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Haute école de gestion
Genève

Have commodity trading houses become “Too Big to Fail”?

**Bachelor Project submitted for the obtention of the Bachelor of Science HES in
Economie d’Entreprise with a major in Commodity Trading**

by

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Declaration

This Bachelor Project is submitted as part of the final examination requirements of the Geneva School of Business Administration, for obtaining the Bachelor of Science HES-SO in the French equivalent of Business Administration – namely in Economie d'Entreprise, with major in Commodity Trading.

The student accepts the terms of the confidentiality agreement if one has been signed. The use of any conclusions or recommendations made in the Bachelor Project, with no prejudice to their value, engages neither the responsibility of the author, nor the adviser to the Bachelor Project, nor the jury members nor the HEG.

“I attest that I have personally accomplished this work without using any sources other than those cited in the bibliography. Furthermore, I have sent the final version of this document for analysis by the plagiarism detection software URKUND using the address supplied by my adviser”.

Geneva August the 14th 2015

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Executive Summary

Commodity trading is very important on a global scale, because of the nature of its activity - moving raw material from a place where it is abundant to a place where it is needed. Every country has resources, but not so many have all the goods they need. On a more than ever globalized world, commodity trading is necessary to help move the goods and create a balance between supply and demand and this job was done rather discreetly until the end of 2000s.

However, throughout this decade, the sector of commodities gained impressive value and volume until the recession of 2007-2009, and even then, the market got rapidly back on its feet driven by numerous factors. In parallel, the real economy experienced one of its worst crises ever and governments had no choice but to bail-out companies for massive amounts of money. The term “Too Big to Fail” started to be used again up to a point that it referred to more than just banks or insurers. The reaction from regulators was prompt and policymakers did not wait to see how the market would fare in the following years to launch far-reaching measures aiming to reform the financial system. And when known systemically important institutions were considered under control, the focus turned to commodity trading firms as this market was growing impressively fast. The systemic risk of those firms was and still is uncertain to watchdogs. This is why the question has been raised: have commodity trading houses become “Too Big to Fail”?

Being a student in “Economie d’Entreprise” – the French equivalent of Business Administration – my studies focus on a wide range of tools and principles relating to economics. As I attended classes of my major “Commodity Trading”, my view of the sector grew larger, and I understood how big some firms can be and how important this market is. When I realized there was a debate surrounding the potential systemic risk of those firms I wanted to know more, and although I was studying this branch of the economy, I could not tell whether or not this was the case. So I wondered: have commodity trading houses really become “Too Big to Fail”? I decided to take a closer look and to seek for answers.

Contents

Have commodity trading houses become “Too Big to Fail”?	1
Declaration	i
Acknowledgements	ii
Executive Summary	iii
Contents	iv
List of Tables	vi
List of Figures	vi
1. Objectives and methodology	1
2. “Too Big to Fail”: what it was and what it is	2
2.1 “Too Big to Fail”	2
2.2 The systemic risk	2
2.3 Defining systemically important institutions	3
2.4 The Federal Deposit Insurance Corporation Improvement Act	4
2.5 The first major event	5
2.6 The 2007-2009 financial crisis	5
2.7 Imperfections of the “Too Big to Fail” policy	6
3. The measures/regulations to prevent the systemic risk	7
3.1 The Swiss “Too Big to Fail” law	7
3.2 Basel III	9
3.3 The Dodd-Frank Act	11
3.4 The Paul Volcker’s Rule	12
3.5 Commodity trading firms and regulations/measures	13
4. The 2000s commodities bubble and the reasons why commodity houses are seen as “Too Big to Fail”	17
4.1 Commodities market growth and quick recovery to the crisis	17
4.2 China and India	19
4.3 The weakened U.S. dollar	21
4.4 The finances	22
4.5 Visibility	23
4.6 Timothy Lane	24
4.7 Banks; the commodity trading firms’ competitors	25
5. Commodity trading firms do not pose a systemic risk	27

5.1 Size of institutions	27
5.2 Interconnectedness and substitutability	33
5.3 Complexity and global activities	36
6. Conclusion.....	39
Bibliography	41
Appendix 1: Interview with Mr. David Hiler.....	52
Appendix 2: Interview with Mr. Craig Pirrong	69
Appendix 3: Commodity trading firms and banks figures	78
Appendix 4: U.S. Dollar vs Commodities' Prices	82
Appendix 5: Volume of Imports and Exports Vs Commodities' Prices	84
Appendix 6: Gross Domestic Products and Foreign Direct Investments Flows...	90

List of Tables

Table 1 – Measures and Aims of the Swiss “Too Big to Fail” law.....	8
Table 2 – Capital Adequacy Standard from Basel III	10

List of Figures

Figure 1 - Volume of Imports and Exports Vs Commodities' Prices	18
Figure 2 – Gross Domestic Products and Foreign Direct Investments	20
Figure 3 – U.S. Dollar Vs Commodities' Prices.....	21
Figure 4 – Evolution of Price Quotes	23
Figure 5 – Commodity Firms Total Assets.....	28
Figure 6 – Firms Total Assets.....	29
Figure 7 – Firms Revenues	30
Figure 8 – Firms Net Income	32
Figure 9 – Markets of the Major Swiss Commodity Companies	35
Figure 10 – Equity/Total Assets Ratio	37

1. Objectives and methodology

“Too Big to Fail” is a term that has been used more and more since the 2007-2009 financial crisis often due to fears over a future remake of this highly impacting event. Time has passed and the focus has been moving away from banks as stricter regulations have been legislated and are being implemented. In the meantime, the sector of commodities has been growing and reaching levels never seen before. This had the effect to shed light on commodity trading firms and consequently led people to associate the phrase “Too Big to Fail” with those companies. The purpose of this research is thus to establish whether or not commodity trading firms have really become “Too Big to Fail” and if they should be regarded as such in terms of legislations.

The first part of this paper will define what “Too Big to Fail” is and how it became what it is today. The second part takes a closer look to the legislative side of the systemic risk and its link to the commodities world. The third part of this research will focus on the reasons commodity trading houses have grown so much and on how it led people to think they are “Too Big to Fail”. Finally the fourth part will try to demonstrate whether or not commodity trading companies should be considered as “Too Big to Fail” based on regulators’ criteria to determine whether an institution can be considered as systemically important.

In order to achieve this paper, research has been conducted through readings of books, articles, research papers, officials’ statements and other types of research material. Data has been collected from annual reports and organizations’ databanks such as the United Nations and analyzed as well. On top of that, 2 interviews have been conducted, one with Mr. David Hiler – former minister of finance in Geneva – and the other with Professor Craig Pirrong who teaches at the University of Houston and is well-known for his research regarding the commodities sector. Both have brought elements of reflection to this study, especially the latter as he had been researching the topic for 3 years until he finally published a white paper¹ on the topic of the systemic risk linked to commodity trading firms. Both interviews have been transcribed in order to ease access to the data and to facilitate the research. Put together, those elements have been key to answer the question: “Have commodity trading houses become “Too Big to Fail”?”

¹ “Not Too Big To Fail – Systemic Risk, Regulation, and the Economics of Commodity Trading Firms”

2. “Too Big to Fail”: what it was and what it is

2.1 “Too Big to Fail”

“Too Big to Fail” is a policy that started to be mentioned in the United States of America in the 1950’s, surrounding discussions about the Federal Deposit Insurance Act (FDIA). This law allows the U.S. government to deal with failing institutions through the Federal Deposit Insurance Corporation (FDIC). This independent corporation has been existing since 1933 with the goal to “maintain stability and the public’s confidence in the nation’s financial system” by insuring deposits on behalf of the federal government and also using other mechanisms (Federal Deposit Insurance Corporation, 2014). Basically, the FDIC is a safety net from the U.S. government guarantying the repayment of up to \$100,000 per depositors in case of failure of one or several institutions declared “Too Big to Fail”.

Before the 1950’s, the FDIC could either let the failing institution go bankrupt and pay off the insured depositors, or nationalize the failing institution. Since the 1950’s and the ramification of the Federal Deposit Insurance Act (FDIA also known as the “Too Big to Fail” policy), the FDIC has the 3rd option of injecting money in distressed corporations in order to allow it to continue its exploitation until it performs well again, but it has really been used only in the 1970’s for the 1st time (Federal Deposit Insurance Corporation, 1997).

2.2 The systemic risk

The “Too Big to Fail” policy is intended to help companies that are considered too large and too interconnected with other institutions that their bankruptcy would be disastrous not only for those institutions but also for the real economy². The interconnectedness and the size or the number of institutions involved matter, because if an institution is really big and lends a lot of money to other institutions, it becomes really important and its failure to keep lending money would provoke a really abrupt economical deceleration for those other institutions by preventing them to run their business properly, eventually leading them to bankruptcy as well. This is also known as the “systemic risk”. However, as Professor Pirrong said: “systemic risk can arise even when you have smaller institutions failing”. He also gave the example of the U.S. Great Depression (financial crisis

² “The part of a country's economy that produces goods and services, rather than the part that consists of financial services such as banks, stock markets, etc.” (Cambridge University Press, 2015)

of 1929): “the banking crisis was not only big banks, it was thousands of small banks that got them into trouble, similarly with the crisis in the United States in the 1980’s” (Interview with Mr. Pirrong, 2015).

The systemic risk is not only about companies, it also concerns people. In fact, the public being depositors, they would start withdrawing if they sense the eventuality that their financing institutions – most of the time their banks – are threatened with bankruptcy. It is also called a bank run. This would precipitate the fall of the institutions and therefore of their stakeholders, weakening the trust in financial institutions as a whole and by contagion touching other financial institutions which might be perfectly solvable. Furthermore, if the “Too Big to Fail” policy is applied, the money from the taxpayers would be used to save those companies or to repay depositors through the FDIC; the very same public that withdrew in mass would eventually have to pay indirectly.

2.3 Defining systemically important institutions

It might appear that systemically risky institutions are all banks and insurers, because they have a large number of depositors and creditors and they play such an important and central role in the economy, but it is not necessarily the case. In January 2014 and in March 2015, the Financial Stability Board (FSB)³ and the International Organization of Securities Commissions (IOSCO)⁴ have published together a report regarding an “Assessment Methodologies for identifying Non-bank Non-insurer Global Systemically Important Financial Institutions (NBNI G-SIFIs)” (FSB and IOSCO, 2015).

Those methodologies will allow regulators to identify systemically important financial institutions that are not banks or insurers based on 5 criteria: The size, the interconnectedness, the substitutability, the complexity and the global activities. For now, those reports do not identify any

³ “The FSB has been established to coordinate at the international level the work of national financial authorities and international standard setting bodies and to develop and promote the implementation of effective regulatory, supervisory and other financial sector policies in the interest of financial stability. It brings together national authorities responsible for financial stability in 24 countries and jurisdictions, international financial institutions, sector specific international groupings of regulators and supervisors, and committees of central bank experts. Its Secretariat is located in Basel, Switzerland, and hosted by the Bank for International Settlements.” (FSB and IOSCO, 2015)

⁴ “IOSCO is the global standard setter for securities market regulation. The organization's membership regulates more than 95% of the world's securities markets in more than 115 jurisdictions. Its Secretariat is located in Madrid, Spain.” (FSB and IOSCO, 2015)

entity, nor do they give any recommendations regarding measures to take. Those reports were simply released so that all parties can give feedbacks and participate in the improvement of the methodology allowing the FSB and the IOSCO to improve the methodology further and pave the way for governments which would eventually create adapted laws (FSB and IOSCO, 2015). Those indicators and their link to the commodities' sector will be discussed further in this paper.

2.4 The Federal Deposit Insurance Corporation Improvement Act

In 1991, The Federal Deposit Insurance Corporation Improvement Act (FDICIA) was ramified following the constant increase of economically important failing institutions. About 1'300 banks failed or were under the failing bank assistance plan of the FDIC from 1980 to 1991 (Federal Reserve History, 1991). This had the effect to undercapitalize the FDIC. This new law was promulgated because the Federal Deposit Insurance Act was getting old and needed to be updated so that it could be more adapted to the modern financial world that saw the size and the complexity of banks increase drastically. Therefore, access to the U.S. Treasury was given to the FDIC in order to bolster the Bank Insurance Fund (Macey & Holdcroft, 2011). On the other hand, the purpose of the FDICIA is also to limit a bit more the ability of the regulators to help those failing institutions so that they could fail and the market could manage itself which is a vision of the economy based on the theory of Adam Smith – highly regarded economist – of the invisible hand⁵. This law is more liberal, but still gives power to regulators to intervene in case of financial distress from big companies, so it has not changed much regarding the “Too Big to Fail” policy, but it remains a step forward allowing the U.S. government to show its early willingness to address the systemic risk related to systemically important institutions (Federal Deposit Insurance Corporation, 2014).

⁵ This theory basically says that an equilibrium of supply and demand can be reached on a market free of interventionism, thanks to what he calls the invisible hand which is by his definition the “unobservable market force” and relating to the rationale behind individualists trying to maximize their profit (The Economic Times, 2015)

2.5 The first major event

The first major event that saw the actual application of the “Too Big to Fail” policy is the Continental Illinois Bank’s failure in 1984, when the government had to intervene and pay a \$5.5 billion dollars bail-out, plus 8 billion loans and buy off \$4.5 billion dollars in stocks, which was 80% of the company in order to recapitalize it and allow it to survive under the name of Continental Bank. This company had approximately \$40 billion dollars assets under management⁶ at that time (Federal Deposit Insurance Corporation, 1997). Since this first major bank failure, the 2007-2009 financial crisis has hit the world and has set a new record when it comes to the size of systemically important financial institutions. The Continental Illinois Bank suffered a \$10 billion dollars withdrawal in a fortnight in May 1984, whereas Washington Mutual – a savings bank - experienced a \$16.7 billion dollars withdrawals in 9 days in September 2008, representing 9% of deposits it managed. It was then seized by the FDIC and sold to JPMorgan Chase for a really low amount - \$1.9 billion - while it held assets under management valued at about \$329.7 billion dollars (WASHINGTON MUTUAL, INC., 2008).

2.6 The 2007-2009 financial crisis

It is since the last financial crisis that the term “Too Big to Fail” has become fashionable again. So many institutions were under pressure and experienced serious loss that the American government had to launch an Emergency Stabilization Act, unlocking up to \$700 billion dollars in order to save failing corporations, and it was not the only government to do so (University of California, Berkeley, 2010). Indeed, “Too Big to Fail” does not concern only the United States of America, but also many – if not all – developed, wealthy enough, countries. Switzerland’ government, for instance, had to pay in the region of 6 billion Swiss Francs in order to bail out⁷ UBS – the largest Swiss bank - in 2011 (Giles, 2008). Compared to the Continental Illinois Bank’s case or the Washington Mutual one, it was not such a high price to pay to ensure UBS’ survival in regards of the assets under management at UBS at that time (1.05 trillion Swiss Francs, about 1.7 times the Swiss Gross Domestic Product) (Meier, 2014). Since then, the Swiss government has adopted the new BankAct (BankA; “Too Big to Fail”) law on 1 March 2012 which is based on

⁶ “The investments that are managed by a bank or investment company, and their total value” (Cambridge University Press, 2015)

⁷ “To help someone or something such as a plan or company, esp. by giving or lending money” (Cambridge University Press, 2015)

Basel III⁸ and is more restraining for companies, but also helps prevent the systemic risk of those companies (Confédération Suisse, 2014).

2.7 Imperfections of the “Too Big to Fail” policy

There are 2 problems with the “Too Big to Fail” policy and in any country which applies it under this name or another.

First is the fact that it gives a huge incentive for the institutions which are considered systemically important to take unconsidered risks, this is called a moral hazard. Indeed, since those institutions are protected from failure thanks to the taxpayers’ money, the “Too Big to Fail” policy incites institutions covered by this policy to take those kind of risks (Macey & Holdcroft, 2011). And as Mr. David Hiler said: “If it [the institution] does not die while it should have, there is always someone paying for it, it is the ideology’s role to say who, but eventually people will pay” (Translation of interview with Mr. Hiler, 2015).

Second is the fact that systemically important institutions can get credits and do business with better rates or at lower costs than other institutions. Because they have a guarantee from their respective states that their creditors or depositors are covered, they thus get better grades from rating institutions such as Standard & Poor’s⁹ or Moody’s⁹. Therefore they generate better trust to their counterparties, leading to better interest rates in credits and in a stronger position on the market which can be considered as unfair (Macey & Holdcroft, 2011).

⁸ See point 3.2 of this paper

⁹ “organization that calculates the risk that loans will not be paid back) that also publishes a share index (= list of the average prices of shares on a particular stock market” (Cambridge University Press, 2015)

3. The measures/regulations to prevent the systemic risk

The following measures or regulations are all very sophisticated and could each be the subject of a whole paper. The goal here is to show that regulators have rules to try and prevent the systemic risk. However, going too far in details of each one of those measures or regulations would be irrelevant to the main topic of this paper. Hence, they are merely presented to allow a general comprehension.

3.1 The Swiss “Too Big to Fail” law

Switzerland is an important country in the banking sector and, as mentioned earlier, it had to face the same issues as the U.S.A. and other governments regarding the failure of systemically important institutions. This is the reason why, the Swiss government has reacted and has been implementing the “Too Big to Fail” law which is based on the Basel III⁷ standards since its adoption in 2012. The Swiss National Bank¹⁰ decides which institutions are considered systemically important and thus, have to abide to the specific regulations of the “Too Big to Fail” Regime. So far, 4 institutions have been identified in Switzerland: UBS, Credit Suisse, Zurich Cantonal Bank and the Raiffeisen Group. Those banks have to apply 4 measures in order to comply with this regulation. They have to increase their equity¹¹ at a certain level in order to establish a leverage ratio depending on their level of systemic importance which is determined by the Swiss National Bank. Then they have to improve their reserve of immediately available cash and short-term receivables¹² so that they are able to cover their cash outflow for 30 days. The 3rd measure is the obligation for those institutions to be able to maintain their systemically important service. In order to do that, shareholders and bondholders now have to take responsibility in the sense of a bail-in, which is opposed as a bail-out. This means that the taxpayers’ money is the last resort to save a failing institution and that before this money is used, bond creditors and share owners will bear the loss as much as it is legally possible. The last measure of the “Too Big to Fail” law in Switzerland is that the government keeps flexibility of decision regarding each case and it can

¹⁰ “A bank that provides services to a national government, puts the official financial plans of that government into operation, and controls the amount of money in the economy controlling interest rates” (Cambridge University Press, 2015)

¹¹ “The capital that a company gets from selling its shares rather than borrowing money” (Cambridge University Press, 2015)

¹² “Amounts owed by customers to a company at a particular time and not yet paid” (Cambridge University Press, 2015)

take peculiar additional measures to complement and foster the existing law (FINMA, 2014). This law is relatively recent, so it is still being implemented, but systemically important institutions have until 2019 to completely comply with those rules (Sommaruga, 2015).

