedging of an exporter's business risk profile with options.
Source: BERTINETTI, Finanza Aziendale Internazionale, 2006

On the other side of the option contract there usually is a bank. The bank position is obviously going Short on the option contract. His profit depends on the option position at maturity, so depends on whether his counterpart will exercise the option or not. If the counterpart will let the option expire without exercising it, the bank's profit will be equal to the price of the premium. But if the counterpart will exercise the option, the premium will be rode by the difference between the spot

quotation and the strike price. If this difference is bigger than the premium of the option, the entity going short on option will suffer a loss.

The intrinsic value of an option is thus the difference between spot and strike prices at maturity. At maturity, the value of the option is zero if the spot is lower than the strike quotation, because the option will not be exercised. Instead, the value of the option is positive if the spot is higher than the strike quotation. Therefore, at maturity, a CALL (PUT) option with the spot price higher than the strike price (strike price higher than the spot price) expires in-the-money and it will be exercised. If the spot price is equal to the strike price the option is at-the-money. If the spot price is lower than the strike price (strike price lower than the spot price), the CALL (PUT) option expires out-of-the-money and will not be exercised.

The higher is the volatility of the foreign currency, the higher is the probability that an option out-the-money will become at maturity an option in-the-money. The options with an in-the-money position, have the more expensive premium. Hedging such a position is thus expensive. Options with out-the-money positions are cheaper to obtain, so if the foreign currency is in a situation of high volatility a smart strategy could be to purchase an out-of-the-money option, always keeping in mind the minimum price of the currency, and expect it to become an in-the-money options.

4.2.1.3 HEDGING WITH FUTURES

FWD contracts are traded in the OTC (over the counter) market, and this means that they are not listed in the official market but negotiated privately between two counterparts one of which is usually an international bank.

Similar contracts are negotiated in the official markets and they are called Futures contracts. They are standardized forward contracts, each of which has a fixed amount of foreign currency. A company can decide to buy a certain number of this contracts, based on the amount of foreign currency it needs. The maturity of this kind of contracts is also standardized; the issuer provides four fixed maturity during the period of a year and the buyer of this contracts has to choose between one of them, he is not free to decide the maturity that better suits its needs.

It emerges that this is not a perfect hedging solution. The amount of cash a company is willing to hedge would never be exactly the same amount of the one in the futures contract, as well as the maturity that the futures contract provides will not

always be the optimal maturity for a company. Therefore, when working with futures a company has to consider that part of its risk exposure could not be hedged.

So why a company should decide to hedge its transaction risk with futures?

The advantages resulting from the use of futures contract are the same deriving from the use of an official market. This kind of forward product are listed in the market and there is a daily market price, which is evident and quoted by the providers of information like the financial newspaper. As an official quotation exists, it is possible and easier to enter in a secondary market, where is possible for the owner of this contract to resell the futures in every moment. This is not possible with an over-the-counter product like Forward contracts. Using futures, the owner can provide a dynamic of the management of his hedging solution, which is a different and more active way of hedging, not only buying a contract and waiting for maturity.

Another advantages of working with an official market is that the owner of the futures contract does not have the counterpart risk; an official market gives the owner more assurance that his counterpart will be solvent. If the owner of the contract has purchased it in the over-the-counter market, there would be higher possibility of the counterpart's insolvency. However, this was more frequent in the past, when the law did not regulate this kind of contract and, under many legislations, they were considered a sort of bet.

Official markets are organized with a central clearinghouse and everybody negotiate with it. Counterpart are not directly in touch with each other but those who want to buy or sell a future place the order to the clearinghouse and it will match itself buyer and seller. The clearinghouse obliges the owner of a futures contract to have a deposit (inside the clearinghouse) that he will use to pay or cash the futures. If the deposit reduces under a certain limit stated by the clearinghouse, the owner has to put money in this account, and if he does not do that, the future contract will be immediately solved by the market. This is a sort of warranty in order to avoid any risk of insolvency.

Quite the same situation exists for the market of options. A company can find both options traded on the over-the-counter market and options listed in official markets. The official market's situation is the same that the one of futures contracts. Also in this market, options have fixed maturity every 3 months, a standardized contract and the presence of a secondary market.

In summary, when a company trades cross-border, is exposing its business to the foreign currency exchange risk, also called Transaction exposure. Therefore, the profit of a company's import or export will change depending on the dynamic and the changes of the exchange rate. It is possible to hedge the company's business risk position working with some financial products, that expose the company to the opposite risk profile, the one of the hedging instrument. If the company is a long position determined by his its business, it can go short when using financial products. On the contrary, if the company is in a short position determined by its company business, it can go long in using financial products. In this way the company will be able to offset the Transaction Risk. Working with symmetrical products like FWD contract or Futures is easier and cheaper, but this kind of products offset both the downside (profit lower than expected) and the upside risk (profit higher than expected) of a transaction. Asymmetrical products like options are more risky and more expensive but the company could also benefit of the upside risk.

4.2.1.4 PRACTICAL EXAMPLE OF HOW HEDGING PRODUCTS WORK

Let us now make a practical example about the functioning of hedging products. In this particular business situation, the Boeing corporation exported a Boeing 737 to British airways and billed £10 million payable in 1 year. The money market interest rates and foreign exchange rates are given as:

US interest rate	6.10% x autumn
UK interest rate	9.00% x autumn
SPOT exchange rate	\$1.50/£
FWD exchange rate	\$1.46/£ (1 year maturity)

HEDGING WITH FORWARD MARKET, an example.

The Boeing corporation may simply sell FWD its pounds receivables, £10 million for delivery in 1 year, in exchange for a given amount of US dollars. On the maturity date of the contract, Boeing will have to deliver £10 million to the bank, which is the counter party of the contract and in return take delivery of \$14.6 million

(\$1.46x10 million) regardless of the spot exchange rate that may prevail on the maturity date.

Boeing will use the £10 million that is going to receive from British Airways to fulfil the FWD contract. Since Boeing's pound receivables is exactly offset by the pound payable (Created by the FWD contract), the company's net pound exposure becomes zero. Since Boeing is assured of receiving a given dollar amount \$14.6 million, from the counter-party of the FWD contract, the dollar proceeds from this British sale will not be affected at all by future changes in exchange rate. Once Boeing enters into the forward contract, exchange rate uncertainty becomes irrelevant. In this case, the risk deriving from the Transaction exposure is fully hedged.

Suppose that on the maturity date of the FWD contract, the spot rate turns out to be \$1.40/£, which is less than the stated forward rate of \$1.46/£. In this case, Boeing would have received \$14.0 million, rather than \$14.6 million. Boeing thus earned \$0.6 million thanks to the forward hedging. However, if the spot rate will be \$1.50/£ on the maturity date, then Boeing could have received \$15.0 million by remaining unhedged. In this case, Boeing forgoes an opportunity to benefit from a stronger pound.