One of the effects of these measures is the restructuring of the institutions under “Too Big to Fail” law. Even though this law does not explicitly ask for a separation between the retail banking service and the investment arm of a company, most of the banks already have or are on the verge of doing this exactly.

Table 1 – Measures and Aims of the Swiss “Too Big to Fail” law

Aims	Reduce probability of default	Reduce impact of default	Improve prospects for resolution or liquidation	
Measures	Increased capital	Enhanced liquidity	Recovery/ resolution plans	Improved Banking Insolvency Ordinance

This is a table illustrating the different aims and measures included in the “Too Big to Fail” 2012 law in Switzerland (FINMA Swiss Financial Market Supervisory Authority , 2014).

3.2 Basel III

Basel III is the 3rd set of agreements established by the Basel Committee on Banking Supervision, after Basel I and Basel II. The Basel Committee was created in 1974 by the governors of the central banks from the “G10”, then called the “Group of Ten”, who are the main deciders of central banks from the then “G10” members¹³. Its purpose was and still is to “to strengthen the regulation, supervision and risk management of the banking sector” (Bank for International Settlements, 2014) in order to make companies more resilient to financially difficult times. This committee works through a forum 4 times a year on a micro economical level and on a macro economical level. What is interesting here is that since Basel I, which was established in 1988, they had been already trying to prevent macro economical contagion of financial distress, because the main lines of this first reform measure was to expect from international banks to have a minimum capital¹⁴ of 8%. In order to calculate this, the capital had to be divided by the risk-weighted assets; also called the Tier 1 ratio or leverage ratio. In a nutshell, the riskier the assets¹⁵ were, the more capital they needed to hold. It was implemented in Europe in 1989 and in the “G10” countries in 1992. The Basel Committee has no legal authority, but has become the group to emit standards in regards of international banking supervision. The 3 Basel agreements are the foundation for governments to create standardized regulations so that the rules can be similar to all and understood by everybody.

Then came Basel II in 2004 which was different technically. It was an expansion of Basel I and was implemented with a new “capital adequacy framework”, meaning with more precise calculus and a more secure management of the risks, but the main idea remained the same as the 1st Basel agreement (Viral, 2012).

In 2010, in response to the 2007-2009 financial crisis, came Basel III. The main purpose remains the same as the 2 previous versions and consists of greatly improving international banks’ resilience to financial crises. Built on Basel I and II, it provides assessment methods based on

¹³ “The Group of Ten: a group of 11, originally 10, countries with highly developed economies, whose central bank officials meet to discuss making money available to the IMF for loans to its members. The G10 includes Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, Switzerland, the UK, and the US” (Cambridge University Press, 2015)

¹⁴ “The total amount of money and property that an individual or company owns” (Cambridge University Press, 2015)

¹⁵ “Something that an entity has acquired or purchased, and that has money value (its cost, book value, market value, or residual value). An asset can be (1) something physical, such as cash, machinery, inventory, land and building, (2) an enforceable claim against others, such as accounts receivable, (3) right, such as copyright, patent, trademark, or (4) an assumption, such as goodwill” (businessdictionary.com, 2015)

assets risk (Tier 1 ratio) and liquidity requirement that are even stricter and more elaborated than the previous versions. Basel III has the particularity to take into account more accurately the systemic risk of firms. It states that there are 2 types of risks causing the failure of an institution. First is the capital or solvency risk, meaning that the value of assets the companies hold is lower than its short term debts. Second is the fact that assets might become illiquid and therefore not easy to sell at a high enough value so that the companies holding them can reimburse their obligations immediately - it is called the liquidity risk. This second risk is the big difference between the first 2 Basel Agreements and the 3rd one, which is more focused on this liquidity risk. The problem of Basel III is that it does not define precisely at which point one of those 2 risks mentioned above become systemic risks, and this is one of the reasons why the Swiss government had to come up with a plan such as the “Too Big to Fail” law for example. Just as the Swiss law, Basel III is expected to be fully implemented by 2019 (Viral, 2012).

On the table 2 below is displayed the capital adequacy framework of Basel III. It is separated in 3 parts. The 1st one, the minimum equity capital ratio, is what is considered as a buffer, because it means that companies have to hold capital considered as countercyclical, meaning that in times of financial distress, this type of capital – determined by jurisdictions adopting Basel III standards - would not be as affected as other types of capital (Investopedia LLC, 2015). The 2nd part is the minimum equity Tier-1 ratio. Conversely to Tier-2 capital such as loan, losses, reserves and other types of reserves considered as supplementary capital, Tier-1 capital is the measure of the actual banks’ strength, because it takes into account only short term capital that can be used quickly in case of financial distress and is balanced with the assets which are credit risk weighted. The total of those 2 types of capital ratios makes the minimum total capital + the new capital conservation buffer that is required from Basel III as shown on the table 2 below.

Table 2 – Capital Adequacy Standard from Basel III

Percent		
<i>Capital adequacy standard</i>	<i>2013</i>	<i>2019</i>
Minimum equity capital ratio (pure stock)	3.5	4.5
Minimum tier-1 capital (equity + other instruments, including some hybrid bonds)	4.5	6.0
Minimum total capital + new capital conservation buffer	8.0	10.5

Source: (Viral, 2012)

3.3 The Dodd-Frank Act

On 21 July 2010, the president of the United States of America, Barack Obama, signed the adoption of the Dodd-Frank Wall Street Reform and Consumer Protection Act (also known as the Dodd-Frank Act). This was the American response to the lack of regulations that allowed the 2007-2009 economical recession to happen. Several measures are described through 848 pages and 16 Titles of law in order to reform the financial system and prevent the next crises, or at least to reduce the potential damages of the next crises. This law goes way further than the Swiss ““Too Big to Fail”” law, and does not only apply to systemically important institutions, but to all financial institutions in the U.S.A. The systemic risk here is expected to be monitored and lowered through the empowerment of autonomous regulators, allowing them to take actions against potentially “Too Big to Fail” institutions. The regulators are to identify which company presents a systemic risk and which does not, and with 11 regulatory offices devoted to tasks related to the Dodd-Frank Act, it is indirectly costing a lot of money to the U.S. taxpayers. One of the main problems here is that since those regulators decide independently from a higher federal authority, whether an institution is systemically important, and by doing so, intervene and seize those institutions considered systemically important, they could intervene too early or too much and therefore put an end to the company before it had a chance to try to correct its situation and survive (Macey & Holdcroft, 2011).

Another purpose of the Dodd-Frank Act is to allow the government to have a better sight and control over what happens on the over-the-counter¹⁶ (OTC) market. Indeed, this market represented 40% of the total market in 2013 (McCrank, 2014) and increased systemic risk because of the interconnectedness between parties coming from those deals. This law gives the incentive to businessmen to use contracts other than swaps, but more in the form of standardized contracts such as futures contracts, by increasing costs for designated swap dealers (Leising, 2013). One of the main reasons for the 2007-2009 financial crisis happening was the opacity of the swaps market. Dodd-Frank Act gives a great incentive to the people involved in those deals to get out of the shadow and do business on a more transparent basis. As a result, “more than half of the \$18 trillion in notional daily trading of energy swaps has moved to futures exchanges” (Leising, 2013) and have raised the question of whether Clearing Houses such as the

¹⁶ “Used to describe shares that are bought and sold directly using a computer system, rather than on a stock [exchange] market” (Cambridge University Press, 2015). The advantage is the opacity of this market, because deals are concluded directly between buyers and sellers.

Intercontinental Exchange (ICE) have become themselves too systemically important, but this is another question and will not be treated in this paper.

The Dodd-Frank Act is much more complex and detailed than the previous laws regarding the systemic risk. However, it has been 5 years since its adoption from the American government, and it is not known yet if this law has actually resolved the “Too Big to Fail” issue. It has also affected the commodity trading firms through the increase of futures¹⁷ deals linked with the decrease of swaps¹⁸.

3.4 The Paul Volcker’s Rule

The Volcker’s Rule was created in 2009 by Paul Volcker, chairman of the U.S. Federal Reserve from 1979 to 1987, who became the advisor of economics of Barack Obama under the status of chairman of the Economic Recovery Advisory Board in 2008. Paul Volcker was mandated by the U.S. president to find a solution to the “Too big to fail” issue, and the Volcker’s Rule was one of the answers. This rule is not the entire solution itself, but has been included in the Dodd-Frank Law and is being implemented with some adjustments. The basic principles of this rule is to limit the size of institutions and to disallow those institutions to practice proprietary trading and own, invest or sponsor hedge funds, or private equity funds (The White House, 2010). In short, this means that speculative investments financed by government insured money under the Federal Deposit Insurance Act (FDIA), or through other mechanisms, are not allowed anymore, and the money from depositors cannot be used to any speculative end. This has modified the way institutions get financed and has led to a symbolic separation within those institutions between retail banking and investment departments. The purpose is to have one-third of the institutions allowed to take speculative risks on derivatives, without using the money insured by the government – the depositors’ money. The rest of the institutions would be able to practice its activity without taking speculative risks with the money of depositors – without doing proprietary trading (Macey & Holdcroft, 2011 ; Aziz, 2013).

¹⁷ “Binding contract made on the trading floor of a futures exchange to buy or sell a commodity, financial instrument, or security, on a stated future date at a specified price. These agreements are standardized in terms of quantity, quality, delivery location, and delivery time for each item, and do not normally result in an actual delivery but are settled (traded out) through counter-contracts. Used in hedging, futures contracts help mitigate the risk of wild price fluctuations. In contrast to an option (right to buy or sell an item that lapses if not exercised) a futures contract is an obligation fulfilled only by the completion of the transaction” (businessdictionary.com, 2015)

¹⁸ “Interest rate swap: exchange of periodic interest payments between two parties (called counter parties) as means of exchanging future cash flows”. (businessdictionary.com, 2015)

Problems with this rule are that even though investment activities and retail activities do not finance themselves the same way, they remain connected, and since they are not 2 strict legal different entities, if the investment department fails, it is going to be saved by the retail department, which in turn would be saved by a bail-out or liquidated in case of total insolvency of the institution. And if this entity is systemically important, there is not much that the Volcker Rule would have done to solve the “Too Big to Fail” problem, as the failure of this company will contaminate its creditors and create a chain reaction. Although it does not resolve the systemic risk issue, it does make institutions safer as Mr. David Hiler said: “Now it is typically something that is alright if you do it [speculative investment] with your own money. It does not pose any problem if someone wants to take risks, he can either get rich, or get poor. There is no global effect. But if you start using people’s money for that [it becomes a problem] (Translation of interview with Mr. Hiler, 2015).

3.5 Commodity trading firms and regulations/measures

Commodity trading houses are often believed to be unregulated since they have only recently been more under scrutiny. Because of the opacity of the sector and the fact that many trades are over-the-counter, people do not know how those firms are regulated. It is true that they do not have to comply with as many regulations as pure financial institutions. Although they have not yet been considered “Too Big to Fail” by watchdogs, regulations have existed in different jurisdictions.

In the United States of America, the main regulator of commodities is the Commodity Futures Trading Commission (CFTC) which has replaced the Commodity Exchange Authority in 1974. It has more power than its former version as the old federal agency could only regulate a few agricultural commodities. The Commodity Futures Trading Commission Act of 1974 enables the CFTC to regulate all existing and U.S. traded futures commodities. This law was an overhaul of the previous Act called the Commodity Exchange Act. In short, the purpose of those laws is to regulate the sector by forcing all futures and options to be traded on organized exchanges, conversely to the former law which regulated only agricultural commodities listed on the Commodity Exchange Act (CFTC Commodity Futures Trading Commission, 2012).

The Dodd-Frank Act requires swap dealers to get registered, giving them the incentive to be more transparent because it has become more costly to do business this way and once registered, swap dealers have to show what they do and how by transmitting record-keeping periodically. The CFTC has the responsibility to implement this part of the Dodd-Frank Act and is currently working on it. So far, only a few commodity trading firms such as Cargill Incorporated have registered on the swap dealers provisional list of the CFTC (CFTC Commodity Futures Trading Commission, 2015).

Also, the U.S. Volcker's Rule, which is a part of the Dodd-Frank Act, limits the financialization of commodity trading from banks. Because the main point of the Volcker Rule is to ban proprietary trading for banks, not only does it mean that banks cannot invest subsidized deposits in risky operations, but it also limits banks' ownership of physical goods and increases costs of commodity trade finance for them. Indeed, the CFTC has also proposed to limit the size of positions derivatives on physical commodities for financial institutions. This represents an opportunity, but also a challenge for commodity trading houses as they have to find new sources of financing which will likely lead them to increase their shadow banking¹⁹ activities and potentially take more risks, but also potentially make them more profitable (Ascher, Laszlo, Quiviger, 2012).

Basel III is not law, but just a set of recommendations/rules. That is why the Economic and Financial Affairs Council (ECOFIN)²⁰ and the European Parliament (EP)²¹ decided to enforce it in Europe through a directive under the name of the Capital Requirement Directive IV (CRD IV). This European law is applicable to companies regulated by the Markets in Financial Instruments Directive II (MIFID II) which was initiated in 2010 by a press release from the G20 finance ministers and central banks governors. This press statement says that commodity derivatives markets need to be more regulated. However, MIFID I, the former and fully enforced law - already stipulated similar terms, but most - if not all- commodity trading houses were partially or fully exempted from those rules. The exemption's article (Article 2(1)(k) MIFID II) of the law was modified in MIFID II, but still might include more or less all commodity trading firms. Indeed, the text mentions: "commodity traders if trading is an ancillary business and dealing on own account and not a subsidiary of a financial group" (Ascher, Laszlo, Quiviger, 2012). This rise the question of who are

¹⁹ "Financial activities such as lending or investing money carried out by organizations that are not officially banks and so do not have to obey the same rules" (Cambridge University Press, 2015)

²⁰ "The Ecofin Council, is responsible for economic policy, taxation matters, financial markets and capital movements, and economic relations with countries outside the EU, among other things. It also prepares the EU's annual budget and takes care of the legal and practical aspects of the single currency, the euro ". (Economic and Financial Affairs Council, 2015)

²¹ "The European Parliament is the EU's law-making body". (European Parliament, 2015)

going to be included in this new directive, as it might be ambiguous to define “ancillary”, but for now it remains uncertain (Rieveley, 2013 and Hatcher, 2015). Yet, if some European commodity trading firms are not considered as “ancillary dealers”, this would mean that they would have to comply with CRD IV and therefore with Basel III standards regarding capital requirements by 2019 (see Table 2).

CRD IV would have an impact on London based and all European commodity trading businesses and since London is one of the world’s commodity trading hub this could be an important disadvantage to several companies if obliged to comply with CRD IV. Regarding Swiss based companies, Geneva’s commodity trading hub is in Switzerland and not in the European Union, hence not in the jurisdiction of CRD IV. However, American rules (Dodd-Frank Act) being similar to Basel III, European rules as well (CRD IV), it is more than likely that either by a future Swiss law or by lobbying on the market, the Swiss based commodity trading companies would likely end up complying with Basel III or with similar standards in terms of capital requirements.

Besides, similarly to the U.S. government and the Dodd-Frank Act, the European Commission²² has adopted in 2012 the European Market Infrastructure Regulation (EMIR) which is a way to regulate over-the-counter derivatives, in order to make this market more transparent and to give the incentive to dealers to exit this way of doing business by forcing them to go through central clearing²³ regulators and therefore increasing costs. This regulation raises the same problem as MIFID II, because there is an exemption as well: “central clearing not required for trading by nonfinancial firms for hedging²⁴ purposes or other trades below a clearing threshold.” Again, the situation remains uncertain regarding whether commodity trading firms fall under this law or not (Dicht, 2015).

When it comes to the rest of the world, and more specifically Singapore, Japan or China, which are very important regions for the sector, the prospects of regulations remain blurry. Singapore – one of the most important trading hub in the world - has stated in 2012 its intent to get in line with global regulations but nothing specific has been announced since. Not much information is coming from other countries on the east part of the world (Ascher, Laszlo, Quiviger, 2012).

²² “The European Commission is the EU's executive body. It represents the interests of the European Union as a whole (not the interests of individual countries)” (European Commission, 2015)

²³ “An organization that other organizations use for managing payments relating to buying and selling investments” When utilizing this method of deals, information is disclosed. (Cambridge University Press, 2015)

²⁴ “An investment made in order to reduce the risk of losing money on shares, bonds, etc. that you own, for example, by buying futures or options (= the rights to buy or sell shares for a particular price within a particular time period)” (Cambridge University Press, 2015)

To summarize, it is wrong to say that commodity trading firms are not regulated. Since the very essence of this business is to make global business and to move products from one place to another, they have to abide to a plethora of different international and national laws. Regulators are clearly going towards stricter laws regarding the commodity trading sector and it is very likely that the business models of the concerned companies are going to change, if not already changed. It is a period of profound restructuring in the business and commodity trading firms should be aware and get prepared if they want to succeed in the future, because whether or not they are actually “Too Big to Fail”, they are very likely to be treated as such.

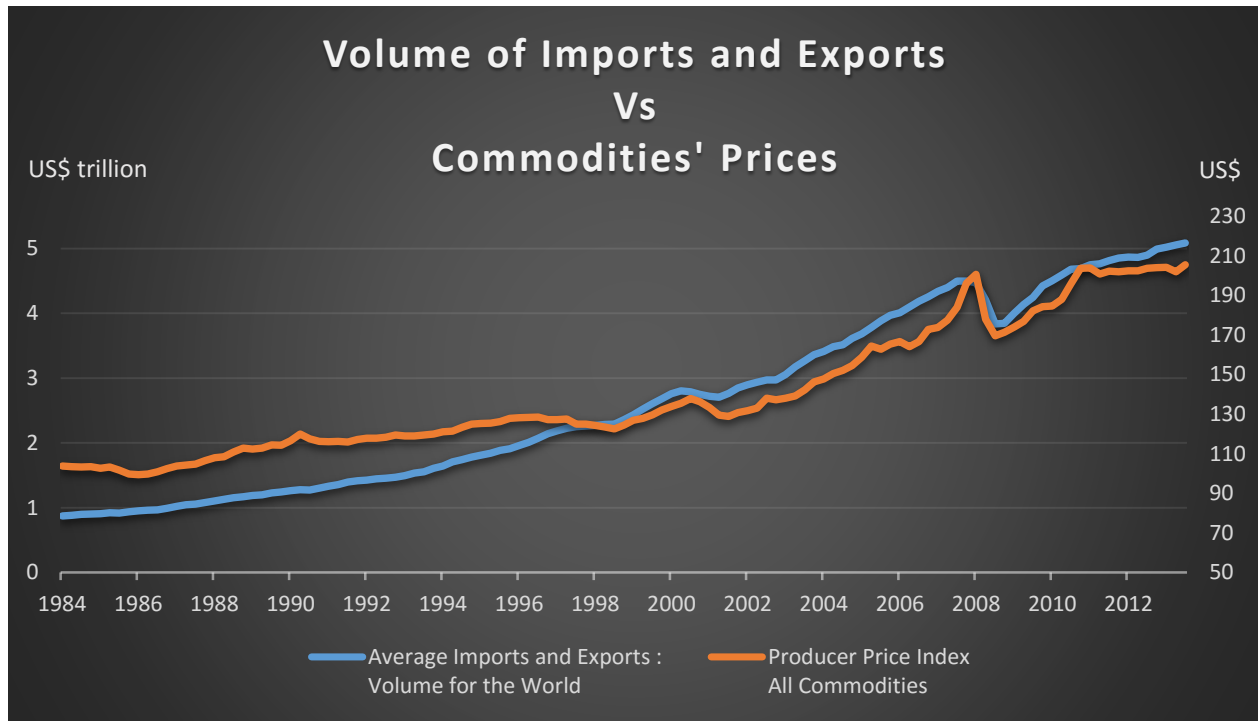
4. The 2000s commodities bubble and the reasons why commodity houses are seen as “Too Big to Fail”

4.1 Commodities market growth and quick recovery to the crisis

The 2007-2009 financial crisis reminded the world that regardless of their size or their involvement in the financial market, institutions and people are all vulnerable and can be affected by the way the financial world acts. The ramifications of this recession were so extended and so complex that many people have suffered the consequences of it and lost their jobs, their businesses or even more. Unfortunately, it was too late when this event occurred, and the real economy is still paying the costs of the burst of this recession. However, mentalities have changed and people now want to know how this world works, they want to be able to see what is going on and how things are done, so that they can act before it is too late, conversely to what happened 7 years ago.

But not everybody endured the same consequences of this crisis. Although the commodities market was going through a bubble from the 2000s, the sector suffered as much as any other sector, but the recovery has been impressively quick. Indeed, as shown in the following graph (Figure 1) with the orange curve that is related to the prices on the right vertical axis, commodities consolidated producer index – an average price of all commodities put together - were already at their highest level ever in 2008 when the crisis hit the world, as the prices grew 101% in 14 years with levels going from \$99.7 in 1986 to \$200.5 in 2008. Then, the crisis hit the economy and the sector of commodities went through a decrease in prices of 16%, but quickly bounced back to establish itself at a new record price of \$203.8 in 2011, after another increase of 20%. The total increase from the year 2002 with a price at \$128.9 to the year 2011 was at 58% whereas the growth from the year 1986 to the year 2002 was at 29%, going from prices of \$99.7 to \$128.9. This curve is a good illustration of how intensely driven the commodities market has been for the last 30 years, and especially for the last 14 years and how fast it recovered from the financial crisis of 2007-2009. In January 2014, the commodities consolidated producer price reached a new record at \$205.5, meaning that the market keeps gaining value while attracting attention.

Figure 1 - Volume of Imports and Exports Vs Commodities' Prices



Sources: see appendix 5

On the Figure 1 presented above, the quarterly average volume of trade (determined by the average between imports and exports) of goods and services is displayed by the blue curve that is related to the left vertical axis with a value in U.S. dollars trillion. As there was no accessible data regarding the historical volume of trade in commodities specifically, the volume of imports and exports of goods and services is considered as an analogous indicator of the evolution of the amount of trades in commodities, because commodities are included in the count of goods and services. And as shown on the graph above (Figure 1), commodities have not only grown in value for the last 28 years, but it has also grown in volume of trade. Those volumes went from \$915 billion in 1986 to \$5.08 trillion in 2014, being an increase of 455%. In this case, the last 14 years contributed less to the sheer breadth of the curve with an increase of 95% from 2000 at \$2.6 trillion to 2014 at about \$5 trillion, while the increase from 1986 to 2000 was at 184%. But the growth of trades in the last 14 years is remarkable because the market was more mature than the 14 years preceding the year 2000, making the environment and the conditions more difficult to grow in this market, showing how strongly the market has been rising since the year 2000.

Furthermore, the volume of trade acted similarly than the prices of commodities in reaction to the crisis as in 2008 the volume of trade dropped 14% from 2008 to 2009 and got back at its level in

2010. The crisis disturbed the volume of trade for less than 2 years and this again displays how quickly trades in commodities and other goods and services recovered from the financial crisis, explaining also the reason why it caught the eye of the public.

The similar pattern of those 2 curves is striking. Macroeconomics rules that if the volume increases, the supply is going up and therefore prices should go down because the goods become less rare. But in this case, the reality did not follow this principle and the patterns of each curve were actually positively correlated. This is mainly due to the fact that even though volumes (the offer) increased a lot in the 2000s, the demand grew even faster which led to higher prices on a regular basis. The point remains that the sector grew both in value and in volume and experienced an acceleration of growth during the 2000s.

This fantastic decade for commodities' players is emphasized by the fact that in 2008, the top 20 largest commodity trading firms' net income²⁵ was more important than the 3 biggest U.S. banks' net income combined (JP Morgan Chase, Morgan Stanley and Goldman Sachs), with a record of \$36.5 billion profits²⁶ for the commodities sector and an overall \$250 billion profits in a decade from 2000 to 2010 from the 20 biggest commodity trading firms (Blas, 2013).

The 2007-2009 crisis having hit the world, people started to take a closer look to the financial world and they found out that the commodity trading sector got increasingly big for the last 30 years and especially during the years preceding this crisis. The growing sums of money and volumes of trade during the 2000s alongside the quick recovery of the sector after the crisis are factors that have obviously attracted attention to commodity trading and let people wonder whether the sector had become "Too Big to Fail".

4.2 China and India

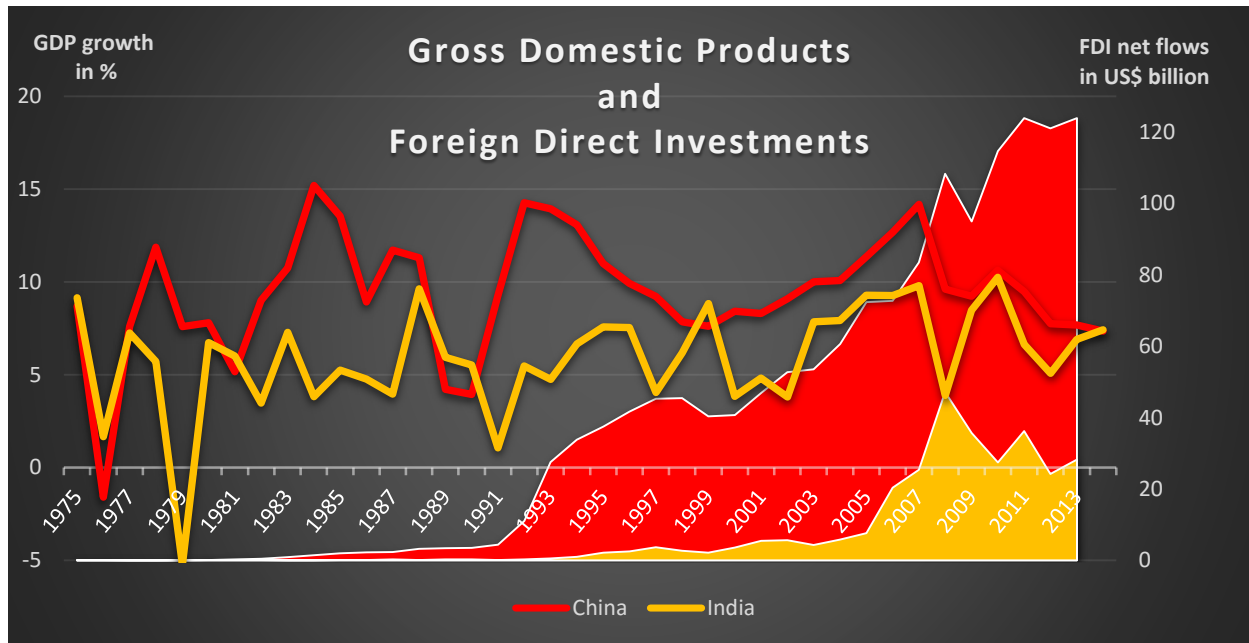
Another factor which contributed to the 2000s bubble was the emergence of China and India – the 2 most populated countries in the world. After both those governments decided to vastly invest in their own economy by building infrastructures through mega projects, the impact on commodity trading was obvious. Indeed, in order to achieve such projects, a lot of raw material has been needed and not only for constructions or energy, but also for people who need soft commodities and other types of commodities. The true political and economical change occurred in China in

²⁵ "The total income of a company after all tax and other costs have been paid". (Cambridge University Press, 2015)

²⁶ Synonym of net income

1978, when the country opened itself to the world by widening its industries to foreign businesses, 13 years before India. However, the reforming of a country takes time, especially 2 big ones like China and India. Indeed, since the mid-1970s the 2 countries' economies had been consistently growing before the 2000s, with their Gross Domestic Products (GDPs)²⁷ often reaching levels as high as 10% for China and 6% for India as presented on the Figure 2 below (the red curve is China's GDP annual growth and the yellow curve is India's GDP annual growth). The 2 economies experienced gaps in their growth, but remained mostly higher than other economies and the consistency of growth of those economies finally convinced foreign investors to truly engage their money on long-term investments at the beginning of the 1990s for China and in the mid-2000s for India as shown respectively with the red and the yellow areas on the graph below (Figure 2).

Figure 2 – Gross Domestic Products and Foreign Direct Investments



Sources: see appendix 6

This 2000s bubble is due to many factors. One of them is the increasing volume of trades and prices in the sector since the 2000s, which attracted interest for new investors who saw an opportunity to take advantage of the boom and injected more and more money, pushing the demand up. Also, as there was less investments during the 1980s and the 1990s and even less before that, the capacity of the sector to respond to this increase in demand was limited and slow

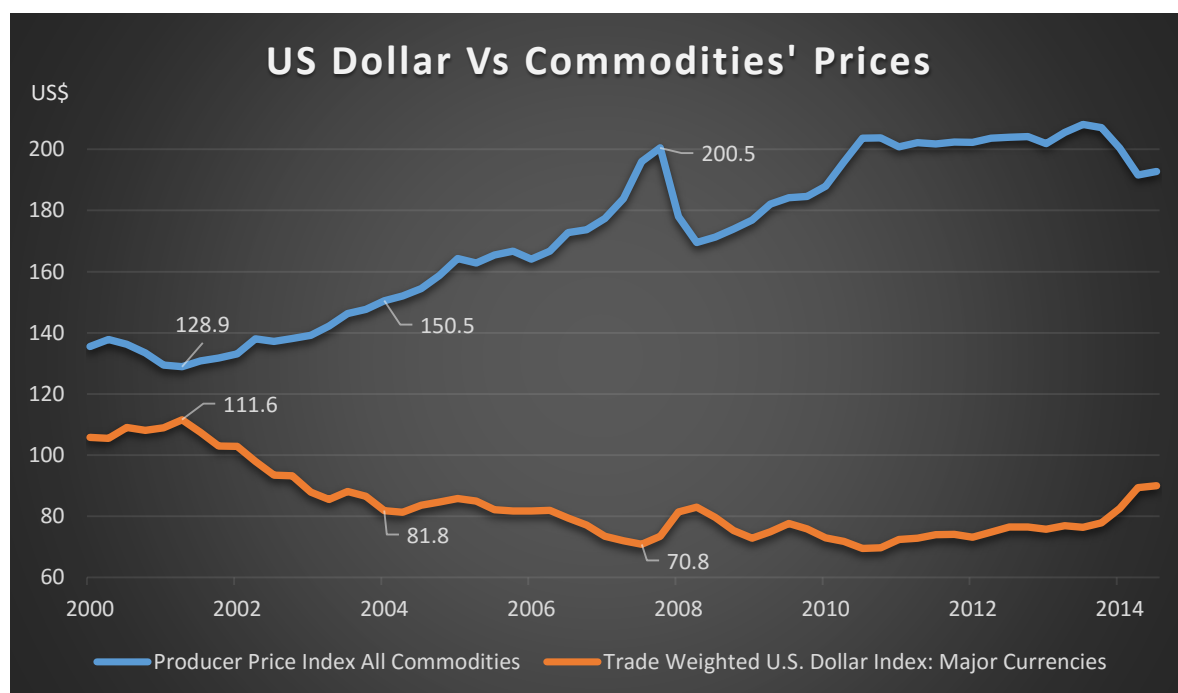
²⁷ "The total value of goods and services produced by a country in a year" (Cambridge University Press, 2015)

and favored an increase in price as the demand was relentlessly increasing. At some point, prices should have stabilized as the supply caught up on the demand, and maybe they should have stayed low after the financial crisis at the end of the decade. But the volume of transactions had grown when the crisis happened as shown on the Figure 1, mostly thanks to the more important investments that were made for almost a decade (Figure 2) leading to better capacities of infrastructure and people, thus pushing the sector up again after the crisis. This fantastic growth of both those economies is a considerable factor to the development of commodities and have participated in the revelation of the sector to the public opinion as those economies are important drivers of commodities and are still attracting significant foreign investments nowadays.

4.3 The weakened U.S. dollar

It is interesting to see how correlated the U.S. dollar currency and the prices of commodities are. As shown on the graph below (Figure 3), there is a strong negative correlation as the dollar drops throughout the 2000s, commodities' prices rise inversely.

Figure 3 – U.S. Dollar Vs Commodities' Prices



Sources: see appendix 4

Commodities are most of the time labelled in U.S. dollar and the currency had been strong for decades, maintaining U.S. dollar labelled commodities' prices down at the same time. However, 2002 was the year that saw the U.S. currency starting to tumble when compared to 7 other major

currencies²⁸. It was the year when the U.S. dollar reached one of its lowest levels in 2005 at \$81.83 and even lower in 2008 at \$70.84 as shown on the Figure 3 with the orange curve. Those numbers represent drops of the U.S. currency of respectively 26% and 36.5% compared to its level on 1 January 2002 at \$111.6 – its highest level of the decade. In the meantime, increases of commodities prices index were respectively increasing by 16.75% and 55.5% compared to the level of the index on 2002 at \$128.9 – its lowest price of the decade. The rationale behind this correlation is the fact that when the U.S. dollar is low, the commodities' prices rise, because more dollars are needed to buy the same quantity of the product than before the fall. The main reasons explaining the fall of the U.S. currency were the U.S. Federal Reserve cuts in the interest rates in 2001 and 2002 following the “Dot-com” economical bubble and the attacks of September 11 on the World Trade Center of New York. Also the country's rising deficit played a role in this fall (Colombo, 2014).

Although both indexes move almost simultaneously throughout the decade, the growth of the commodities price was faster than the fall of the U.S. currency, simply because the dollar is only one factor contributing to the boom of commodities prices amid other factors explained in this section of the paper.

4.4 The finances

An important element that influenced the 2000s commodities bubble is the new way it started to be financed. Indeed, the commodities have become quite popular amongst investors in order to diversify their portfolios. The investors were looking for investments unrelated to the stocks market and found the commodities market. Besides, pension funds have been regulated in a way that they had to diversify and the commodities was an excellent market for that, because not really related to the stocks market. They have since become one of the largest investors in long-term commodity investments (Colombo, 2014).

Another very important aspect of the way commodities have financially changed, is the exchange traded funds (ETFs)²⁹. Indeed, before the 2000s, casual investors could only place their money on commodity related stocks, such as companies involved in coffee. This system did not really allow investors to bet on commodities themselves, because those companies' performances are

²⁸ Euro Area, Canada, Japan, United Kingdom, Switzerland, Australia, and Sweden

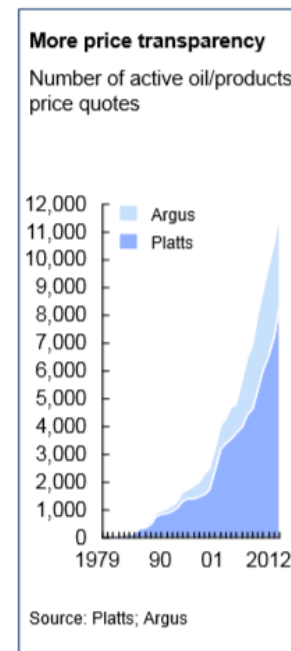
²⁹ “A fund that follows the level of share prices on a stock market, and that is also traded on a market” (Cambridge University Press, 2015)

more complex than just the performance of one product, and are not necessarily correlated to the commodities. Since the ETFs were instated, any investor has the possibility to put his money specifically on a commodity or another through stock brokerage accounts. This has considerably augmented the number of investors in the sector and has participated in the increase of capital flow in commodities and in their prices. For example, in 2011, the net flow of commodities was a gain of \$10 billion (Roy, 2012 ; Colombo, 2014).

4.5 Visibility

Figure 4 – Evolution of Price Quotes

Commodity trading has existed for centuries, simply because it is one of the most basic commercial practice; moving raw material from where it is available to where it is needed. However, technology has changed the business and has participated in the sector’s coming out with more price transparency and more visibility thanks to platforms such as the Platts³⁰ as shown on the Figure 4.



Until the last recession, people didn’t take high interest in the way commodities worked. But with technologies increasing the speed of communications, plus commodities’ 2000s massive market growth driven by China and India or the weak U.S. currency, and the rapid rebound of the sector after the 2007-2009 financial crisis, the consequence was that the world realized how important commodity trading had become worldwide. And when people started to look more

(Ascher, Laszlo, Quiviger, 2012)

closely to the sector, they found out that enormous amounts of money were involved. This has raised many questions, and people started to see commodities as a potentially harmful business to the real economy and have started getting interested by the commodities sector. The world has become much more cautious over institutions of big importance for the economy and this is why after the last decade’s financial crisis, people started to ask: have the commodity trading houses become “Too Big to Fail”?

³⁰ “Platts is a leading global provider of energy, petrochemicals, metals and agriculture information, and a premier source of benchmark price assessments for those commodity markets.” (Platts, 2015)

4.6 Timothy Lane

One of the first to speak out about this topic and ask the question of the systemic risk related to commodity trading firms was Timothy Lane. The Deputy Governor of the Bank of Canada gave a speech to the Chartered Financial Analyst Society of Calgary (CFA)³¹ on 25 September 2012, where he questioned whether commodity trading houses were systemically risky or not. This question did not occur to him randomly, as Canada is the most reliant developed country to commodities, with 20% of Canada's GDP coming from the commodities business and half of the country's exports being natural resources (Lane, 2012).