HEDGING WITH OPTIONS, an example.

Let us assume that the spot exchange rate turns out to be \$1.60 per pound at the maturity date of the FWD contract. The previously presented FWD contract hedging would cost the firm \$1.4 million in terms of forgone dollar receipts. If Boeing had indeed entered into a FWD contract, it would regret its decision to do so. With its pound receivable, Boeing ideally would like to protect itself only if the currency options provide such a flexible "optional" hedge against exchange exposure. The firm may buy a foreign currency call (put) option to hedge its foreign currency payables (receivables).

To show how the options hedge works, suppose in the over-the-counter market Boeing purchased a put option on 10 million British pounds with an exercise price of \$1.46 and a 1-year expiration. Assume that the option premium (price) was \$0.02 x pound. Boeing paid \$200,000 (= \$0.02 x 10 million) for the option.

This transaction provides Boeing with the right, but not the obligation, to sell up to £10 million for \$1.46/£, regardless of the future spot rate. Now let us assume

that the spot exchange rate turns out to be \$1.30 on the expiration date. Since Boeing has the right to sell each pound for \$1.46, it will certainly exercise its put option on the pound and convert £10 million into \$14.6 million.

The main advantage of options hedging is that the firm can decide whether to exercise the option based on the realized spot exchange rate on the expiration date. Recall that Boeing paid \$200,000 up front for the option. Considering the time value of money, this upfront cost is at maturity \$212,000 ($=\$200,000 \times 1.061$). This means that under the options hedge, the net dollar proceeds from the British sale become \$14,387,800 ($\$14,600,000 - \$212,200$).

Since Boeing is going to exercise its put option on the pound whenever the future spot exchange rate falls below the exercise rate of \$1.46, it's assured of a "minimum" dollar receipt of \$14,387,800 from the British sale.

Let us assume now that the spot rate turns out to be \$1.60 per pound on the expiration date.

In this event, Boeing would have no incentive to exercise the option. It will rather let the option expire and convert £10 million into \$16 million at the spot rate. Subtracting \$212,200 for the option cost, the net dollar proceeds will become \$15,787,800 under the option hedge.

The options hedge allows the firm to limit the downside risk while preserving the upside potential. The firm has to pay for this flexibility in terms of the option premium. There rarely exist free lunches in finance.

4.2.1.5 HEDGING TRANSACTION EXPOSURE'S RISK IN CHINA

The first thing to keep in mind when managing the transaction exposure in China is that, currently, the RMB is still in a managed float exchange rate system. This kind of stabilization policies reduces the risks connected with the changes in exchange rate substantially. When China will let the RMB freely float according to supply and demand forces, the risk exposure connected with the Chinese currency will increase significantly. However, since the Chinese government is still primarily responsible for the determination of the exchange rate, and since the RMB is still subject to frequent managed fluctuations and redefinitions of its fluctuation band, the transaction risk exposure connected with its exchange rate is still considerable, specially during this transitional phase.

The Chinese Yuan, is not deliverable and cannot be traded outside China. These kind of currencies are outside the market for forward exchange. Non-deliverable forward markets exist and they are mainly developed for emerging markets in Asia with capital controls, where the currencies cannot be delivered offshore. Some products exist in these markets, non-deliverable forward is one of them, and it is a quite popular product in Asian market. It facilitates offshore participants to effectively hedge against foreign exchange risk on those Asian countries. Today, however, is also possible to get some FWD contract on non-deliverable currencies, fixing the price and paying it in a foreign currency. Companies can buy or sell forward non-deliverable currencies, but it is not possible for the company to have that currency outside that country. At maturity of FWD contract, the company will get an amount of domestic currency equal to the quotation of the non-deliverable currency.

The RMB is not freely convertible, but, as already said, it is subject to foreign exchange controls. Until recently, Chinese controls on capitals made really difficult for financial institution to offer hedging instruments to their clients.⁹⁷ The main cause is the lack of liquidity that characterize the offshore RMB market, which is non-tradable. It is clear that without a RMB market outside China is challenging for institutions to create financial instruments based on the buying and selling of the RMB. The introduction of the offshore Renminbi (CNH) was a major step towards the internationalisation of the Chinese currency, and is in a good path to becoming one of the world's reserve currencies. There has been strong and steady growth in the CNH market towards the internationalisation process.

Thanks to the latest financial reforms implemented in the Shanghai Free Trade Zone in 2014, creating those kind of financial instruments has become easier. On 28 February 2014 the State Administration of Foreign Exchange (SAFE) announced that the Free Trade Zone of Shanghai will permit the RMB convertibility and unrestricted foreign currency exchange for the companies in that area. This reform was designed as a means to simplify the process of foreign direct investment (FDI) and facilitate the management of capital accounts for foreign companies.⁹⁸ Under the new SAFE's

⁹⁷ ELSINGA Steven (2015) , *Hedging against RMB volatility in China*, China Briefing, October 8.

⁹⁸(Shanghai) Pilot Free Trade Zone's website

https://archive.is/20140624020122/http://www.shftz.gov.cn/WebViewPublic/item_page.aspx?newsid=635215802017535000&coltype=8 .

guidelines, Foreign Invested Enterprises registered in the Free Trade Zone are now enabled to make foreign exchange capital account settlements as they deems appropriate.⁹⁹ Foreign Invested Enterprises in the Free Trade Zone are also allowed to open RMB special deposit accounts, created for holding RMB funds obtained from foreign exchange settlements, which may then be used to make payments for real transactions. However, restrictions still apply for using RMB funds for certain types of transactions. *“This measure significantly simplifies the settlement procedure and increases the efficiency of investing and trading activities, as well as enables FIEs in the FTZ to better manage and avoid foreign exchange risks.”*¹⁰⁰

These reforms also led to a wider use of the offshore RMB in China and, at the same time, as the creation of more and more clearing center increased, the RMB offshore market has expanded substantially in size. According to the journalist Steven Elsinga, the combination of these two trends has led to a rapid development in RMB-denominated financial products, including hedge instruments. Banks in Hong Kong, Singapore and Taiwan have grown into the prime vendors of these financial instruments.¹⁰¹

An example is the HKEX Group, a leading financial market operator in the world. They provide world-class facilities for trading and clearing securities and derivatives in Equities, Commodities, Fixed Income and Currency. They offer a vertically integrated solution in all of their markets, acting as the clearing house and settlement system for on-exchange and certain over-the-counter transactions. What RMB currency products are offered by HKEX? According to HKEX’s official website, they *“offer a diversified suite of RMB currency products contracts based on the exchange rates between RMB and other currencies. Their first RMB currency futures, USD/CNH futures, was launched in September 2012, as the world’s first deliverable RMB currency futures product. HKEX also offers cash-settled RMB currency futures – EUR/CNH futures, JPY/CNH futures, AUD/CNH futures and CNH/USD futures contracts. Complementary to the family of RMB currency futures, HKEX launched RMB currency options – USD/CNH options in March 2017. The RMB currency*

⁹⁹ Foreign Exchange FDI Regulations Loosened in the Shanghai FTZ, China Briefing, March 7, 2014.