In his speech, Mr. Lane talked about the change in the form of commodities trading finance. Indeed, according to him, 80% of the commodity trading firms used to be financed by syndicated European banks before 2008, and this figure lowered to 50% in 2012. He said that since the 2000s, investment banks had been increasingly important to the commodity trading firms by lending money to them, and this meant that the commodities had started to be correlated to the financial system such as stocks³² and bonds³³. Moreover they became also central in the role of dealing themselves with the commodities derivatives³⁴ market and in taking part of the physical trading of commodities such as storage or inventories³⁵. He did not forget to mention that commodity trading firms have expanded as well, both in physical and derivatives (Lane, 2012).

Nevertheless, “deleveraging has been the most significant trend in the global financial system since the crisis – one that is likely to continue for some time.” (Lane, 2012) Timothy Lane said. Indeed as previously discussed in this paper, capital requirements of institutions (especially the financial ones) have been increased thanks to – or because of – regulations such as Basel III and the Dodd-Frank Act. This motivated banks to choose the other way and to gradually withdraw themselves from the commodities. It represents a challenge for commodity trading firms as they have to find other sources of financialization. Part of the solution for them is to finance themselves more importantly than in the past and this leads them to become bigger and more implicated in

³¹ “CFA Institute is a global, nonprofit member organization of financial analysts, portfolio managers, and other investment professionals.” (Chartered Financial Analyst Society of Calgary, 2015)

³² “part of the ownership of a company that people have as an investment in the form of shares”

³³ “An official paper given by the government or a company to show that you have lent them money that they will pay back to you at a particular interest rate” or “an amount of money that an organization or government borrows and promises to pay back on an agreed date with an agreed amount of interest, or the document that contains this agreement” (Cambridge University Press, 2015)

³⁴ “a financial product such as an option (= the right to buy or sell something in the future) that has a value based on the value of another asset, such as shares, or bonds” (Cambridge University Press, 2015)

³⁵ “the amount of goods and materials owned by a company at a particular time, including parts, products being made, and finished products” (Cambridge University Press, 2015)

the business, as they are putting more of their own money into it and taking more risks, meaning bolstering their profit as well.

Another change in the commodities' funding, is the trend of vertical integration³⁶ that has been observed on some big players of commodities. In fact, mergers and acquisitions have been an increasing attractive solution for commodity trading firms, allowing them to reduce risk through the supply chain and to generate more capital when it is needed. A good example is the case of Glencore which bought Xstrata – a big mining company – in 2013. The acquisition of Xstrata has put Glencore in the position of one of the most important player of the world trade in several minerals with a share of 25% of all trades in 2012 (Trunk, 2012). This trend is not a new business model, but is seen as a more robust one, and after the insecurities raised by the end of last decade's financial crisis and the progressive withdrawal of banks in commodity trading, it is one of the solutions to reinforce commodity trading firms' positions to the market and by the same occasion foster concerns among people who think that commodity trading companies are systemically important.

4.7 Banks; the commodity trading firms' competitors

The post 2007-2009 financial crisis era saw policymakers rush into making more and stricter rules/regulations such as Basel III or the Dodd-Frank Act. The main institutions concerned by those regulations are the financial ones and regulators keep an eye on potentially systemically important institutions. But some non-bank financial institutions are also considered as systemically important and are therefore monitored by regulators as well. In this context of tighter room manoeuvre for business, and the increasing visibility of commodity trading firms, banks saw an opportunity to make life harder for their competitors and seized this opportunity by encouraging people and politics into thinking commodity trading firms should be regulated as banks or other systemically important institutions.

To achieve such maneuver, the Global Financial Market Association (GFMA)³⁷ – a banking lobby association - asked Professor Craig Pirrong – professor of finance at the University of Houston - to conduct a research on the question of whether commodity trading firms were “Too Big to Fail”. Mr. Pirrong accepted the job and concluded in his report that commodity trading firms were not

³⁶ “A situation where a company buys companies that are its suppliers (upstream) and customers (downstream), taking over more stages of an industrial or commercial process”. (Cambridge University Press, 2015)

³⁷ “GFMA serves as a forum that brings together its existing regional trade association members to address issues with global implications.” (Global Financial Market Association, 2015)

systemically risky. Knowing the results of Professor Pirrong's researches - which was not what they expected - the board decided not to publish the paper. This shows that the strategy of the GFMA was to change commodity trading firms' image to the people and the politics, and to incite watchdogs to take a closer look to those firms so that they would have to hold the same capital requirements as banks, making business more difficult. Regardless of Professor Pirrong's findings, the GFMA went on and widespread the idea that commodity trading firms might be dangerous to the broader economy, and eventually, the Financial Stability Board took a closer look to the question. The Basel-based board asked whether commodity trading houses were systemically risky. As of 2015, different governments are still studying the topic and have not yet come up with an answer. But the sector did not wait and Trafigura – a commodity trading company - mandated Professor Pirrong so that he could write a white paper on the topic and publish his research in order to enlighten the general understanding of the topic and by the same occasion try to convince policymakers that commodity trading firms should not be regulated the same way banks or other systemically important financial institutions are (Interview with Mr. Pirrong, 2015 ; Blas, 2013).

5. Commodity trading firms do not pose a systemic risk

As mentioned earlier in this paper, the FSB and the IOSCO have come up with an assessment methodology for non-bank and non-insurer globally systemically important financial institutions. More specifically it was written to adapt the “Too Big to Fail” approach to specific sectors: finance companies, market intermediaries, investment funds, assets managers, other NBNI financial institutions. Commodity trading houses fall under the category of market intermediaries or as finance companies since commodity trading finance is also a practice of some commodity trading firms such as Trafigura through its assets management subsidiary named Galena for instance (FSB and IOSCO, 2015).

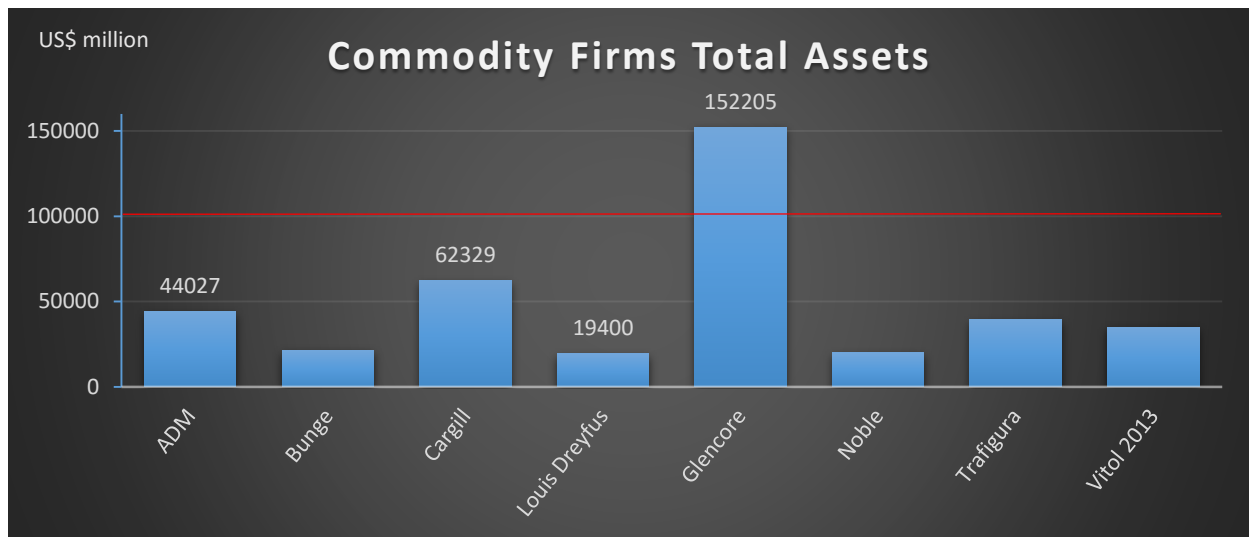
The methodology assesses institutions through 5 factors: the size, the interconnectedness, the substitutability, the complexity and the global activities (FSB and IOSCO, 2015). The next 3 points are a description of the links between those factors and the commodity trading firms with comparisons to the top 5 U.S. and the top 5 European banks as those institutions are the ones proven to be systemically important.

5.1 Size of institutions

The first factor is the size of entities. The bigger an institution is, the more assets and therefore liabilities³⁸ and equity it has and the more impact it potentially has on the stability of the financial system in case of financial distress. This is why, the FSB and the IOSCO assessment methodology has set a materiality threshold of “balance sheet total assets” at \$100 billion for finance companies and market intermediaries. Nevertheless, this threshold does not necessarily mean that firms above this threshold are systemically risky, it is just a limit that can identify very big companies from big companies, and trigger an automatic request for data collection for entities above this threshold. Companies under this limit of \$100 billion are also not automatically excluded from the list of potential systemically important institutions, it depends on other factors set by the FSB and the IOSCO.

³⁸ “The amount of money that a person or organization owes”. (Cambridge University Press, 2015)

Figure 5 – Commodity Firms Total Assets

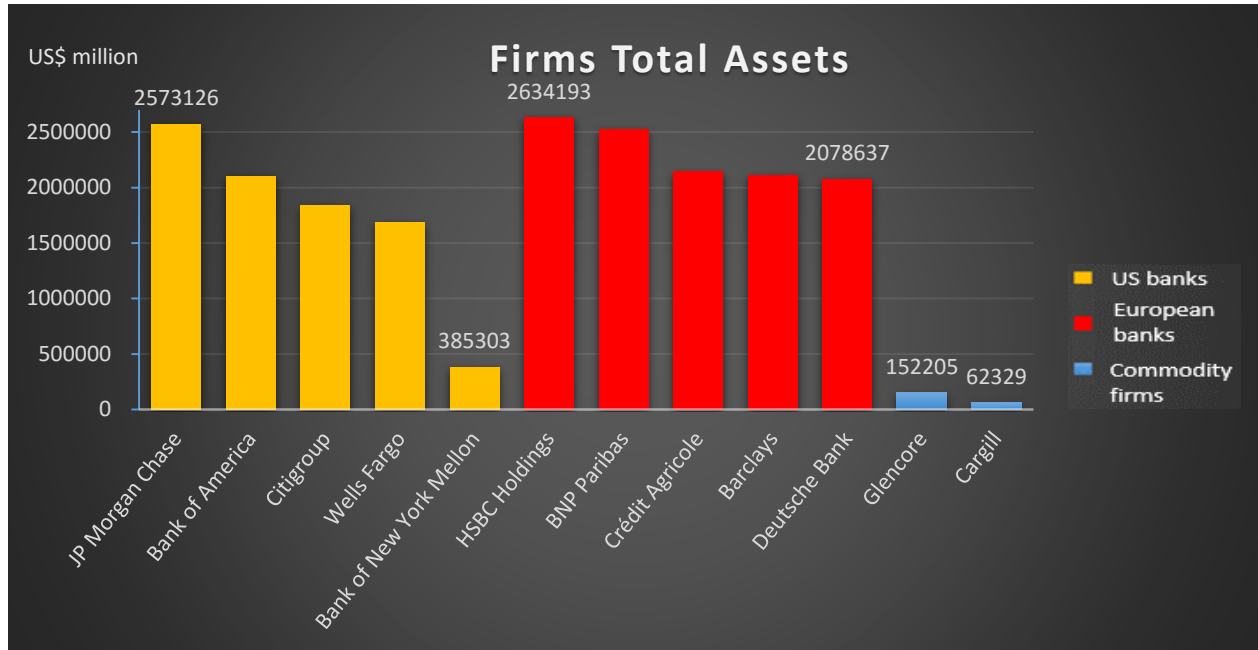


Sources: 2014 financial statements unless specified otherwise, see appendix 3.

Here is the top 8 commodity trading firms by total assets³⁹. As shown above on the chart (Figure 5), only Glencore has exceeded the red line of \$100 billion threshold reference set by the FSB and the IOSCO. Among all commodity trading firms, it is the only one considered big enough for automatic data collection. Moreover, it is obvious on this chart (Figure 5) that the difference between Glencore and the second company by total assets on this graph – namely Cargill - is huge. The latter holds \$62.329 billion of total assets, being only 41% of the total assets that the former holds at \$152.205 billion. The gap is even more blatant if the comparison is made with ADM which is 3rd on the list of top commodity trading firms by total assets. Indeed, ADM holds \$44.027 billion of total assets which barely represents 29% of Glencore’s total assets. After Gunvor in 2012, the 2nd lower firms on the list in terms of total assets is Louis Dreyfus with \$19.4 billion which is only 12.75% of Glencore’s assets. Moreover, the fact that Glencore is 1st on the list of commodity trading firms results of the acquisition of Xstrata – a big Swiss mining company – in 2013 by Glencore for the amount of approximately \$46 billion (Ferreira-Marques, 2013). Without this acquisition, Glencore would probably oscillate around the threshold of \$100 billion set by the FSB and the IOSCO and still remain alone near it, which demonstrates that it is rather difficult for commodity trading firms to reach this threshold, and therefore that companies of the sector are not that big according to the FSB and the IOSCO standards and in comparison to banks.

³⁹ The 9th on the list in terms of total assets is Gunvor. However, it might not be relevant to compare it with the rest of the chart, since the most recent data is from 2012 and many factors could have changed the growth of the company in 2 years, therefore Gunvor has been left out of the Figure 5. Also there is no official data regarding assets of Mercuria and Koch in 2014, this is why none of those 2 companies are included of the graph (Figure 5).

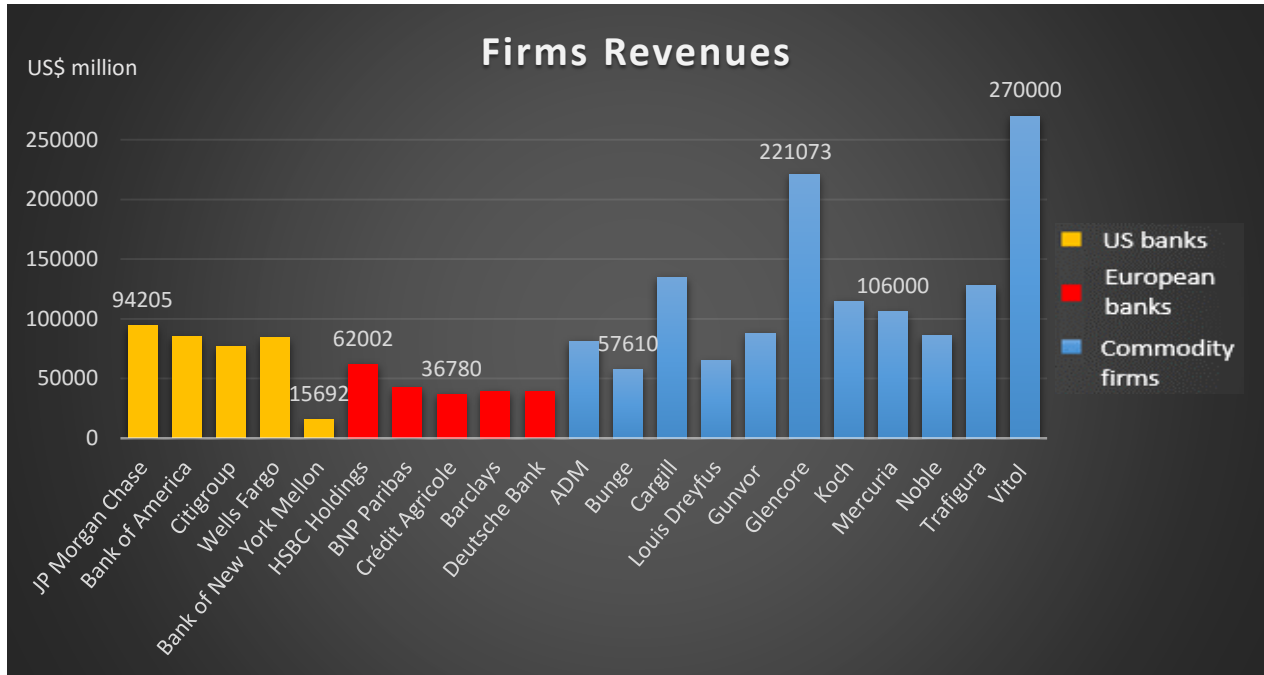
Figure 6 – Firms Total Assets



Sources: 2014 financial statements unless specified otherwise, see appendix 3.

Although the gap between Glencore (1st in terms of total assets) and Louis Dreyfus (8th in terms of total assets) is big, the numbers remained in the same order of magnitude compared to the threshold established by the FSB and the IOSCO report. But the most impressive difference comes here. Shown above is a graph (Figure 6) with the top 5 American, the top 5 European banks and the top 2 commodity trading firms with Glencore and Cargill in terms of total assets. All banks on this list are considered globally systemically important banks by the FSB and the IOSCO (FSB and IOSCO, 2014). HSBC Holdings (ranked 1st on the list by total assets) and JP Morgan Chase (ranked 2nd) each hold more than 15-fold the assets of Glencore and more than 40-fold the 2nd biggest balance sheet total assets in commodities – Cargill. In percentage, Glencore holds total assets as high as 5.78% of HSBC Holdings consolidated total assets. Despite the fact that Louis Dreyfus announced a total balance sheet of \$19.4 billion, it only represents 0.78% compared to HSBC Holdings. The Bank of New York Mellon – 10th on the list and 5th in the U.S. – holds assets twice the value of Glencore’s total assets. Even the 10th on the list of U.S. banks by assets – TD Bank U.S. Holding – holds \$223 billion, still more than Glencore’s total assets. The aggregate total assets of the top 5 U.S. and the top 5 European banks amount to a gigantic \$20.094 trillion, whereas the aggregate of commodity trading firms’ total assets is at \$513.5 billion - about 40-fold less than banks. The reality is obvious, banks and commodity trading firms do not play in the *same* league.

Figure 7 – Firms Revenues



Sources: 2014 financial statements unless specified otherwise, see appendix 3.

Even though banks hold very large total assets, the rapid growth of commodity firms during the 2000s helped developing the sector very quickly, whereas the banking sector has been mature⁴⁰ for a long time now. Despite the fact that commodity trading houses hold much less total assets than banks do, they are able to generate revenues⁴¹ that are higher. Indeed, the average turnover⁴² of the top 10 commodity trading firms by revenues is at \$129.4 billion – though a bit biased by the large revenues of Vitol at \$270 billion, while the average revenues of the top 5 U.S. and top 5 European banks is at \$57.6 billion. Those results are not so surprising because the core activities of both sectors are quite different. But also because of these differences, revenues is not a great indicator of performance for commodity firms, because banks have more activities than commodity trading companies and practice higher margins⁴³, resulting in differences in the income statements of those companies.

⁴⁰ “A mature market, industry, or product has stopped growing or developing as fast as it did when it was new”. (Cambridge University Press, 2015)

⁴¹ “Money that a company receives, especially from selling goods or services”. (Cambridge University Press, 2015)

⁴² Synonym of revenue

⁴³ “The difference between the total cost of making and selling something and the price it is sold for”. (Cambridge University Press, 2015)

Indeed, displayed on the Figure 8 with the thin white line related to the right vertical axis is the firms net margin which can be calculated by dividing firms net income (Figure 8) by the turnover (Figure 7). In spite of the fact that Glencore has the 2nd highest revenues at \$221 billion, which is 14-fold the revenues of the Bank of New York Mellon, it does not mean that Glencore is doing better than this bank and as shown on the following chart (Figure 8) Glencore is actually slightly under the Bank of New York Mellon in terms of net income with a profit of \$2.44 billion for the commodity firm against \$2.65 billion for the bank. Those differences become even more obvious when comparing the net profit margins of those firms, Glencore being the 3rd commodity trading in terms of profitability with 1.1% of net profit margin, which is far away from the 16.89% performed by the Bank of New York Mellon in 2014 - 4th bank of the list in terms of net profit margin. The most striking difference comes from the comparison of the 1st of each sector by net profit margin which are Wells Fargo at 27.34% and ADM with 2.77%, being a difference of net profit margin of almost 10-fold in percentage. Those figures really demonstrate that banks practice high margins while commodity trading is about dealing with low margins and high volumes and as explained earlier in this paper, volumes and prices have risen at sky high record levels so that the situation has been exceptional for the past 15 years which backs up even more the difference between banks and commodity trading houses.

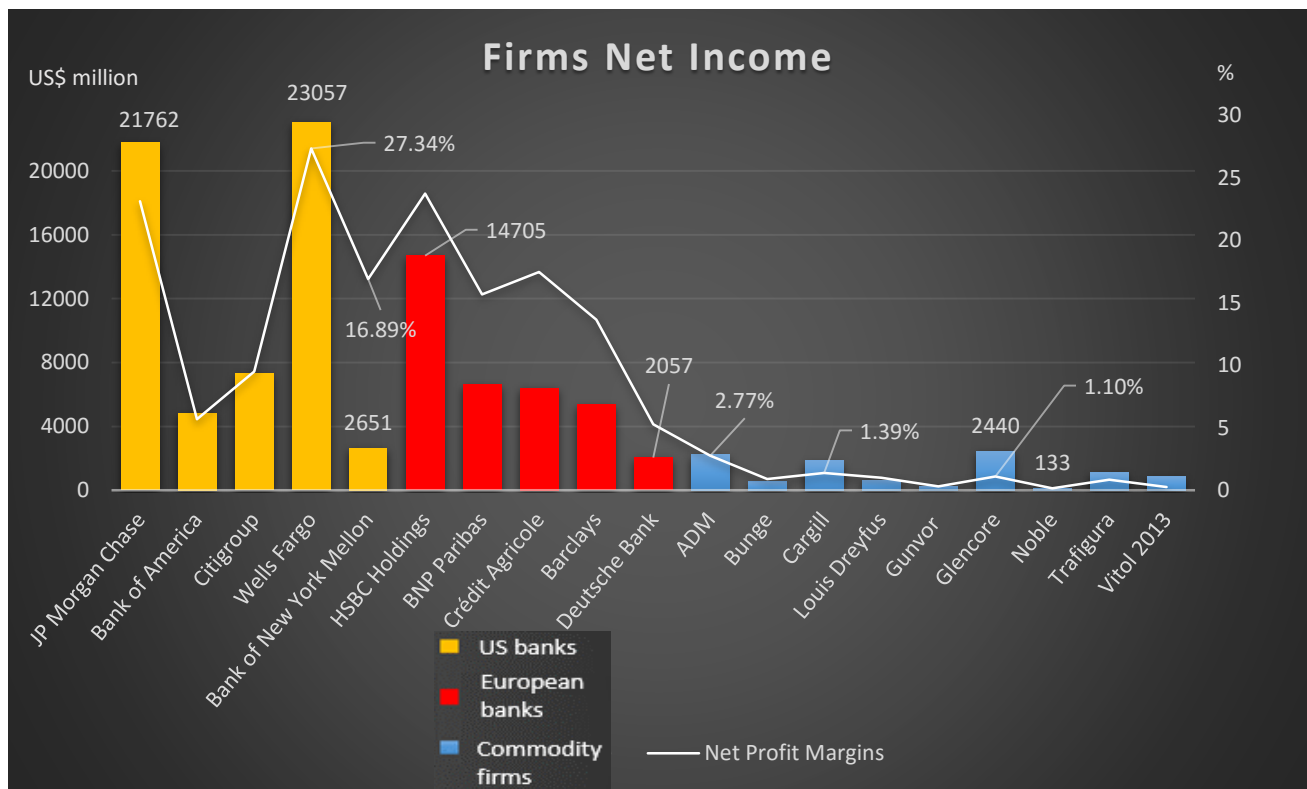
Moreover, vertical integration also generates revenues. Vitol, Glencore or Cargill are all quite asset heavy⁴⁴ and have all tremendous amounts of revenues, but they also support tremendous amounts of costs and it is clearly noticeable in the net income that banks are able to generate, versus the net income that commodity trading firms are able to generate. In fact, the aggregate net income of banks is at about \$95 billion while commodity trading firms' aggregate net income is as high as \$10 billion – almost 10-fold less than banks, but the aggregate banks revenues is at \$576 billion and the aggregate revenues of commodity trading houses is at \$1.25 trillion representing a bit less than 3-fold more. By comparing the revenues chart (Figure 7) with the net income chart (Figure 8), there is a negative correlation illustrating those facts.

Only the Bank of New York Mellon and the Deutsche Bank have similar net income to the 3 highest net income commodity trading companies - Glencore, ADM and Cargill. All the other banks on this graph (Figure 8) have at least twice the net income of Glencore - 1st commodity trading company in terms of net income – and up to almost 10-fold more for Wells Fargo with \$23 billion. The comparison becomes resounding Wells Fargo's net profit is put (ranked 1st in terms of net income

⁴⁴ Company is more vertically integrated, as opposed to asset light

among banks) alongside Noble’s net income (ranked 9th in terms of net income among commodity trading companies), with a difference of about 18-fold less than the behemoth bank. Again it is obvious that commodity trading houses do not compete with the size of global systemically important banks and, regarding this criteria, should therefore not be considered as “Too Big to Fail” as it is unlikely that the failure of one or several commodity trading houses would have the same impact on the financial system as those G-SIBs’ failure.

Figure 8 – Firms Net Income



Sources: 2014 financial statements unless specified otherwise, see appendix 3.

5.2 Interconnectedness and substitutability

Second and third factors of the FSB and the IOSCO methodology for identifying NBNI G-SIFI are the interconnectedness and the substitutability of commodity trading firms. The more counterparties an institution has, the more likely its failure can create a chain reaction and harm the financial system as a whole. And if, on top of that, there are not enough players able to take over⁴⁵ the failing institution(s)' activities as a substitute and provide a similar offer on the market, it could even aggravate the contagion of failing institutions and, thus, the systemic risk.

However, in this sector, one does not go without the other, and a very important point of commodity trading is the need of liquidity in terms of players, futures contracts, customers, etc. The more actors there are on the market, the more deals can be done and the less risky it is to trade because options are open for the different parties, thus the more connected entities are, the more robust the sector is. Each commodity sectors are relatively well fragmented in terms of players. Many commodity trading companies have existed for a very long time, like Cargill which was created in 1865 (Cargill, 2015), conversely to other players who have taken advantage of the sector's recent boom like Mercuria which is only 11 years old, but already one of the major players in commodities (Mercuria, 2015). The result is the high number of companies involved in commodities, especially in Switzerland where 500 companies are involved in the commodities' sector. In energy and more specifically oil for example – the most traded commodity - Geneva counts for one third of the world's daily traded Crude Oil and related products (STSA Swiss Trading and Shipping Association, 2015). Among those oil traders, a lot of companies are involved in the business and as shown in the Figure 9, some companies primarily involved in the energies are economically very powerful such as Glencore, or Mercuria, hence they might be able to resist any financial distress for a while. Yet, in case of bankruptcy by some entities, and as long as they do not all fall at the same time, it also makes them substitutable as those powerful companies have the means and the infrastructure to take over a failing company. On top of that, most of the trading companies are geographically close and are based or have an office in Switzerland, Singapore or in London, which could facilitate any takeover or replacement of the activities of a failing commodity trading house (STSA Swiss Trading and Shipping Association, 2015).

⁴⁵ "To take control of a company by buying enough shares to do this". (Cambridge University Press, 2015)

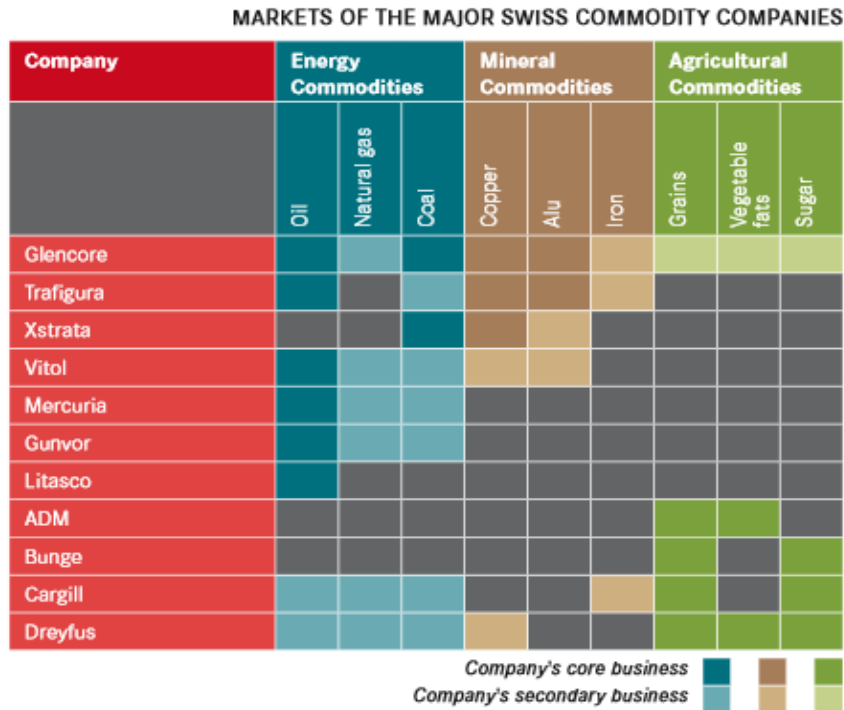
Another advantage of the commodities market lies with the substitutability of the assets involved. If an oil trading company wants to take over another failing oil trading company it can buy it out and keep the assets the failing institution held or resell them for example. In case of a buyout⁴⁶ of an asset heavy company which owned a refinery or a storage house, the purchasing company could also decide to use those assets for its own business and advantage and this also demonstrates commodity trading firms' strong substitutability.

Furthermore, the diversification within commodity trading companies also strengthen their position as it is not so common to see a company such as Litasco dealing with only one commodity; usually companies trade several commodities often substitutable from each other as illustrated in the Figure 9. Because the market always need commodities, this means that if a company such as Mercuria were to lose money on one commodity like Oil, it might offset the loss with the other commodities traded internally like Natural Gas and Coal. Some firms go even beyond trading the same type of commodities and have a very diversified portfolio⁴⁷, such as Glencore which trades all types of commodities displayed on the Figure 9. This allows Glencore to be even more resilient in case of financial issues as it is very unlikely that all types of commodities would pose problems at the same time. Of course the other side of the coin is the fact that Glencore plays a central role in this sector as it is so prominent on the market and some might argue that this kind of companies are too central. But this also makes it the perfect candidate to partly or fully absorb any case of bankruptcy related to commodities it already trades by being able to take over a company's activities or to propose a similar offer. In addition, it is not the sole actor to have a high diversification in its activities with players like Louis Dreyfus or Trafigura also capable to play such role in any case of severe disruption on the market.

⁴⁶ Synonym of take over

⁴⁷ "A collection of different investments that are owned by a particular person or organization". (Cambridge University Press, 2015)

Figure 9 – Markets of the Major Swiss Commodity Companies



Source : (Trunk, 2012)

Another point regarding the interconnectedness of companies is the role of commodity trading firms in the credit chain. Commodity trading firms do practice shadow banking such as Trafigura through its subsidiary Galena Assets Management, but they are not as important and central as banks in this matter. In fact, although commodity trading do supply credit to their counterparties, it is not their core business and they often borrow money themselves to banks to issue those credits. Whereas banks are the main credit supplier of the economy and if they fail to provide credits to their customers, especially to companies, it can create a contagion through the economical chain and a global economical slowdown. They are therefore also less complex than banks in this sense.

Although commodity trading companies are very interconnected, the nature of this business makes them strong this way as they can rely on each other to make business and also to take over if necessary since a lot of players are involved in this market. The substitutability of the products traded and the second hand utilization of assets such as refineries or storage facilities as well as the diversification within most companies are all factors that makes those companies very substitutable and thus not systemically risky.

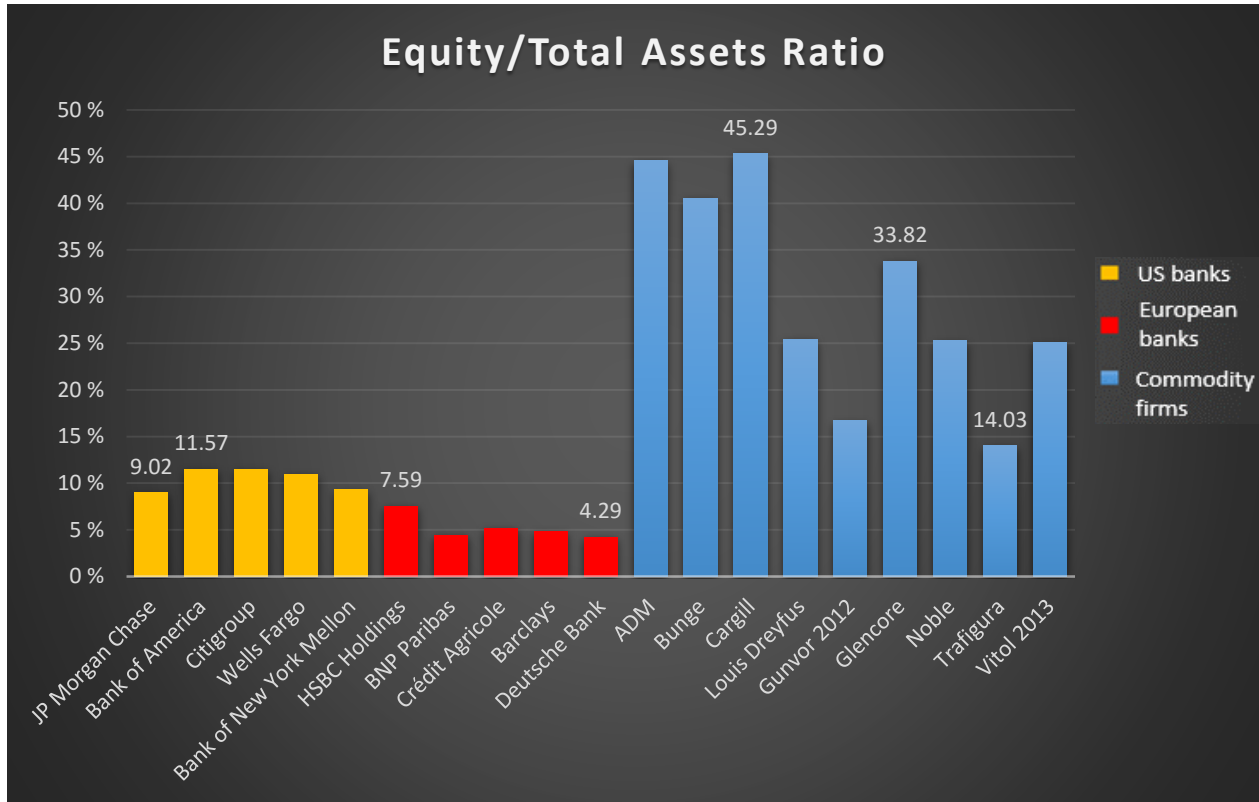
5.3 Complexity and global activities

Fourth and fifth criteria of the FSB and the IOSCO for assessing whether a finance company or a market intermediary is systemically important are the complexity of companies and their global activities' reach across jurisdictions. The more complex an entity is because of its structure, internal rules and manner of conducting business, the more costly and difficult it would be to address the failing company's issues. Also, if an entity has counterparties and ramifications beyond its own country, its impact on the global financial system will be even more important in case of failure.

Meanwhile it is obvious that banks, especially large ones, and commodity trading firms are global and conduct businesses beyond the borders of their own countries, it is more difficult to say precisely which institutions are complex and which are not. Nevertheless, the size of companies can be a good indicator and as demonstrated earlier, banks are really big compared to commodity trading firms, so in this regard it is very likely that they are more complex. Also it is expected that the number of branches could increase the complexity of a firm, because the more a company has branches, the more its structure is widespread and therefore difficult to manage. This point makes banks again very much more complex than commodity trading firms as UBS, for example, has about 300 branches in Switzerland alone and is not even on the list of the top 10 banks in the world by total assets, while Glencore has 90 offices worldwide and is the biggest player in commodity trading firms in terms of assets (UBS AG, 2015 and Glencore, 2015).

Another indicator of the complexity of those institutions would be the structure of their balance sheets. Indeed, one of the main reasons banks are systemically important is because they practice liquidity or maturity transformation. They hold depositors' money which is a short term debt and they engage this money in longer, less liquid, maturity investments, assuming that not all depositors are going to withdraw their money at the same time; they finance long term investments with short term debts. This has the implication that banks expose themselves to what was described earlier in this paper as a bank run. If all depositors do withdraw their money at the same time, this would precipitate the fall of the banks in question because those banks would not have enough funds to reimburse their depositors as their money is invested in longer maturity investments (Interview with Mr. Pirrong, 2015).

Figure 10 – Equity/Total Assets Ratio



Sources: 2014 financial statements unless specified otherwise, see appendix 3.