¹⁰⁰ Foreign Exchange FDI Regulations Loosened in the Shanghai FTZ, China Briefing, March 7, 2014.

¹⁰¹ ELSINGA (2015).

products are financial instruments for managing RMB exchange rate risk exposure."¹⁰²

HKEX launched the USD/CNH futures in September 2012, the world's first deliverable RMB currency futures product to be quoted, margined, and settled in RMB, to provide greater capital efficiency and flexibility for managing exposure to the expanding offshore RMB market. HKEX's RMB currency options and futures together allow investors to display hedging strategies under various market conditions. Any individual or institutions that needs to manage foreign exchange risk exposure associated with RMB can use HKEX's RMB currency products, both futures and options. The potential users of RMB currency products includes banks, companies with RMB related trading business, fund managers and also individual investors who want to gain or manage RMB exposures. Unlike CNH deliverable forwards, which are traded in the over-the-counter market facing a bilateral counterparty, HKEX's RMB currency futures contracts are standardised contracts traded in a central exchange market, with HKEX's acting like the clearing centre.

This is just one of the many examples of providers of these new hedging financial products available for hedging the transaction exposure related to the Chinese currency. This is only the beginning of a larger process of the RMB's internationalization, and will result into the expansion of the Chinese financial market and the related products. However, nowadays this kind of hedging product are accessible and available only for big companies and Multinational companies (MNCs); small domestic companies are still limited in this field.

4.2.2 ECONOMIC EXPOSURE

The Economic Exposure is the kind of exposure that applies to the unexpected fluctuation of the exchange rate and their impact on the company's future cash flows, foreign investments and earnings, affecting the company's market value in the medium/long-term management. Compared to the Transaction one, Economic Exposure is more difficult to measure and hence more challenging to hedge.

The Economic Exposure's risks are more related to the ones emerging from a deviation from the purchase parity power (PPP), therefore the real fluctuations of the

¹⁰² [https://www.hkex.com.hk/-/media/HKEX-Market/Products/Listed-Derivatives/Foreign-Exchange/Publications/cnhfaqe-\(May-2018\).pdf](https://www.hkex.com.hk/-/media/HKEX-Market/Products/Listed-Derivatives/Foreign-Exchange/Publications/cnhfaqe-(May-2018).pdf)

exchange rate are relevant, not the nominal ones. For companies as well as for investors, having a solid understanding of the forces driving exchange rate changes is fundamental, because these changes would affect their investment and financing opportunities.¹⁰³ There are several key international parity relationships. Interest rate parity (IRP) and purchasing power parity (PPP), both have implications for international financial management and are manifestations of the “law of one price”¹⁰⁴ that must hold in arbitrage equilibrium. The market is considered to be “in equilibrium” when there are no profitable arbitrage opportunities. The term “arbitrage” can be defined as “*the act of simultaneously buying and selling the same or equivalent assets or commodities for the purpose of making certain, guaranteed profits.*”¹⁰⁵

Let us now analyze these two international parity relationship in order to better understand when the market is in equilibrium, so there are no deviation from these relationship and thus no risks, and when is not, therefore there can emerge risks (but also arbitrage opportunities) related to the economic exposure.

4.2.2.1 INTEREST RATE PARITY (IRP)

IRP is an arbitrage condition that must hold when international financial markets are in equilibrium. It says that there is a relation between Spot and Forward exchange rate due to the difference in interest rate between currencies. Looking at the direct quotation, the difference between the Spot over the Forward has a percentage that is the Premium or Discount Forward, and is equal to the ratio between the difference between domestic interest rate and the foreign one, divided 1, plus foreign interest rate; this is also called Direct Quotation. The Indirect Quotation instead is equal to the foreign currency interest rate minus the domestic one, divided 1, plus the domestic interest rate. The premium or the discount FWD is nothing else that the present Value of the difference between the domestic interest rate and the foreign interest rate.

$$\text{Direct quotation: } \frac{(E_{\text{Fwd}} - E_{\text{Spot}})}{E_{\text{Spot}}} = \frac{(i_{\text{dom}} - i_{\text{for}})}{(1 + i_{\text{for}})}$$

$$\text{Indirect quotation: } \frac{(E_{\text{Fwd}} - E_{\text{Spot}})}{E_{\text{Spot}}} = \frac{(i_{\text{for}} - i_{\text{dom}})}{(1 + i_{\text{dom}})}$$

¹⁰³ EUN, RESNICK (2018). Chapter 6, page 140.

¹⁰⁴ According to Eun and Resnick, “*the law of one price prevails when the same or equivalent things are trading at the same price across different locations or markets, precluding profitable arbitrage opportunities.*” EUN, RESNICK (2018).

¹⁰⁵ EUN, RESNICK (2018). Chapter 6, page 140.

Let us suppose that we are working on a one-year maturity. The interest rate of the domestic currency is 1%, while the interest rate of the foreign currency is 3%. There is a 2% difference between the foreign and the domestic interest rate. This means that the FWD quotation will be a 2% (present value) different from the Spot one. Will the quotation be at a Premium or at Discount? The currency with the higher interest rate will call for a discount FWD. This is just a non-arbitration condition. That is why, the FWD rate is not a predictor of future Spot rate, it is just the result of a mathematical equilibrium due to the IRP. This is considered a non-arbitrage condition, because if such a condition is not respected is possible for everybody to take an arbitrage opportunity, which means to make a profit without any risk just borrowing in one currency, change the currency in the other one, investing in the second currency and in the meantime sell money FWD in foreign currency.

This parity is usually respected. The last time that was not respected was in September 1992 for three-four days. Those days were called the currency storm, when the European countries start quoting their currencies freely.

Let us now make an example of arbitrage.

Giving the market conditions:

- Int. Rate USD	2%
- Int. Rate Euro	4,5%
- Spot €/US\$	1,1170
- Spot US\$/€	0,8953
- Maturity	12 month (1 year)
- FWD €/US\$	1,0903
- FWD US\$/€	0,9172

Suppose that a company debt today (so it borrows today) in euro 956,94€. Why does the company chooses this amount? Because given the interest rate on euro, that is 4,50%, what the company has to pay back in one year to the bank will be: $956,94 + \text{interest rate } 4,50\% = \text{exactly } 1000\text{€}$.