One of the solutions proposed by implementing measures/regulations such as Basel III or the Dodd-Frank Act to balance the liquidity transformation risk and the systemic importance of companies is to increase their equity ratio, which equals to reduce their debt and also means to reduce their leverage ratio. On the graph shown above (Figure 10), this ratio of the equity divided by total assets, illustrates how strong the balance sheets of the firms are. The greater the percentage, the stronger the institutions are as they hold more equity, meaning that they are less leveraged and less indebted. Here the difference between the top 10 commodity trading houses, the top 5 U.S. and the top 5 European banks by total assets is flagrant. Even Trafigura with the highest leverage ratio (equal to the lowest equity/total assets ratio) among commodity trading companies has a 2.5% better ratio than the top bank of the list in terms of equity/total assets – Bank of America. The percentage ratio is even more striking when comparing the Deutsche Bank with Cargill which has an equity/total assets ratio more than 10-fold better than the bank in terms of percentage.

One of the main reasons behind this big difference is that commodity trading firms are more balanced, because there is scarce mismatch. They usually fund short-term assets like a cargo of rice with short term debt like a letter of credit from a bank for a specific duration and secured by the goods bought. Thanks to the receivables cashed in following the sale of those goods, they are able to quickly repay the short term debt to their bank. Also long term assets are usually funded with long term debt. Mr. Hiler shared his opinion regarding this topic and said: « It feels like really classical business model, in the sense that there are assets, physical, you're not only in financial materials, there are actual physical goods, at many locations on top of that. No I do not believe that there is a local risk, this I cannot picture it in another way than just some losses [in case of failure of commodity trading companies]” (Translation of interview with Mr. Hiler, 2015).

Another factor showing the fact that commodity trading houses have a stronger financial stability is that they are not subject to lose money because of a loss of value on the market. Indeed, as mentioned previously, commodity trading is about high volumes and low margin and if there is a financial crisis, most commodities would drop in price as it was the case in the 2007-2009 crisis. The first safeguard is the fact that they are hedged against the price, meaning that for physical goods, they have futures contract more or less equal offsetting any surprises in price movements. However, because commodity trading firms need credits to do business, if a commodity's price is down, the trading company will have easier access to financing the purchase of the commodity since the company is going to need less money to invest, and therefore, not only will it continue doing business, but it is going to do it very well.

Granting that both most banks and commodity trading firms have worldwide activities and ramifications, it is clear that commodity trading companies are less complex given the fact that they are smaller, with less offices, and that they have stronger balance sheets. This is why regarding those criteria they should again not be considered as “Too Big to Fail”.

6. Conclusion

Behemoth banks went bankrupt or got bailed-out because of the 2007-2009 financial crisis and the consequences were so significant that the public opinion and regulators have become more aware and more wary over big institutions, whether they are financial or not. Quietly, the commodities market has been strongly developing, driven by the impressive growth of China and more modestly India, and also because of the U.S. dollar currency loss of value in the 2000s, among other factors. This fast development helped the sector behave remarkably well and recover from the crisis almost as if it never happened, but it also got commodity trading firms under the spotlight at a bad timing. Without having really established whether or not those firms were systemically important institutions, policymakers rushed into the easy path of over-interventionism as a reaction of the recession and they have initiated the process to regulate more strictly the sector. A multitude of laws and standards such as the Capital Requirement Directive IV have started to be implemented, yet their impact on commodity trading firms remain unclear as uncertainty and ambiguity are key words to relate them to commodities. However, those regulations and measures have not yet been implemented and they should not.

The market of commodities has grown considerably and its financialization has been changing since the last financial crisis, leading to more risks taken by commodity trading firms as they invest more of their own money. Nonetheless, compared to systemically important banks, those companies are not big, neither in terms of total assets, nor in terms of net income or net profit margin. Although their activities have global extensions, they also have simpler and smaller structure, making them easier to dismantle or to save than systemically known institutions. They are interconnected but it is a strength in this sector as the more players there are on the market, the more deals can be concluded, hence the more options dealers have, which is a great mean to risk mitigation. In addition they are easily substitutable because there are many actors on the market capable of offering similar services as a failing company and with the financial power to take over if necessary. Also commodity trading firms' assets are liquid and easily substitutable because commodities or fixed assets used for upstream, midstream or downstream activities are needed and they are therefore easy to sell or to reutilize.

More regulations would increase costs in a sector that is already borderline in terms of margins. If they do get stricter for commodity trading companies, most of the costs coming from more interventionism would most likely be passed on to the producers and the customers.

Utilizing regulators' methodology for identifying systemically risky institutions, this paper clearly demonstrates that commodity trading houses are not "Too Big to Fail" and should therefore not be regulated as such.

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Appendix 1: Interview with Mr. David Hiler

Mr. David Hiler is the former minister of finances in Geneva. His political and the economical knowledge were very useful to this research. He kindly accepted to answer some questions on the terrace of the Grütli Café on 23 June 2015.

Parlez-nous un peu de votre parcours personnel et professionnel s'il vous plaît.

De formation je suis un historien économiste. J'ai commencé une carrière tout à fait classique d'universitaire. Et puis ensuite, la vie a fait que j'ai fait beaucoup de politique, que j'ai eu aussi un certain nombre de responsabilité, notamment en 2000 à la Banque Cantonale [Genevoise] après le grand crash et de fil en aiguille j'ai été conseiller d'Etat. J'ai fait pas mal de trucs différents quand même. Le peu que je sais sur le négoce international. ... et parce que les sociétés de négoce à Genève étaient au cœur de la problématique des statuts particuliers d'entreprises ce qui m'a amené à suivre l'évolution du secteur, mais qui est assez rapide et spectaculaire. C'est un secteur qu'on ne voit jamais en fait ; il est très peu visible. C'est difficile de dire si le secteur est surendetté ou pas surendetté, on ne voit jamais totalement. Voilà, mais c'est par ce biais-là.

Pouvez-vous nous parler un peu de la notion du « Too Big to Fail » ?

Alors, au niveau bancaire, ça paraissait assez claire la raison de le faire et c'était d'autant plus claire qu'on en a fait l'expérience grandeur nature. C'est-à-dire, à un moment on s'est retrouvé dans une situation où des établissements très importants peuvent avoir des stratégies d'investissement suicidaire et elles ne meurent pas parce qu'autrement il y a tout le secteur qui tombe, ce qui est assez dangereux en économie de marché fondamentalement, parce que celui qui fait mal si on est en économie de marché, fondamentalement il doit mourir, c'est ça la règle. Si il ne meurt pas, il y a toujours quelqu'un qui paye à sa place, après c'est à l'idéologie de dire qui paye, mais finalement ce sont les gens qui payent. Et ils le payent soit en s'appauvrissant soit en payant. Donc c'est bien ce qui s'est passé, donc là à l'évidence, on parle d'un certain nombre de règles qui ont été introduites dans les années 30 un peu partout notamment aux Etats-Unis. Il y a eu des régulations dans les années 80, et la marge de manœuvre a été plus grande. Une bonne base des régulations, c'était des régulations américaines qui consistent à séparer les investissements de la banque de crédit, ce qui évite évidemment de ramasser beaucoup et de mettre dans des secteurs dangereux, c'est-à-dire qu'ils aillent à ceux qui font de l'investissement,

on a utilisé pour l'UBS l'expression de la création d'un hedge fund interne. Ça devient problématique vu l'origine des fonds. Donc là il y avait besoin, ça a été fait partout selon des règles différentes, ce n'était pas la même chose aux Etats-Unis, en Suisse ou dans l'Union Européenne. Ce qui peut être joué ce sont les fonds propres quelque part, pas plus. La régulation n'a pas fait un pli d'ailleurs. Alors évidemment comme toutes régulations, vous limitez les périodes ascendantes, puisque c'est une assurance quelque part ; vous essayez de limiter des croissances qui soient fondamentalement mal saines pour éviter des chutes. Donc dans le cas des crédits immobilier américains, là au fond le danger était venu comme ça, c'était des opérations hautement spéculatives, moralement hautement dégueulasse soit dit en passant, donc on pensait qu'en titrisant on arrivait à diluer le risque et donc que le risque ne serait pas dangereux, et puis en fait ça la rendu épidémique. Et là évidemment ça donne à réfléchir puisque tout le monde est parti là-dedans. Je m'étais toujours demandé si les banques avaient fait les frais de ce qui leurs étaient arrivé, mais à mon avis rien puisqu'elles s'étaient couvertes au 14ème degré. Donc là, il y avait à l'évidence besoin de faire quelque chose parce qu'une fois que ça s'est passé, vous ne pouvez pas le faire 2 fois, le système s'écroule. La preuve c'est que tous les états n'en sont pas ressorti, ce n'est pas fini en fait, on est toujours dans l'après 2008, donc ici ça s'est passé je dirais de façon assez organisée, et puis ça vise les établissements qui sont manifestement ne serait-ce que par leur dimension géographique et leurs tailles de bilan par rapport à ce qu'est la Suisse. Après la discussion, c'est est-ce qu'on a trop régulé les établissements moyens ; qu'est-ce qu'on va faire avec la Banque Cantonale de Zurich ou les principales Banques Cantonales, ou Raiffeisen s'ils continuent à croître à la vitesse où ils croient. Mais ce n'est pas très intéressant en fait, parce que ce qui est intéressant c'est la question des géants en fait. Avec quand même un truc qui est assez intéressant dans cette affaire, c'est que finalement ce sont vraiment des banques, soit des banques d'investissement pur ou des banques universelles qui sont à l'origine du problème et pas du tout des fonds spéculatifs et ça c'est un problème. Vous voyez dans le système Suisse chaque fois que la Confédération décide quelque chose, les cantons sont consultés systématiquement donc on a dû en faire 3 ou 4, de différentes variantes, ce sont des sujets qui sont très politiques et partiellement techniques. Voilà en gros sur ce dossier le Conseil d'Etat [genevois] avait toujours soutenu la position du Conseil Fédéral qu'il fallait faire quelque chose. Nous on était quand même un peu tenté par la séparation stricte. C'est-à-dire pas seulement la capacité de séparer après coup, mais plutôt de dire on fait quand même à l'américaine [banque d'investissement séparée des autres activités bancaire]. Parce qu'évidemment, les opérations de spéculation à très haut risque, ça fait partie de la nature humaine. Ça ne sert à rien de les interdire, autrement il n'y aurait personne au casino... . Maintenant, c'est typiquement quelque chose qui va si on le fait avec son

argent, ça pose peu de problème si quelqu'un veut prendre des risques, il peut soit s'enrichir, soit s'appauvrir, il n'y a pas d'effet global. Quand vous levez des fonds pour faire ça [grimace]. Parce que les premières grandes spéculations, c'était ça déjà, c'était des oignons de tulipes en Hollande au 17ème siècle, c'est quand vous commencez à ramasser comme ça de l'argent sur des spéculations et puis à un moment il y a toujours trop d'argent, par rapport à ce qui peut ressortir. Et puis toutes les spéculations sont des compagnies des Indes, ou des choses comme ça en France, en Angleterre, c'est toujours ça, c'est l'effet moutonnier, tout le monde veut la même chose, et c'est toujours qu'on collecte, quand même, c'est la collecte des fonds qui fait ça. Parce que si vous êtes dans un truc classique d'armateur ou chacun met sans la cargaison, ça ne s'est jamais passé, ce n'est pas possible, c'est des affaires l'un après l'autre. On peut s'enrichir, mais c'est des affaires l'une après l'autre, c'était à haut risque, mais ça n'a pas beaucoup changé finalement, ce qui est frappant quand vous voyez ces opérations, à quel point ça ressemble basiquement aux opérations du capitalisme commercial du 17ème - 18ème siècle. Mais ce sont des mécaniques peu dangereuses tant qu'on ne collecte pas de l'argent du publique, tant que ça ne s'approche pas de quelque chose qui est soit du dépôt, soit de l'action. Après vous avez trop d'argent dans le circuit et trop de gens qui y perdent, parce que la majorité finit toujours par perdre. Le risque il est toujours là ; dans n'importe quel jeu d'avion, c'est toujours celui qui arrive en dernier qui perd, ce n'est pas celui qui arrive en premier et ceci qu'il soit immobilier, qu'il soit commercial, qu'il soit hypothécaire. Et l'autre chose qui est d'ailleurs assez surprenante dans ces affaires, c'est que c'est qu'en fait la catastrophe est arrivée sur quelque chose qui n'est pas très complexe sur le plan financier. Les crédits pourris aux Etats-Unis, c'est une opération très basique, c'est des hypothèques données de façon dangereuse et le fait qu'effectivement il n'y avait rien dessous. C'est rien que du très classique. Ce qui n'était pas classique c'est la titrisation derrière par contre, c'est-à-dire de dire qu'il ne va rien nous arriver parce que de toute façon si ça tourne mal, c'est tellement dispersé, c'est tellement dilué [qu'il ne va rien se passer de grave]. J'ai parlé avec beaucoup de gens qui étaient sûr de ça. Ils n'étaient pas tous sûr de ce que disait [Marcel] Ospel : « de toute façon l'immobilier américain ne peut jamais baisser », c'est comme une croyance religieuse. Mais par contre, l'idée qu'en se protégeant comme ça en couche successive, c'était une protection et pas une épidémie, ça c'était une idée qui était retenue par des gens qui étaient assez intelligents. Donc ça c'est pour la partie banque, à mon avis en Suisse elle est satisfaisante. Je pense qu'au niveau mondial elle est beaucoup plus solide aussi. Maintenant, il faut quand même savoir une chose, c'est-à-dire qu'il est solide jusqu'à la prochaine fois. Parce qu'à chaque fois ça s'est passé comme ça [c'est cyclique]. On prend les crises d'abord, puis on invente les régulations après. On avait vu quand même qu'avec la précédente crise, dans les années 30, ce

qui avait été mis en place, à cette période et quand même dans l'immédiate après-guerre, parce qu'une bonne partie du secteur financier était nationalisé, on avait eu une décennie assez tranquille en fait. Et même là où c'était finalement peu étatisé, la régulation était suffisante finalement ; chez nous c'était très très peu étatisé. Par contre ce qu'on a oublié c'est que les premières chaînes de banques qui ont pété, c'était les caisses d'épargne américaine dans les années 80 et qui n'étaient pas publique au sens stricte, qui étaient semi-publique. Mais donc après le monde change et puis il y a eu des régulations. Voilà, donc pour cette partie-là, je dirais que c'était une partie assez tranquille assez consensuelle, le seul débat qui est resté ouvert, c'est est-ce qu'on aurait dû aller plus loin dans la séparation ou est-ce que la séparation qui va venir à posteriori suffit ? (parce que c'est en fait ça qui a été décidé).

**Que pensez-vous du Hub de négoce de matières premières qui se trouve à Genève ?
Craignez-vous ce Hub ?**

Non, je ne pense pas. De toute façon, s'il y avait des aspects à craindre, ce n'est pas nous qui sommes du mauvais côté. Le hub est venu pour quelques raisons historiques, il y a une tradition de négoce. Il s'est développé en 2 étapes, dans les années 50 déjà et puis avec le pétrole de l'Est, pour ne pas dire le pétrole russe de façon beaucoup plus forte sur d'abord des avantages fiscaux. Il y a trois avantages qui ne sont pas négligeable. Ensuite l'existence d'un savoir-faire sur le crédit transactionnel, ce qui est une branche assez difficile, ce qui est une branche plutôt française à la base. Et pour diverses raisons que je ne connais pas, ce n'est pas Paris qui est devenue la capitale [des commodities], c'est venu ici, même si ce sont des banques françaises qui maîtrisaient au départ le mieux [le crédit transactionnel] alors que c'est une science plutôt française à l'origine. Et puis évidemment, il y a certaines conditions générales de marché au niveau professionnel ; c'est relativement facile d'avoir suffisamment de gens qui font ce métier. Alors le crédit est un élément extrêmement important, parce qu'on voit que l'activité ne se fait pas n'importe où non plus. Ceci dit il y a toujours d'autres possibilités sur la partie Europe. On a l'impression que ça s'est construit comme ça, mais enfin ce n'est pas le cas, il y a eu des étapes, il y a eu des sociétés américaines, d'abord c'était des sociétés plutôt qui venaient d'Afrique en réalité. Mais ça s'est construit assez lentement, puis après il y a eu l'explosion avec les sociétés qui négocient le pétrole. Ce qui est assez frappant, c'est qu'on ne sait jamais rien dessus en fait, c'est difficile de faire des statistiques d'emploi parce que la manière dont sont faites les statistiques en Suisse permet très mal de les faire ressortir. C'est très difficile de les isoler du commerce de camion par exemple. Et puis il y a énormément de petites structures contrairement [à d'autres

activités]. Je me rappelle en effet de quand on a commencé à essayer de délimiter les emplois concernés directement, en cas de départ [des négociants de matières premières de Genève]. Alors c'est terriblement difficile parce que d'abord quand les études sont plutôt promues par le secteur, on y met facilement les équipes de crédits, mais au sens strict, vous ne pouvez pas les compter 2 fois. Et vous avez la même chose avec la SGS. Au sens strict, ils ne font pas du négoce et ils sont essentiels dans la chaîne. C'est un secteur qui est relativement difficile à voir, en plus les structures sont assez compliquées, et il a beaucoup changé surtout parce que les premières fois que j'en avais entendu parlé on avait souvent encore du négoce qui était un bras négoce, appuyé sur une société de production. Et puis après c'est ce qui est venu quand même de façon assez massive, encore plus sans doute dans les sociétés zougaise que je connais moins que [celle d'] ici, c'est ce qu'on appelle l'intégration vertical. C'est-à-dire qu'on peut se demander, même si ça peut encore s'appeler négoce, vu le nombre d'installation de production et de raffinage. Et là ça devient un peu plus compliqué alors, parce que tant que vous êtes dans du négoce pur, la question se joue sur 2 choses en fait, ces sociétés ont besoin de crédits à court terme parce que leurs jobs c'est de déplacer de la marchandise d'un endroit où elle ne coûte pas cher à un endroit où elle coûte cher. Un pétrolier c'est quand même une mobilisation assez forte. Donc ce sont des opérations qui ont toujours un risque, c'est le risque de la disparition de la contrepartie, sous l'eau ou par vol même. Donc ça se paye relativement cher, ça exige une équipe assez savante, mais ce n'est pas de risque systémique ça c'est sûr, parce qu'en 45 jours vous n'allez pas faire de risque systémique. Ça c'est un modèle assez classique, et c'est ça qui se fait ici et c'est pour ça que je connais moins l'autre. Parce que plus les sociétés sont basées sur des actifs de production, plus elles vont utiliser des crédits corporate. Et ça c'est plutôt un autre monde que nous, à ma connaissance ce n'est pas l'activité principale de la place financière de faire du corporate. D'abord ce n'est pas des rendements extraordinaires, et puis après il y a toute la question des fonds propres qui est posée. Donc maintenant on a des secteurs d'autant plus différents qu'en plus les banques ont quitté le secteur. Pas le crédit pur, mais elles ont arrêté de faire elles-mêmes des matières premières, ce que beaucoup avaient fait, enfin les américaines avaient fait en particulier, voire même des fonds de pensions indirect, un certain nombre aux Etats-Unis avec des interventions plutôt catastrophique du point de vue du fonctionnement du marché, parce que ce sont des interventions lourdes de gens qui viennent essayer de ramasser, les bénéfices en des périodes assez difficiles. Donc je trouve que maintenant c'est dommage, je n'ai plus accès à des informations particulières depuis 2 ans, mais je pense que même si j'avais accès à ces informations, c'est difficile de se rendre compte et d'avoir une vision globale. Le fait de faire de la canne à sucre c'est quand même différent que ce que fait Xstrata, même Glencore