The company then translates this amount of euro (956,94€) in USD at the SPOT quotation ($956,94 \times 1,1170$) and it immediately gets 1.068,90\$.

What the company can do now is to invest these dollars in order to get the interest rate on the USD (2%). In doing so, the company will get in one year 1090,28\$, result of its investment today of 1068,90\$ + the interest rate of 2%.

What the company has to pay back to the bank at maturity is 1000€.

The FWD price has to be the ratio between these two amounts of money, 1000€ and 1090,28\$ ($1000\text{€}/1090,28\$=0,9172$), which is exactly the FWD quotation estimated here.

In this case the IRP is respected and the market is in equilibrium.

If the FWD quotation were different from the estimated one, it would be possible for the company to make a profit (or to suffer a loss) from this arbitrage opportunity.

The company could borrow in Euro, translate it in USD and then invest the USD. This way the company knows exactly the amount of USD it will get next year and it thus can immediately (as it invests in USD) sell FWD this amount of dollars.

If the price FWD were different from the estimated one, maybe that the company is in the position to make profit or suffer a loss depending on the FWD quotation. The difference between 1090,28\$ (the money I will get in one year) and 1000€ (the money I have to pay back to the bank), if positive, is the company's profit, earned without any risk.

If an arbitrage opportunity appears, everyone involved in the market will start (using the previous example) to buy euro, translate them in USD, invest in USD and finally selling the USD forward.

When implementing this process, the causes will be a huge offer of euro and a huge demand of USD. The spot quotation will start moving as long as with interest rate quotation (because there will be a lot of debt in euro and a lot of investments in USD). The interest rate of USD would fall down and the interest rate of euro would increase till the arbitrage opportunity will disappear, until it will not be possible to make any profit from this kind of operations.

This is the origin of interest rate parity, which is a law of equilibrium on the international market that puts in a strong relation interest rates and currency quotations. That is why this is not a problem of expectation of the future dynamic of exchange rate; it is just a problem of the cost of money on different markets.

Let us now analyse an example in which appears an opportunity of arbitrage.

Suppose there is a difference in interest rate between the foreign one and the domestic one as big as 5,5%. The difference incorporated in forward rate is only 5% (instead of 5,5%), this means that this is an example where the interest rate parity is not respected.

The domestic interest rate is 7,5%.

The foreign interest rate is 2%.

Suppose that the USD on Euro quotation is 1,5000 so the same Forward quotation in 12 months is 1,5735.

Here is the arbitrage:

What the company can do is:

- Buy forward 1000 USD, that will be 1573,53 € at maturity.
- Debt a certain amount of USD (980,39\$) that is the present amount of USD (1000\$) divided the USD interest rate (2%). This is because at maturity the company will pay exactly 1000 USD.
- Immediately convert USD into Euro on the Spot quotation of 1,5. ($980,39 \times 1,5 = 1470,58$)
- Invest the Euro 12 month at 7,5% interest rate on the Euro, therefore the company is sure it will get 1580,88€ at maturity. ($1470,58 \times 1,075$)

In this situation the company will have a profit of 7,35€ which is the difference between the amount of euro I bought forward (1573,53€) and the amount of euro that I will get at maturity(1580,88€).

4.2.2.2 PURCHASING PARITY POWER (PPP)

When the “law of one price” is applied internationally to a standard consumption basket, emerge the theory of PPP, which states: “*the exchange rate between currencies of two countries should be equal to the ratio of the countries’ price levels*”.¹⁰⁶ The Purchasing Parity Power requires that the price of standard consumption basket be the same across countries when measured in a common currency.

As Eun and Resnick report, “*whether the PPP holds or not has important implications for international trade. If PPP holds and thus the differential inflation rates between countries are exactly offset by exchange rate changes, countries’ competitive positions in world export markets will not be systematically affected by exchange rate changes. However, if there are deviations from PPP, changes in nominal exchange rates cause changes in the real exchange rates, affecting the international competitive positions of countries. This, in turn, would affect countries’ trade balance.*”¹⁰⁷ When speaking about any fluctuation in prices in the financial market, there are nominal fluctuations and real fluctuations. The nominal fluctuation is the one perceived looking at the changes in prices (e.g. the Spot price today is different from the spot price yesterday). In order to move from the nominal to the real fluctuation, it has to be considered the inflation rate of the two countries (difference between the domestic and the foreign inflation). Instead, the real fluctuation is the

¹⁰⁶ EUN, RESNICK (2018). Chapter 6, page 149.

¹⁰⁷ EUN, RESNICK (2018). Chapter 6, page 151.

dynamic of the exchange rate that is bigger or lower than the difference in the inflation rate between two countries. If the PPP is not respected, there are real exchange changes in the price of one currency. If the PPP is respected, there are no real exchange changes in the exchange rate but may be that there are some nominal fluctuations. Because the nominal fluctuation is exactly offset by the difference in the inflation existing in the two countries, the PPP is not affected by the nominal fluctuation in this situation. What will happen is that there are no nominal fluctuation, and thus the exchange rate stay fixed at the same level, but there are real fluctuation if the inflation rate in the two countries is not the same.

The real exchange rate (q) measures the deviation from the Purchasing Parity Power and can be defined:

$$q = \frac{1 + \pi_{\$}}{(1 + e)(1 + \pi_{\pounds})} \quad \rightarrow \text{if PPP holds } (1 + e) = (1 + \pi_{\$}) (1 + \pi_{\pounds}), \text{ so real exchange rate will be equal to unity, } q=1.$$

\rightarrow if PPP is violated: real exchange rate will deviate from unity.

Where e is the rate of change in the exchange rate and $\pi_{\$}$ and π_{\pounds} are the inflation rates in the U.S. and the U.K., respectively.

To summarize, if the real exchange rate is equal to one, the competitiveness of the domestic country (in this case the US\$) remain unaltered; if the real exchange rate is smaller than unity, the competitiveness of the domestic country increase; if the real exchange rate is bigger than unity, the competitiveness of the domestic countries decreases.

The real effective exchange rate is a weighted average of bilateral real exchange rate, with the weight for each foreign currency determined by the country's share in the domestic country's international trade. The real effective exchange rate increases if domestic inflation is higher than the inflation abroad and the nominal exchange rate do not depreciate to compensate for the higher domestic inflation rate. Thus, if the real effective exchange rate rises (falls), the domestic country's competitiveness decreases (increases).¹⁰⁸

$$(E_{t1} - E_{t0}) / E_{t0} = (\text{Infl. dom} - \text{Infl. for}) / (1 + \text{Infl. for})$$

¹⁰⁸ EUN, RESNICK (2018). Chapter 6, page 151.