ne fait pas le même business que Trafigura. En plus, c'est extrêmement difficile de savoir où ils sont, parce que vous avez des sièges fiscaux, des sièges opérationnels, ce qu'on est nous pour Trafigura. Et ce qui m'a frappé en préparant un petit peu ça (cette interview), c'est cette sorte d'impossibilité d'avoir des visions ; il y a des chiffres qui circulent, mais d'où sortent-ils ? Et j'ai vu que la société Noble était fortement endettée, par exemple, ce dont je n'avais jamais entendu auparavant. Et c'est maintenant qu'on en parle. Si j'ai compris la problématique, il y a 2 problèmes, il y a les émissions de dérivés et des opérations hedging dont là j'aurais tendance à dire que comme c'est toujours pour leur propre compte, j'ai de la peine à voir le risque systémique là-dessus. Ce n'est pas la même chose de faire du négoce à côté que de couvrir ses propres activités, c'est-à-dire il y a toujours en effet du tangible. A ma connaissance, personne, même dans le pétrole, n'a développé au-delà de ses besoins propres. L'autre aspect évidemment, c'est toutes ces acquisitions qui ont été faites en physique dont certains secteurs peuvent être quand même relativement dangereux, l'énergie en particulier, on est dans cette période assez particulière où en fait on a énormément d'énergie, et normalement il faut tout faire pour ne pas la consommer à court terme, parce qu'autrement les effets seront au-delà des 2 degrés. On voit à petite échelle en Suisse, en Europe, la perturbation maintenant des marchés électriques, tout le monde est en train de perdre de l'argent, parce qu'il y a à la fois les anciennes énergies toujours subventionnées d'ailleurs, comme le charbon, et puis à la fois il y a massivement d'autres comme le courant allemand parce qu'il n'arrive pas à s'en passer, et même pour ce qui était considéré bon marché, comme les centrales nucléaires sont moins sollicitées. Je pense que ça ne peut pas être le cas du côté des commodities, parce que là il y a quand même la croissance démographique, mais on est quand même dans un monde assez particulier d'autant plus que les risques politiques sont en train de devenir assez fort. A la frontière pas loin [déjà], l'Ukraine ce n'est pas une histoire anodine. Quand vous lisez que les japonais reconstruisent leur histoire en redéveloppant le nationalisme parce qu'ils ont peur de la Chine ou de la Corée du Nord aussi. Ce sont quand même des zones pétrolifères où ils mettent des petits soldats. Alors évidemment que tout a changé depuis le gaz et le pétrole de Schiste, mais ça, ça change quelque chose pour les Etats-Unis, même si ce sont aussi des sources d'extractions relativement coûteuses, alors, vous dites dans des pays instables, sur paradoxalement quelque chose où en fait on a trop et c'est là que ça devient difficile de dire des généralités. Parce que ce n'est pas la même chose, les minerais il y a belle et bien des pénuries qu'il n'y a pas en énergie. En plus, il y a des ralentissements, est-ce qu'il est structurelle ce ralentissement ? Mais c'est vrai que s'il y a un argument pour avoir des exigences de fonds propres sur ce type de sociétés, ce serait plutôt ça au fond. C'est-à-dire, ce n'est pas tellement les opérations de hedging ou d'OTC (Over The

Counter) qui dégénéraient, c'est si ces sociétés perdaient de la valeur parce que ses actifs perdent de la valeur. Alors là ça dépend terriblement du niveau d'intégration verticale. Et là-dessus je dois vous dire que je n'ai rien lu de très savant, à part le premier rapport de la Déclaration de Berne qui expliquait un peu cette transformation, ensuite j'ai un peu suivi la fusion d'Xstrata, où là c'est assez typique, l'appellation négoce, je ne vois plus quelle sens elle a, ce sont [Glencore] des propriétaire minier si je comprends quelque chose. Mais franchement j'ai suivi ça de façon un peu dilettante, parce que c'est quelque chose qui n'était pas directement dans notre secteur. A Genève, on a encore beaucoup de sociétés qui sont d'abord négoce, et ayant vu les processus de crédit, je vois bien ce qu'on peut perdre. Vous avez l'air toujours con quand vous perdez parce que généralement c'est de la matière qui a disparu ou c'est un pétrolier qui a coulé, mais il n'y a pas de conséquences économiques [graves], ça c'est courant ; vous avez un dépôt de cacao en Afrique, puis un jour il n'y a plus de cacao, si vous êtes avec des petits, vous avez prêté pour du cacao, et il n'y a plus de cacao, vous perdez votre argent. Mais comme c'est très bien rémunéré, ça fait partie des risques que vous prenez, quand vous faites ces opérations, ça explique aussi que ce sont des équipes très coûteuses, parce que tout est sur l'information, mais je ne vois rien de systémique dans ce type d'activité. Même dans un pétrolier, même quand le pétrole est cher, je ne vois rien de systémique. Par contre dès lors dès que vous avez ces monstres, on connaît n'importe quelle autre petite société mieux qu'eux, même si Xstrata [et Glencore] c'est une exception avec tous ce qui est paru par rapport à la fusion. Mais essayez de se faire une représentation du bilan de Trafigura [c'est très difficile] [avant 2015, puisque Trafigura viens de publier ses chiffres pour la première fois suite à une nouvelle politique]. La littérature que j'ai trouvé, je trouvais qu'elle était encore assez idéologique en fait, parce qu'en fait on avait l'impression que c'était les premières régulations, parce que ce sont quand même des obligations maintenant pour les américains par exemple de publier des choses comme ça, vont donner un certain nombre de réponses. Intuitivement j'ai l'impression que c'est assez différent d'il y a 10 ans, que l'évolution s'est énormément accélérée, parce que les banques ont quitté [le secteur] et parce qu'ils ont fait une intégration verticale extrêmement forte. C'est rare les choses qui changent à ce rythme. On sent que ça a un rapport avec la craque de 2007-2009. C'est un secteur qui est allé ailleurs, parce qu'il y avait de la place. Il y a quand même beaucoup d'acteurs qui se sont retirés, à mon avis pour le grand bien de tout le monde ; que les banques quittent les matières premières, ça ne me fera jamais pleuré. Donc voilà, mon impression générale, c'est que vraisemblablement, ce n'est pas qu'on puisse dire il ne faut rien faire. Maintenant, est-ce que c'est la même chose que les banques ? Est-ce que ça doit être fait avec les mêmes règles ? Ça je suis moins sûr. Plutôt globalement est-ce que la solidité de cet établissement exige un contrôle spécifique ? Parce

qu'ils sont tellement gros, mais moins par l'activité proprement financière, que par le fait qu'ils pourraient être plus fragiles qu'on ne le croit pour des facteurs politiques, et parce qu'on ne sait pas exactement de combien ils se sont endettés pour acheter tout ce qu'ils ont acheté. Parce que ce n'est quand même pas gratuit les installations minières et pétrolières même si c'est dans des pays généralement [bons marchés]. Ce n'est pas comme le négoce pur qui est une activité qui peut faire gros. Quand vous produisez, vous produisez, en principe il n'y a pas le même risque.

Le négoce de matières premières en Suisse représente 3.5% du PIB, savez-vous de combien cette activité contribue par rapport au PIB de Genève ?

De tête je ne sais pas. Je crois qu'on n'avait jamais réussi à se faire une idée parce que la comptabilité nationale quand vous la passez au cantonale, elle est toujours moins précise. Maintenant, j'avais vu des chiffres, mais ça dépend de tout ce qu'on comptabilise dedans, mais c'est au moins le double. Parce qu'on n'est pas 36 à faire ça, il y a Genève, Zoug, au Tessin aussi et plus qu'on ne le croit, mais c'est quelques matières. Alors Zoug c'est beaucoup plus, parce que c'est vraiment des géants. Bon les notions de PIB qu'on a avec ces sociétés là en plus [c'est difficile de se faire une idée, mais], c'est important, c'est important en valeur ajoutée. Vous pouvez l'approcher un peu autrement [la question]. C'est vrai que vous pouvez regarder ce qui est distribué comme valeur, et là c'est énorme, parce que les salaires sont vraiment très élevés. Après typiquement, sur la valeur ajoutée, ce ne sont pas des gros employeurs, parce que ce sont des équipes de gens hyper formés et le back-office est assez faible dans ces sociétés [en Suisse]. C'est un élément qui est important. Sur la marge de la Banque Cantonale [Genevoise], c'était une marge de 25% le négoce international quand même. Ça a été une chance énorme pour l'UBS, le Crédit Suisse, la Banque Cantonale Vaudoise. Avoir la SGS [à Genève], ce n'est pas totalement anodin non plus. Donc au fond, c'est typiquement un secteur qui est moteur, mais ce n'est pas les 20'000 emplois de la place financière. Vous êtes sur quelques milliers, mais ça dépend de ce que vous mettez dedans. À un moment ils sortaient toujours des chiffres consolidés sur l'arc lémanique, on avait 8'000, et ce n'était jamais précisé ce qu'ils avaient mis dedans, et en discutant, souvent il y avait aussi la partie crédit. Ce n'est pas beaucoup de gens la partie crédit, mais alors évidemment c'est beaucoup de valeur, parce que il y a un très haut savoir-faire, les gens doivent connaître plusieurs langues, donc c'est vraiment un truc qui tire, et ce que ça avait de particulier et ce que ça peut avoir d'important, et qu'il ne faut pas sous-estimer, c'est qu'on est dans une période où les autres moteurs ne sont plus très puissants. Parce que la place financière maintenant à fait la première étape de la régularisation, là on est en échange automatique. Donc

en gros vous ne pouvez pas lui demander de tirer l'économie Genevoise pendant plusieurs années. Parce que les marges baissent; vous n'avez plus l'avantage d'avoir des fonds qui sont des fonds de l'évasion fiscale, donc vous ne pouvez pas faire payer la même chose. Vous avez celui-ci, vous avez d'autres secteurs dont les marges diminuent simplement avec le franc fort. Les organisations internationales que l'on peut considérer comme des secteurs d'exportation sont plutôt stables. Jusqu'à présent sur l'horlogerie qui tire ; l'horlogerie de luxe. Mais il y a toujours une limite, parce que c'est très impressionnant d'avoir traversé la crise, mais il y a toujours une limite. Cette limite c'est toujours le type de produit ; si le produit haut de gamme. Alors ça, ça faisait parti des secteurs, et toujours d'ailleurs, qui ont du potentiel, et qui ont un effet entraînant assez fort, parce que du côté des quartiers généraux de multinationales ça ne va pas très fort. Ils sont en train d'avoir des politiques pour resserrer de se remettre sur leur métier. Ce que l'on a nous sont souvent en dollars ; Les sociétés américaines. Et en plus évidemment des nouvelles règles fiscales de l'OCDE, ça devient du stricte de stricte, ça veut dire ça va être pays par pays, Ce qui est produit ce qui est vendu, ce qui est taxé. C'est la transparence complète qui est annoncée, Et ça c'est pour les 5 prochaines années, ça va très vite. Et puis l'échange spontané, bon ça c'est de l'anti Luxembourg, sont des mesures assez puissantes qui concernaient moins le négoce. C'est moins une histoire de prix de transfert, c'est un peu plus compliqué comme affaire. C'est vrai que de ce point de vue-là, perdre le négoce [n'est pas très réjouissant], surtout dans ce contexte, sachant qu'il n'y a pas grand-chose comme activité nouvelle qui se profile, parce qu'à ce jour on a échoué sur les sciences du vivant. C'est-à-dire tout ce qui est autour des médicaments, de nouvelles molécules, d'ordinateurs, de simulations ; tous ces projets qui sont un peu autour de l'EPFL. Le modèle c'est de plus en plus les petites sociétés, qui découvrent et qui sont rachetées par des gros, comme si les grosses n'arrivaient plus à produire de l'innovation. Et avec la densité CHUV et HUG ou encore EPFL, il y avait un très bon terreau pour ça, mais c'est plutôt Vaud qui a réussi, et puis quand il y a eu la crise là on a perdu du terrain. Maintenant on est plutôt sur des jeunes pousses, mais, ce sont des boîtes à 12 collaborateurs. Et il semble que quand elles réussissent, elles iront produire ailleurs de toute façon. En dehors de ça, quoi de neuf ? L'âge d'or ça a été des années 2000, ce n'est pas maintenant. Alors maintenant le prix des bureaux va baisser, il va y avoir d'autres opportunités, mais moi je ne vois pas lesquels. Je n'entends personne parler du rebond, les années vont être compliquées, mais on n'a pas l'impression que ce soit qui que ce soit [qui sait ce qui va se passer, ni quand], ou l'université ou le gouvernement, ou même chez les acteurs économiques, moi j'en vois encore de temps en temps, et il va falloir faire le dos rond. Alors c'est vrai que dans ce contexte là, la question du négoce n'est pas totalement anodine. [...] tout le monde perd un peu de ses marges. Parce qu'il

y avait des contrats qui avaient été signés, Par rapport à tel cours de change. Ces gens ne vont pas faire faillite, ce n'est pas ça, mais ils seront restreints. Dans le monde du déménagement du nettoyage par exemple, on retrouve des trucs extrêmement abusifs, parce qu'il y a pas mal de gens qui viennent de régions diverses et variées avec rien. Et puis il y a aussi cet effet, ma femme connaît cette employée qui s'est fait virer parce qu'on lui a dit : « vous nous coûte de française ». Cela faisait 14 ans qu'elle était là. Mais c'est parce que le bureau un problème aussi, ils ne sont pas devenus méchants du jour au lendemain. Mais vous avez tous ces petits effets, vous sentez [qu'ils s'accumulent]. Comme les défis centraux, c'est-à-dire une place financière qui n'a pas d'affaires, qui ne vit pas de parasitisme fiscal, et vivre quand même avec 500 millions de recettes en moins, sur le canton avec des statuts unifiés, en respectant les règles OCDE, on est quand même très riche, mais c'est pas tout simple. Vous avez cet effet un peu où vous perdez petit bout par petit. C'est vrai que quand vous avez les effets de l'économie extravertie, c'est-à-dire exportatrice, qui ne se rapportent que partiellement dans le canton, et même au niveau financier ils se reportent pratiquement pour un quart sur France et le canton de Vaud, c'est là où l'argent est revenu, la production c'est là, mais les revenus c'est là-bas. Ça veut dire que vous n'avez pas le cercle vertueux de l'économie locale. C'est-à-dire que les opportunités sont moins grandes puisque les gens ou les sociétés d'ailleurs ne consomment pas [ici]. Il y avait une étude ce matin dans le Temps, un peu compliqué à lire, à Neuchâtel ils expliquaient ça. Neuchâtel ils ont énormément de frontaliers dans le canton, mais en même temps c'est l'endroit où y'a le plus d'aide sociale dans la ville de Neuchâtel, c'est parce qu'au fond le circuit ne marche plus, parce que les gens sont soit à l'extérieur de Neuchâtel comme résident, soit ils sont côté français. On n'arriverait jamais à faire tourner l'horlogerie du côté de Neuchâtel avec des ouvriers Suisse, ce n'est même statistiquement pas possible. Et on a un peu le même problème, on arrose mais sans que ça fasse le retour. Il y a la boucle qui ne se refait plus, et c'est vrai que là s'il y avait sursaut de croissance en Europe [cela reformerait la boucle de l'économie locale], ce qui est possible vu que ça fait longtemps que ça ne monte pas. D'ailleurs j'ai été étonné je crois qu'ils [la France] annoncent 1,2% de croissance, alors qu'ils estimaient à 0. [...]

Si il y avait un risque systémique, et que ces entreprises se retrouvaient en situation financières difficile, comment cela se passerait-il d'après vous ? Serait-ce Genève ou la confédération qui injecterait de l'argent ?