The previous one is the formula to express the Purchasing Parity Power relation. In the first part of the formula is reported the movement of the spot rate percentage, also expressed as the Spot rate at t1 (time one) minus the spot rate today, divided the spot rate today. The movement of the spot rate percentage must be equal to the difference between the domestic Inflation minus the foreign Inflation, divided 1 plus the foreign Inflation (a sort of present value of the difference of the inflation between two countries). The spot exchange rate tends to offset any change in the differential rate of inflation between two countries. The spot exchange rate should provide a compensation in order to let the purchasing power of each currency stay at the same level. In a country with high inflation, the price of the domestic currency should devalue. The Spot exchange price should be close to the ratio between the domestic inflation and the foreign inflation. Inflation is an increasing price, if the price increase because of inflation the domestic products loose competitiveness respect the foreign one, because they became more expensive. In order to offset this situation, the quotation of the currency of the country with the higher inflation should devalue. This way the price of domestic products in foreign currency reduces and the domestic products stay with the same level of competitive power they had previously.

Example:

A company produces pens and its competitor produces the same product in the US. The price today is 1€, the price in USD should be, given the spot price, 1,18\$. For any consumer of pen, it is indifferent to buy in Europe or in the US.

However, if there is no inflation in Europe, and a 5% inflation in the US, the problem arising is that the cost of production of the pen in the US increase 5% due to inflation. In order to keep the profitability of the business the US producer should increase the selling price of 5%. If he increase the price, the cost of the US producer became higher than the European one. Everybody will prefer to buy the European pens.

If the US quotation do not devalue of 5%, it will be true that everybody pay a price for the US pen that is 5% higher than it was before. Due to the devaluation of the USD, the price of the pen is exactly the same that it was the past year and the two producers are still competitive.

As Eun and Resnick report, "*whether the PPP holds in reality is a question of considerable importance. In view of the fact that PPP is the manifestation of the law of one price applied to a standard commodity basket, it will hold only if the prices of*

constituent commodities are equalized across countries in a given currency and if the composition of the consumption basket is the same across countries.”¹⁰⁹

Each country is specialized in specific businesses and not all the products are produced in every country (e.g. oil). Therefore, the arbitrage is not possible for every product. In a country that do not produce a certain product, even if the price of the local currency is undervalued, if someone want to buy that product he has to buy it abroad. If the price of the product increases, the number of import related to it will eventually decrease but will never disappear because there is not a domestic alternative product. It is quite impossible for the demand to provide immediately any arbitrage thanks to the deviation from the PPP. Moreover, it is not easy to move a company from a country where the currency is overvalued to another where the currency is undervalued. It is easier to provide an arbitrage in the financial market rather than in the retail one, because it is easy to move money among countries.

4.2.2.3 STRATEGIES FOR OFFSETTING ECONOMIC EXPOSURE

According to the economist Yuqin Feng, economic exposure might be the hardest risk exposure to hedge for companies, because it is affected by multiple macroeconomic factors and needs more methods than only the financial ones in order to reduce the relative risks.¹¹⁰ It is important to notice that the degree of economic exposure is directly proportional to currency volatility. Economic exposure increases along with the growth of the foreign exchange volatility, and decrease along with the fall of the foreign exchange volatility.

The problem for the economic exposure is the impact of changes of the competing power in domestic companies respect to the foreign one. If the company loses its competitive power, it will be difficult for it to cash the future cash flows forecasted in the business plan. If a company has to offset the competitive power changes' risks, hedging products alone are not enough. *“Economic Exposure can be mitigated through either operational strategies or currency risk mitigation strategies”.*¹¹¹

¹⁰⁹ EUN, RESNIK (2018). Chapter 6, page 151.

¹¹⁰ FENG Yuqing (2013), Currency Risk Management of Finnish Enterprises in China, VAASAN AMMATTIKORKEAKOULU University of Applied Sciences.

¹¹¹ KENTON Will, Economic Exposure, Investopedia. <https://www.investopedia.com/terms/e/economicexposure.asp>

Speaking of operational strategies, when the company discovers that it can be exposed to the economic risks, it has to modify its strategies thinking of the medium/long-term. Therefore, according to the Professor Gordon Bodnar:

*“depending on its perception about the persistence of the real exchange rate change, the firm may want to make changes in its operating strategy. To do this a firm needs to have existing flexibility that allows it some freedom to alter its operations in response to the exchange rate change. If this flexibility, or alternatively real operating options, does not exist, the firm may need temporary cash flow protection while the flexibility is installed or full cash flow insurance to simply ride out the adverse exchange rate fluctuation. This operating flexibility or operating options can be thought of as real hedges that the firm takes out to protect itself from real exchange rate fluctuations. The temporary protection or cash flow insurance will generally be obtained using financial instruments. Thus both real operational and financial hedging strategies are important for the management of a firm's operating exposure to exchange rates.”*¹¹²

Since the Economic exposure, by definition, has impact on the company's operational strategies, the first thing a company should do is to reconsider its strategic view. A company, ideally, should redesign its operations, marketing, production or sourcing in order to respond to the changes in the real exchange rates that would modify its competitive power so that it could benefit from a hypothetical improved competitive position and/or minimise the damage of a hypothetical worsening of its competitive position. According to Bodnar, *“these may be either ex ante actions that provide the firm an operating option, or marginal changes in activity intensity that try to mitigate the adverse impact of exchange rate fluctuations on firm value.”*¹¹³

Speaking of Marketing strategies that could help managing the risks deriving from the Economic Exposure, a company can decide to rethink their strategies concerning their markets selection, the pricing policies and their promotional strategy.

A company's Marketing strategy could be the selection of its products destinations, thus the company should make a selection of the market destinations of its products or services. An ideal solution is trying to be present in all countries and

¹¹² BODNAR Gordon (2007), *Techniques for Managing Exchange Rate Exposure*, Wharton University of Pennsylvania, Finance Department.

¹¹³ BODNAR (2007). Page 5.

promote their business in countries with overvalued currencies and reducing the promotion efforts in countries with undervalued currencies. This is of course not easy to actuate, especially for small business, because, for example entering a new market requires extra time and knowledge. Companies could also decide to exit from markets that have become unprofitable due to deviation from the PPP, and at the same time more strongly implement its market share or expand into new markets when the real exchange rate depreciates. *These decisions depend, among other things, on the fixed costs associated with establishing or increasing market share*¹¹⁴. This kind of marketing decision affect the company's medium/long-term management and they are better be designed *ex ante*.

Another Marketing strategy could be the adaptation of a company's pricing policies along with the changes in the real exchange rates. The decision on how to and whether or not to adjust the foreign currency price of their products in response to exchange rate changes, depends on a variety of factors. For example, depends on the window of time the real exchange rate change is expected to exist, *"the extent of economies of scale that occur from maintaining large quantity of production, the cost structure of expanding output, the price elasticity of demand, and the likelihood of attracting competition if high unit profitability is apparent."*¹¹⁵

However, marketing strategies alone could not be sufficient for effectively overcome the Economic Exposure. A company should also consider the production strategies such as diversifying the company's source of input or choosing the plant locations, when designing the strategies to manage the Economic risk exposure.

For example, choosing suppliers from different countries, could give the company the possibility to shift easily from a supplier to another if there are changes in one of the suppliers' country Purchase Parity Power. A good company's strategy is to choose the main supplier from countries with an undervalued currency, in order to reduce the fixed cost of their products and increase their profit margin, but also be flexible and have some "backup" suppliers when necessary. However, Bodnar point out that *"this strategy does not bode well for the concept of good supplier relations, and potential costs associated with constantly switching suppliers' needs to be taken into consideration when evaluating this strategy."*¹¹⁶

¹¹⁴ BODNAR (2007). Page 5.

¹¹⁵ BODNAR (2007). Page 6.

¹¹⁶ BODNAR (2007). Page 6.

Frequently, companies opt for solutions that are something in between of those illustrated above. They could have different plants located in different currency-areas (e.g. USA and Europe), each plant producing the product specifically for that country. Then the company can try to move additional plants from those areas to the other, depending on the dynamic of the exchange rate. When the quotation of (for example) the USD is overvalued respect to the PPP, the company is better produce more in Europe than in the USA. When the quotation of the USD falls down and go back or even under the PPP, the company will produce there, also some product for the European market.

Another solution can be to stay close to the plant of the company's client opening new plants there (e.g. open plants in Mexico for the US client). This is also a way of surviving at the big fluctuations of the PPP and of managing the economic risk exposure. There are no other solution then being flexible, being able to modify the strategies of the company in order to make profit from the existing situation also related to the dynamic of the exchange rates.

To summarize, these operational strategies, made to overcome the risk deriving from the economic exposure, entail investments in the company's flexibility that could produce high profits. Using those kind of strategies could increase the company's value more than pure financial hedging solution could ever done. It is true that they may appear inconvenient from an economic perspective when implemented, but in reality they would pay back by allowing the firm to correct its production, sales, etc. in response to the fluctuations of the real exchange rates. Of course, the company, before implementing any of these strategies, should evaluate whether the expected benefit would exceed the expected cost or not.

A company can also implement some financial hedging strategies with the purpose of limiting the risk of the economic exposure. However, Bodnar suggest that using financial products for hedging economic exposure is to be considered "the second best solution" for a company. He states: "*Financial hedging of operating exposure should start where strategic hedging of exposure ends. Financial hedges contracts are for a fixed quantity and for a fixed time interval. They will soften the blow of a real exchange rate change but they do not alter the new competitive environment facing the firm. Financial hedges should be seen as temporary shelter for the firm from unpleasant change in the competitive environment that allow the firm the*

financial capability for a short time to decide on real economic responses to the new competitive environment.”¹¹⁷

To conclude, the first thing a company should do when approaching changes of the risk deriving from the economic exposure is to rethink and redesign its operational strategies in order to deal with those changes. The Economic Risk Exposure can only be managed by a modified strategic view; financial hedging products alone may contribute little to the overcoming of the risks.

4.2.2.4 MANAGING THE ECONOMIC EXPOSURE IN CHINA

As already been stated, the degree of economic exposure is directly proportional to currency volatility. Economic exposure increases along with the growth of the foreign exchange volatility. China is likely to face a high volatility of its exchange rate, during its process toward the liberalization and free fluctuation of its currency. For China, the “rules of the game” could change drastically at any moment. It is hard to predict when China will officially open up its economy and let its currency freely float, however this is an inevitable step on the Chinese path.

This is a moment in which companies who work or wants to work with the Chinese market has to redesign their strategies in order to face the changes that will occur in the competitiveness of China.

Companies need to keep in mind that the situation of China today is nothing like it was fifteen years ago. China is the first largest economy of the world by gross domestic product based on purchasing power parity, and had one of the fastest growing economy among the major economy of the world, with, according to the World Bank, an average GDP growth rate of 8.20%, from 2013 to 2017.¹¹⁸

This sets the stage for China to be one of the most up-and-coming markets in the world today, despite the uncertainties that it will face in its recent transitional phase.

Analysing the private consumption data, what emerges is that Chinese consumers’ habits are changing and that the population is demanding more goods and services with an increasingly higher quality. According to the National Bureau of

¹¹⁷ BODNAR (2007). Page 14.

¹¹⁸ The World Bank, *GDP growth (annual %)*, World Bank national accounts data and OECD National Accounts data files. https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?year_high_desc=true

Statistic of China, “in the whole year of 2017, the total retail sales of consumer goods reached 36,626.2 billion yuan, up by 10.2 percent year-on-year. Of the total, the retail sales of consumer goods of units above designated size was 16,061.3 billion yuan, increased 8.1 percent.”¹¹⁹ In the whole year of 2017, the retail sales of consumer goods in urban areas increased up by 10.0%, while in rural areas increased up by 11.8%.

These impressive data show the potential of a growing, strong Chinese market where the middle class is the protagonist. Looking at the Chinese Disposable Personal Income’s data, what emerges is an increasing trend, reaching an all-time high of 36396.19 CNY in 2017.¹²⁰

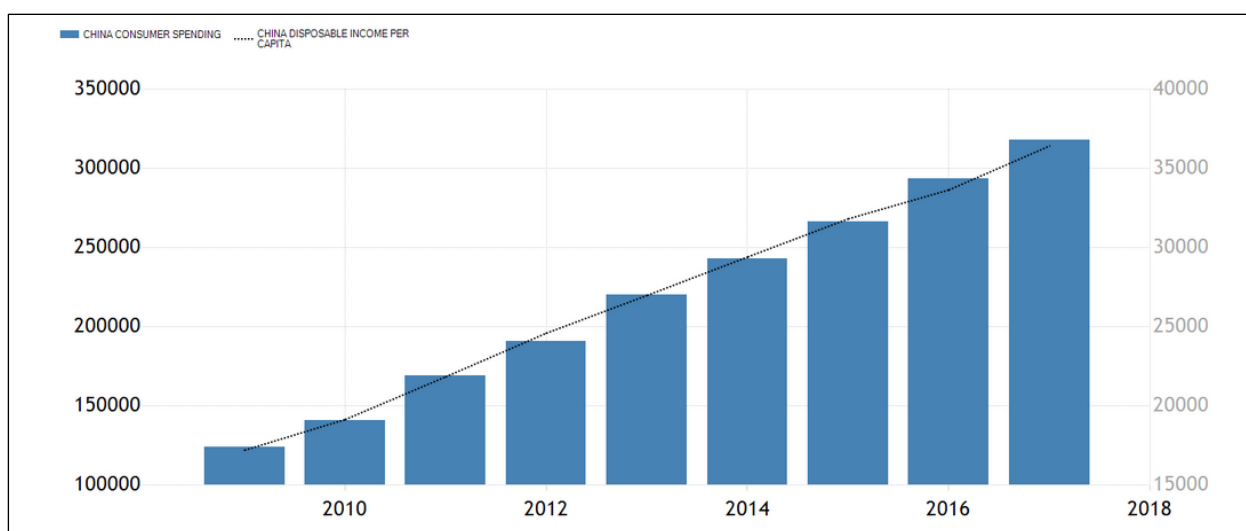


Figure n. 13

China Consumer Spending compared with China Disposable Income per capita.

Source: Trading Economies.com

Note: Consumer Spending’s Unit is CNY HML, Disposable Income per Capita’ unit is CNY.

Things are changing in the Chinese market. Also a research report from the Morgan Stanley Research shows this tendency of increase of the Chinese market. Along with the development of China into a higher income society, private

¹¹⁹ National Bureau of Statistic of China, *Total Retail Sales of Consumer Goods in December 2017*, January 25, 2018. http://www.stats.gov.cn/english/PressRelease/201801/t20180126_1577681.html

¹²⁰ Trading Economies, *China Disposable Income per Capita*, updated on February 2019. <https://tradingeconomics.com/china/disposable-personal-income>

consumption is expected to grow from its current \$4.6 trillion¹²¹ to \$9.7 trillion by 2030.¹²²

So, is this the right time to enter the Chinese market?

It depends on what kind of business the companies that want to reach the Chinese market are willing to run.

The encouraging growth figures suggest that as Chinese consumption rises in many sectors, so will happen for commercial opportunities. Companies that are willing to penetrate the Chinese market with the purpose of reaching its consumers might be hasty with their mode of entry. The Chinese market with his 1,4 billion consumers, interests an increasing number of foreign company. However, before entering China a company needs to analyse and understand all the economic and financial barriers that characterize this unique market. Once the company has evaluated that it is worth entering the Chinese market, it has to think well of what will be the positioning of their products. Speaking of Economic Exposure, a company that is deciding the kind of positioning it want to attribute to its product, has to take into account the yield spread that could be gradually eroded along with the PPP China's condition move toward the market equilibrium. As always, the unknown is the time that it will take for the PPP to move back to an equilibrium situation. Therefore, a company's entry modes should be designed as to be able to sustain the changes in the real exchange rate, which could be even more frequent during this Chinese transitional phase.

If a company wants to enter the Chinese Market merely for the convenience of its low-cost products and low-cost labour force, this may be not a profitable choice for the company because opening plants in China searching for lower costs is likely to become less and less convenient along with China's process towards the free market. The more the Chinese economy will open to the free market, the more the domestic prices will increase, as well as wages and the quality of living and working conditions. A company opening a new plant in China, with the purpose of taking advantages of the level of China's competitiveness, is exposing itself to a dangerous economic risk.

On the other hand, if a company wants to enter the Chinese market as a way of entering the Asian market and in its business the costs are decisive and the time-to-market relevant, China could be an interesting solution. This company could take

¹²¹ The World Bank, *Households and NPISHs Final consumption expenditure (current US\$)*, <https://data.worldbank.org/indicator/NE.CON.PRVT.CD?locations=CN>

¹²² MORGAN STANLEY research (2017), *The Next Decade of China Transformation*, February 15.

advantage of China's temporary high price competitiveness and adjust its strategy along with the changes of competitiveness and at the same time being close to its market destinations and thus cutting the costs of distributions. An example is the technology industry.

A company's purposes for entering Chinese market are various and different. During the company's decisional process on whether to enter this unique market or not, a company should not only consider the profitability of penetrating the market at present conditions, but also consider the effects that this transitional phase of Chinese economy would bring in the future.

This is the right time for companies already working in the Chinese market to adjust their strategies in the light of the future changes of the Chinese economy, in order to limit the possible damages caused by the changes in the RMB risk exposure. This is also the right time for companies already working in the Chinese market to understand whether to stay there or leaving for more convenient destinations.

CONCLUSION

The investigation carried out in this thesis stresses that a moment of transition for China is approaching and will have strong impact on companies' strategical decision. Companies that work, or are willing to work, with the Chinese market must reconsider their strategies in order to cope with the possible shocks caused by this transitional phase.

It is difficult to predict the exact time when China will make the final breakthrough, opening its economy and letting its exchange rate freely float according to market supply and demand forces. However, many factors suggest that the liberalization of the Chinese economy will happen.

China has managed to become the first economy of the world (speaking of gross domestic product based on purchasing power parity), while maintaining tight controls on capital and on the fluctuation of its exchange rate. However, there is a basic inability to maintain managed exchange rate regimes, especially in the face of the impressive trade volume that China have faced compared to the rest of the world. Thanks to this thesis analysis, it has become clear that today's exchange rate regime is unsustainable for the Chinese economy and through the examination of various elements it has been understood the reasons why.

Starting from a historical analysis, it emerged that fixed exchange rate like the one implemented by the Chinese government are doomed to fail. Investigating the dynamics and the collapse of the two major fixed exchange rate system operating since the end of the Second World War, emerges that fixed exchange rate systems are characterized by some intrinsic problems that seems to be at the base of their demise. Deciding to fix the level of one currency's exchange rate, for example using stabilization policies like pegs, is a commitment that might be hard to fulfil in the long term. The reason is that, in the future, some elements could refute the validity of a country's commitment. Maintaining its exchange rate fixed could no longer be the best solution for that country and it would probably decide to adjust the level of the exchange rate and thus breaking its commitment. Economic players are well aware about this credibility issue that characterize the fixed exchange rate systems and their natural reaction will be buying or selling the currencies involved for speculative reasons in the exact moment when they suspect a deviation of a country's commitment. It thus emerges that fixed exchange rate systems are incredibly fragile and not able to adapt to the changes of the market.

Then, looking at the history of China become evident that there has always been a strong authorities' desire to liberalize the RMB exchange rate. In the light of this, a transition to a market based RMB could not be that far. China is in a long and well-reasoned process, which will inevitably end with a free market and a free-floating exchange rate.

However, it is interesting to point out that even if a freely floating exchange rate has always been a long-term goal for China, as stated on a number of occasions by the Chinese government, China has always been cautious about its exchange rate reforms. During the years that goes from the first opening of the Chinese economy in 1978 under the leadership of Deng Xiao Ping to nowadays, China has made remarkable progress on the liberalization of its economy and exchange rate. However, China has simultaneously take as many step backwards, as many are the times when the Chinese authorities feared an economic disruption. A clear example of this attitude is China's decision, in 2005, to exit from the hard peg with the U.S. dollar, adopting a managed floating exchange rate regime based on market supply and demand with reference to a basket of currency, and then come back to a peg to the USD whenever the RMB appreciated or depreciated more than expected. For example, in July 2008, China halted the appreciation of its currency in response to the global economic crisis that caused a declining demand for Chinese products; a peg to the USD was reintroduced to prevent further appreciation of the Renminbi. This is China's modus operandi: every time it proceeds with further liberalization of its exchange rate, if the situation is not coherent with their previsions and could damage or disrupt the economy, they immediately take a step back and narrows their controls. Nevertheless, China's cautiousness could be the reason why it still have a manged exchange rate and tight controls on capital and at the same time, it is one of the strongest economies of the world. We are confronted by an unprecedented situation.

Even if China has been successful in managing its exchange rate most of the time so far, thanks to the further analysis of the problems emerging from the prolonged use of stabilization policies, it has been understood that further liberalization is needed in order to improve Chinese economy. To keep the level of the RMB inside the limits required by the managed float exchange rate regime, China has to repeatedly intervene in the forex market through sterilization processes that in the long run could be challenging to implement. These processes are already damaging China's economy and are causing a financial repression. Real interests rates have been unusually low for a rapidly growing economy like China and this has caused the expansion of the real estate and stock markets, intensifying financial risk. Moreover, sterilization processes entail hidden costs and risk. An example of hidden

costs is the large scale purchasing of U.S. Treasury by the Chinese Central Bank. China is obliged to buy low-return U.S. assets in order to maintain its stabilization policy to the USD and, in doing so, it sacrifice higher- return alternative investment opportunities that could enhance its domestic economy. A market based exchange rate would be more appropriate for China. It would produce a series of long-term benefits, like the increase of its economic efficiency along with the increase of its domestic companies' efficiency and competitiveness, the development and the reinforcement of the domestic financial market and many more, arising from the rebalancing of the economy due to a freely floating exchange rate.

Another significant benefit would be the reduction of the source of tensions between China and its major trading partners, who are putting an increasingly high pressure on Chinese authorities to force them to implement more transparent exchange rate policies and to persuade China to stop its market interventions, believed to be strategical operation intended to gain unfair trade advantages. Even if it has been widely discussed that China cannot be blamed for its moves in the forex market, which are the results of the stabilization policies and not meant to promote its economy development at the expense of other countries, it can no longer ignore this external pressures.

Along with this examinations, emerged that China need to shift the focus of its economic development from export to a domestic consumption model of development. Persisting in pursuing market intervention and keeping the RMB's exchange rate fixed would be counterproductive for a China that want change its model of development, but it is necessary for a China that is still not ready for a freely floating exchange rate. Before opening its economy and let its currency be determined by marker forces, China needs time in order to create a domestic market in which its economic players has a purchasing power large enough to absorb local companies products and in order to let the domestic economy to strengthen.

All the previous elements are sufficient to assume that China is approaching an inevitable change of regime with all the connected effect and problem that it could bring, even if the exact moment when this transformation will happen is hard to estimate.

What is going to happen when China will liberalize its currency? The right answer is it depends on China situation at that time. Was China able to bring the yuan closer to its real value? Has China succeeded in strengthen its service sector and domestic market? Has China relaxed its controls on capitals? The varieties are endless and the results hard to predict. What is certain is that China is going to have a free-floating exchange rate in the future and foreign market has to get ready for this.

Companies approaching the Chinese market have to understand that China's situation and level of competitiveness might change at any moment. They must put extra attention in taking risks associated with the use of RMB that, during this transitional phase, will face an increase in its exchange rate volatility, and thus an increase of the risk connected to it.

Therefore, companies must redesign their strategies taking into consideration two different risk exposure.

The first one is a short term risk exposure connected with the effects that the fluctuation of the exchange rate has on the company's cash flows relative to the existing financial obligations; it is called Transaction Exposure. Companies that has RMB-denominated account receivable or account payable are subjected to transaction exposure. Currently, the RMB is still in a managed float exchange rate system. This kind of stabilization policies reduces the risks connected with the changes in exchange rate substantially. When China will let the RMB freely float according to supply and demand forces, the Transaction risk exposure connected with the Chinese currency will increase significantly. However, since the Chinese government is still primarily responsible for the determination of the exchange rate, and since the RMB is still subject to frequent managed fluctuations and redefinitions of its fluctuation band, the Transaction risk exposure connected with its exchange rate is still considerable.

A way to offset the risks related to this kind of exposure is the use of hedging financial products. The problem with China is that its currency is still not derivable and cannot be traded outside China. However, some non-deliverable forward hedging products exist and facilitates foreign companies to effectively hedge against RMB exchange risk.

Until recently, Chinese control on capitals made really difficult for financial institutions to offer hedging instruments, because of the lack of liquidity in the RMB offshore market. Fortunately, after the economic reforms of 2014, creating those kind of financial instruments has become easier and the forex market have seen a rapid development of RMB-denominated financial hedging products.

The second kind of risk exposure is called Economic Exposure; it applies to the unexpected fluctuation of the exchange rate and their impact on the company's future cash flows, foreign investments and earnings, affecting the company's medium/long-term management. Economic Exposure is difficult to measure and thus more challenging to hedge and the use of hedging products are not enough. In order to mitigate the risks arising

from the Economic Exposure, the company has to implement new strategies and eventually redesign the old ones.

When working with the Chinese market, companies must understand China's competitive advantages and design their strategies in order to exploit them, always keeping in mind the transformation of the economy that China could implement in the near future.

China cannot be considered the core of the global supply chain anymore. Prices as well as wages and Chinese living standard are expected to grow on a regular basis. Companies looking for low cost products and labour force are better shift their focus on other developing countries.

As the forecast about Chinese future growth trends confirms, the future of China is full of commercial opportunities for foreign companies. However, this companies need to design their strategies not only to face today's China's market situation, but also to face China's transitional phase toward the free fluctuation of its exchange rate.

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