Genève n'a rien à voir là-dedans, c'est un système international, donc ça dépend sur qui ça tombe, mais c'est le deuxième intervenant qui serait aidé ce n'est pas eux. Ça ne me paraît pas possible qu'ils soient aidés. C'est bien le problème, c'est-à-dire que : où sont-ils ? Parce que déjà l'UBS c'était un peu compliqué, parce que l'UBS c'est d'abord une société américaine en effectif, en affaires, en volume d'affaires. Par contre c'est très claire pour le siège social qui est ici, c'est une multinationale à siège helvétiques, mais dans ses règles d'organisation c'est une banque américaine, mais là c'était clair que les contreparties elles étaient ici, c'est-à-dire que toutes les petites banques là, elles tombaient toute, parce qu'elles sont toutes en relation constante. Ça veut dire que si eux ne remboursent pas les dépôts qu'ils ont, c'est une catastrophe. Là je vois à peu près qui peut être engagé pour des enveloppes [de crédit], mais je ne vois pas qu'il y ait des banques qui soient prises dans leur financement de ces sociétés ; elle finance du court terme. Et il ne me semble pas que le corporate se finance ici, il me semble qu'il se finance à Londres. En plus il faudrait connaître le rôle de Singapour, ils sont toujours partout, ils sont toujours ici et là-bas. Alors ils font des choses différentes à chaque endroit et ici de ce que j'en avais compris, ils font d'abord du négoce pur, et ils financent, de ce que je connais moi, des opérations négoce pur. Et vous pouvez dites tout arrêter, parce que ce sont des enveloppes [de crédit] et puis après ce sont des tournus sur des trucs qui ne sont jamais tous en même temps. Donc maintenant, je ne connais personne qui est exposé à ce point-là. Surtout que maintenant tout le monde en plus à réduit la voilure, et c'est pour ça aussi qu'ils ont des besoins de corporate plus important. Parce que maintenant le financement classique, il est un peu moins facile, parce que ce sont des opérations qui mangent des fonds propres en fait pour les banques. Comme ce sont des opérations à risque, qui sont cotées par rapport aux fonds propres dans la table assez haut, même si elles ne sont d'ailleurs pas forcément plus dangereuses, a priori, c'est plus difficile de les toucher en tout temps, même s'il y a un support matériel, il est plus loin. Donc c'est ça qui a fait que pour des questions de fonds propres, beaucoup ont quitté ce business-là. Ça leur mangeait trop de fonds propres, ça leur empêchait trop de développer d'autres affaires [en partie à cause de Bâle III], parce que quand on met plus de sécurité, on peut faire moins de trucs. Après ces des choix d'entreprise aussi, certains disent : « je préfère développer ici qu'ailleurs », mais c'est vrai que ça consomme des fonds propres. Donc chacun à refaire un équilibre, parce que personne n'a abandonné à part les banques, ce qui a été abandonné c'est le négoce direct par les banques, ça c'était que les banques américaines, mais personne n'a arrêté le crédit. Par contre les voilures, le

faite que les exigences de fonds propres qui sont propres à Bâle III, j'ai trouvé que c'était un truc cauchemardesque sur le plan technique, mais je ne vois pas qui on pourrait ruiner plus que Serono qui ferme. En plus ils n'étaient pas en faillite, ils fermaient tout simplement. Je ne vois pas sur la place [financière et des commodities], ce qui pourrait se passer, sauf à croire que tout le secteur tombe en même temps, ce qui paraît quand même relativement improbable. Au niveau mondial cela pourrait avoir un effet. Parce que vraisemblablement il y a des créanciers partout, et pour des choses différentes, je pense que les créanciers des installations ne sont pas les mêmes que les créanciers de la compagnie, pas les mêmes du négoce, donc ce qui fait peur ce sont les sommes. On a l'impression d'un modèle quand même très classique dans le sens où il y a des actifs, du matériel, vous n'êtes pas que dans du financier, il y a vraiment des actifs matériels, à pas mal d'endroits quand même. Non je ne pense pas qu'il y ait un risque local, ça je n'arrive pas [à y voir], autre que quand il y a un secteur qui rapporte, ce qui appauvrit un peu tout le monde, mais je ne vois pas comment une banque en Suisse pourrait être mise à mal pour ça, surtout pas avec les règles propres qu'ils ont maintenant ; surtout pas avec « Too Big To Fail » et Bâle III. Parce que les petites pas tellement, parce qu'il faut pouvoir se payer l'équipe, donc il faut quand même arriver à pouvoir faire suffisamment d'opération, autrement ce n'est pas rentable, parce que c'est un métier aussi du crédit transactionnel, et que si vous n'avez pas l'équipe, vous êtes sûr de perdre. C'est vraiment un savoir-faire, c'est bizarre. C'est vraiment un truc assez particulier, parce que ce n'est pas seulement technique, qu'il y a beaucoup de documents, il y a aussi beaucoup de connaissances un peu terrain qu'il faut connaître ; comment ça se passe là-bas, comment ça se passe quand vous êtes à Odessa., C'est ça aussi qu'il faut savoir, ce n'est pas seulement savoir ce qui est écrit sur le papier. Il faut avoir voyagé en Afrique, ce sont des choses, et puis c'est vrai que vous ne pouvez pas lire des traductions, il faut vraiment des gens qui sont comme au bon vieux temps des grands voiliers et tout. Quand vous faisiez du trafic d'esclaves, il fallait aussi savoir qui étaient les trafiquants d'esclaves pour aller en Afrique. Donc on a quand même dans un monde qui est assez particulier, mais à Genève qui est aussi pointu, donc les impacts seraient plutôt simplement des grandes sociétés qui flanchent, il y a des licenciements, rien que du très classique, pas différent de la sidérurgie lilloise.

Si les grandes entreprises de négoce s'en allaient de Genève, de la Suisse, est-ce que ce serait catastrophique ?

Pour la Suisse aurait des impacts assez conséquents. Ça ne peut pas être catastrophique, dans le sens où il y a peu de gens. Mais alors vraisemblablement comment ça se passe si ça disparaît [de la Suisse], il y aurait un appauvrissement de la Suisse par l'effet de la péréquation, parce que l'argent de Zoug vient de quelque part [Zoug est un canton contributeur, c'est-à-dire qu'en ayant des recettes fiscales plus élevées que ces dépenses, elle reverse une partie de ses recettes fiscales aux autres cantons de la Suisse], les nôtres aussi quelques part, Zurich n'est pratiquement pas concernée. Vous auriez des effets fiscaux sur trois ans qui ferais que la balance serait différente, surtout pour les cantons qui sont nourris à la becquée, et qui seraient sans doute dans des situations plus difficiles, parce que le 80% de la moyenne ne seraient plus au même niveau fonctionnement [niveau minimum que les cantons doivent attendre en soustrayant les dépenses des recettes fiscales]. Vous aurez plutôt ces effets-là finalement. Mais c'est vrai que la part des négoce a augmenté [en Suisse] alors que la part de la place financière a baissé, mais quand même il n'y a pas tout à fait photos, surtout il n'y a pas photo en termes d'emploi. Alors il y a plus de concentration de salaires élevés dans le négoce que dans la banque, puisqu'il y a toujours le retail dans la banque. Je ne pense pas qu'on aille un séisme pour ça, mais alors au niveau local je suis incapable de répondre à cette question, mais ce serait intéressant de voir ce qui se passerait à Zoug. Le canton est tellement petit, les entreprises sont tellement grosses, parce qu'ici, d'accord, il y a des géants, mais il y a Patek Philippe, il y a Rolex, il y a Pictet, il y a quand même des multinationales. Vous avez quand même 20 000 personnes qui travaillent dans les OIG (Organisation Intergouvernementale), c'est pas mal diversifié [à Genève], ce n'est pas la même chose. Un exemple qui est quand même classique, Serono c'est quand même pas mal d'emplois, et on a rien senti. Pour les gens c'était dur, pour eux, mais pour la société genevoise, il s'est passé quoi ? C'est quand même 2'000 emplois. Alors oui ça ajouterait à la probable crise des finances publiques, parce que si ces salaires ne sont plus payés, ils font partie des 10% qui financent les 40% [de recettes fiscales genevoises]. Ceci dit, comme on est toujours 10% de plus en dépenses par habitant, c'est gérable. Par contre au niveau mondial, j'arrive avoir des effets lui si c'est vraiment une de ces sociétés mondiales, mais normalement si elles ne font pas toute faillite en même temps, c'est une autre qui rachète. Ça c'est un argument qui m'a paru assez juste, dans la littérature financée ; on va dire subventionnée [référence aux recherches de Craig Pirrong]. D'habitude jusqu'à présent, il y a eu quelques faillites notoires, mais c'est un autre qui reprend, il n'y a pas eu de perte globale, c'est l'argent qui a changé de mains. Il y en a un qui s'est planté, il y en a un autre qui a racheté. Mais je n'arrive pas à imaginer le scénario où elles pètent

toutes en même temps. Ça peut être une baisse des prix, ou une guerre, mais les guerres on ne peut pas faire des hypothèses. Mais oui une baisse de prix, ils affrontent déjà des baisses de prix et il ne semble pas être gêné. Alors de temps en temps ils se trompent. Alors j'ai quand même vu des résultats annuels et on peut voir ceux qui ont misé sur des prix à la hausse ou à la baisse, mais ce n'est jamais long. Il y en a qui font une bonne année, puis en a d'autres qui font une mauvaise année ; vous sentez qu'ils n'ont pas joué la même stratégie, après l'année suivante ce sera autre chose.

David Hiler : Alors la question clé, et c'est celle que je vous ai dit dès le début et que je ne saurais pas répondre, c'est de combien ils sont endettés ?

Parce que s'ils sont propriétaires, assez largement, ils coulent. Par contre, si en fait les propriétaires sont ceux qui ont prêté l'argent, alors c'est ceux qui ont prêté l'argent qui coulent, et là ça devient systémique. Mais c'est ce que je ne sais pas, je pensais que vous en serez un peu plus, mais visiblement pas. Peut-être que quelqu'un arrivera vous répondre, moi pas. Il y a vraiment trop de décalage de temps, et la question c'est vraiment ça : de combien sont-ils endettés ? C'est pour ça je vous disais finalement, ça n'a rien que de très classique. Peut-on imaginer que cette société soit surendettée, et qu'on s'en aperçoive sur un revers, une baisse des prix ou un truc comme ça, que finalement ils avaient investi tellement sur les infrastructures, que si le prix baisse, ils seront simplement en faillite, et tous ceux qui leur ont prêté de l'argent perdent. Simplement il me semble que c'est tellement mondial ces prêts peut-être aussi que je me rends pas bien compte de la valeur des actifs par rapport aux actifs mondiaux, mais je n'arrive pas non plus à imaginer que tout aille en même temps. Ils sont quand même assez diversifiés maintenant. Vous avez encore quelque [négociants de] pétrole assez pur, mais les autres font un peu de tout. Maintenant on ne sait pas qu'un seul minerais. D'ailleurs ça, ça m'avait surpris, il y en a quand même de plus en plus qui font des soft commodities en même temps que des minerais par exemple. Mais par contre c'est vrai que j'ai vu des mauvaises années. Il y a une année où les métaux ont été foireux, alors là c'est vrai qu'ils régressent tous. Mais ils régressent sur un bénéfice, et ça ne répond toujours pas à la question, si c'était autre chose qu'un bénéfice, est-ce que ça aurait été les propriétaires ? Ou est-ce qu'ils faisaient perdre derrière eux les banques ? Jusqu'à quel point ? Des investisseurs qui ne sont pas des banques aussi dans le privé ? Moi ça je ne sais pas, et je ne saurais même pas tellement où regarder pour trouver l'information. Vous me disiez c'est dans deux ans [que cette interview aurait été plus révélatrice]. Et je dois même dire qu'au fond, pour les régulations MIFID, disons qu'il faut être un spécialiste ; il vaut mieux avoir un

doctorat pour en parler. Parce que des fois ça vous pouvez parcourir, c'est souvent que les mots sont compliqués mais le tout est pas trop compliqué, mais là c'est compliqué pour de vrai. Peut-être pas tellement la problématique que la régulation elle-même.

Ce qui m'a frappé, c'est la légèreté des arguments, de parts et d'autres. C'est assez peu factuel comme débat ; ce sont souvent des croyances. Les textes sont très courts, parce que ce sont des médias, parce qu'ils sont ce côté ou de l'autre, l'autre côté vous avait des papiers un peu bureaucratique qui sont eux difficiles à lire par contre. En gros, on est quand même sur du raisonnement assez léger. Quand il y a eu la régulation bancaire quand même, on était sur des objectifs de fonds propres, on savait sur quelle partie [se concentré], il y avait eu Bâle III, il y avait une sorte d'énorme savoir-faire technocratique. Et là, vous avez l'impression qu'on discute sa un peu comme au café du commerce dans des publications. Certainement que je n'ai pas regardé les plus efficaces, des universités très savantes, mais ça n'a pas vraiment frappé. C'est vrai que quand vous regardez que le truc de base sort de Trafigura à chaque fois, et en plus qu'elle est assez courte [vous dites que c'est quand même léger]. J'ai trouvé ça d'une légèreté [référence au dernier rapport de Craig Pirrong du mois de mars 2015], normalement quand vous faites des thèses économiques c'est au moins 500 pages. Bon c'est un grand [Craig Pirrong], donc lui il a fait un raisonnement, il dit : « ça ne peut pas se passer, parce que... ». Ce n'est pas idiot ce qu'il dit, mais il ne dit pas : « les faits démontrent que... ». Mais moi j'étais surtout troublé, quand j'ai commencé à réfléchir à ce sujet [dans l'optique de cette interview], justement parce que j'avais l'impression de ne plus savoir ce qu'était ce secteur. Il a tellement changé, il est tellement plus matériel, que ce ne sont pas tout à fait les mêmes règles qui s'appliquent. Maintenant c'est vrai que les arguments qui m'ont frappé, c'est le principe de s'il y en a un qui tombe, c'est l'autre qui reprend. C'est-à-dire que ça n'a pas l'effet d'entraîner tout le monde et qu'il y a toujours quelqu'un qui peut profiter de l'autre. Sauf évidemment, si toute la marchandise est invendable, mais ce sont généralement des marchandises assez utilisées. S'il y avait un truc comme ça, ce serait parce qu'on serait dans un cycle technologique plutôt ; parce qu'on aurait découvert quelque chose qui permettrait de se passer de toute une série de marchandises. Mais on y voit venir un peu d'habitude. Ça marche, ce sont des produits qui disparaissent, mais ce sont des produits qui disparaissent sur 20 ans à cause des mutations technologiques avec des règles qui sont impitoyables, mais on est loin de « Too Big to Fail ». Et sur les OTC, je n'arrive pas bien à voir quel bulle on pourrait créer là-dessus, sauf s'il y a de l'argent qui ne vient pas d'eux même. Mais par eux-mêmes je n'arrive pas à voir comment ils les auraient générés [risque systémique], quel que soit leurs poids économique. Je dirais même, depuis le retrait d'un certain nombre de banques d'investissement, et des caisses de pensions susceptibles de revenir sur ce marché-là, je trouve

plutôt rassurant. Maintenant c'est vrai que les dérivés, c'est un facteur de risque, c'est un facteur de protection et de risque ; c'est un jeu, mais rien n'indique qu'ils fassent plus de dégâts qu'ils ne protègent. De toute façon ils sont bien obligés de faire des arbitrages, l'idée qu'on puisse faire ça sans papiers, juste avec le physique, ça ne me paraît pas possible. Après c'est vrai que des fois quand je voyais certaines sociétés, que je n'ai pas le droit de cité, je trouvais qu'elles faisaient beaucoup de papier par rapport au physique. C'est pourtant les très grosses, mais c'est en rapport avec ce qu'elles faisaient ici [référence à Noble]. [...] c'est un cas connu, de rester sur des valeurs anciennes. , c'est ce qu'avait fait la banque cantonale [de Genève]. En fait, des règles de fixation de provisions étaient absurdes, donc ils ont pu cacher 10 ans ; ils ont quand même réussi à faire passer fusion de deux banques avec des chiffres faux, et au Grand Conseil. C'était la manière de calculer qui était fautive, c'est là-dessus que Ernst and Young était payé. Alors c'est vrai que comme il n'y avait pas eu une crise de 40 ans, ce n'était pas un domaine très étudié. Mais en effet, quand on a vu que ce n'était pas juste conjoncturel, on aurait dû dire : « écoutez, vous avez perdu sa de valeur ». Toutes ces affaires c'est souvent ça, quand vous refusez la nouvelle donne, votre produit vous ne l'actualisez pas, vous avez des valeurs qui sont du passé, et si vous ne mettez pas à jour, alors ça ce qu'on a vu, c'est-à-dire que les installations n'ont pas la valeur qu'elles ont aujourd'hui.

Est-ce que vous pensez qu'il y a un sujet que nous aurions pu aborder aujourd'hui et que nous n'avons pas fait ?

Non, non, c'est vrai qu'en regardant moi-même de mon côté, je me suis dit que la question clé était l'endettement. Et puis là vous avez ajouté un autre élément: est-ce qu'ils sont tous des valeurs justes ? Parce que s'ils sont endettés, et que l'actif surévalué, la vous n'êtes pas très bien. Est-ce que je me trompe, ou est-ce qu'ils indiquaient bien 67% [d'endettement] chez Noble. C'est aussi ça le problème, ce n'est pas un seul truc, ce sont des stocks, des usines de ci, l'exploitation de ça, des terrains. Comme c'est assez diversifié, évidemment il y a de l'hésitation sur combien ça vaut, surtout que c'est dans le monde entier, on se demande aussi comment les sociétés d'audit peuvent contrôler ça. C'est un métier quand même assez différent, parce que le négoce c'est quand même la légèreté ; vous faites une cargaison, vous achetez un truc. Mais quand vous commencez à être sur de l'immobilisation, ce n'est pas la même gestion ; c'est-à-dire que vous commencez à changer de métier. J'ai parlé avec des gens de ces sociétés, et ces gens me disaient que ça a quand même changé de métier ; vous gérez de nouveaux risques. Mais bon vous savez pour moi ça ce sont surtout des lignes dans des recettes fiscales [référence au temps

M.Hiler était ministre des finances à Genève]. À cette époque, j'ai rencontré un certain nombre de responsables [des sociétés de négoce], et ils essayaient de m'expliquer un peu leur truc, mais bon. Vous savez quand il y a gigantisme, quand sa croit très vite, et que vous avez des monstres qui se créent, vous pouvez toujours vous faire du souci. Quand ça gonfle, ça va péter, le problème c'est qu'on ne sait pas quand. Ce qui est arrivé dans notre secteur, peut arriver là. Je ne sais pas si ce risque-là est plus gros que le risque qui vient d'informatique en Californie; je ne mettrais pas forcément beaucoup d'argent non plus sur Uber, ça passe ou ça casse. Maintenant de toute façon, c'est difficile à dire, parce que le monde est instable. Un monde en instabilité politique, c'est compliqué, surtout dans un monde possible globalisé. L'Asie est assez stable par contre, mais le reste.... L'Afrique, c'est quand même quelque chose, l'Irak c'est quand même grand, et le Nigéria, Dieu sait que c'est arrosé, il y a aussi l'Ukraine, ça commence à faire pas mal de trucs. Vous avez l'impression que l'Asie est plus stable de ce point de vue-là ; les échanges sont très forts. On avait l'impression qu'au niveau européen on était sorti de ça [en instabilité politique], et puis tout d'un coup on s'aperçoit que c'est tout près, et je trouve ça effrayant. [...] Ça m'a fait plaisir d'avoir cette conversation avec vous, merci.

Appendix 2: Interview with Mr. Craig Pirrong

Professor Craig Pirrong is Professor at the University of Houston and well-known for his research regarding the commodities sector and for his white paper: “Not Too Big To Fail – Systemic Risk, Regulation, and the Economics of Commodity Trading Firms” (Pirrong, 2015). He kindly accepted to answer some questions through a skype call from the Geneva School of Administration (HEG) on 15 July 2015.

What are the arguments of the people who think that Commodity Trading Firms (CTFs) are “Too Big to Fail”?

The issue came up in a couple of contexts. The first is one of the deputy governor, from the Bank of Canada, Timothy Lane, who is on the Financial Stability Board, and Canada being an important commodity country, focused on commodity issues. He sort of raised the question on whether, commodity trading firms are “too big to fail”. So he gave a speech I think it was in 2012. Also my involvement in this started when I was approached by Blythe Masters, you might never have heard of, she was the former head of commodity trading at J.P. Morgan. She was supposedly one of the inventors of the credit default swap, when she went ahead and became the head of commodity trading at J.P. Morgan. She called me in 2011 to talk about another issue, and then she called back later and said: “hey I am on this committee of the Global Financial Market Association (GFMA)” which is a lobby basically and said: “we are interested in the issue of systemic risk commodity trading firms, so we would like you to do a white paper on this. We think that they need to be regulated like banks.” So I did this paper and I came up with the “wrong answer”, which is the same answer that I came up in the Trafigura paper, which is: no they don’t cause this problem, there are not systemically risky, and that was not the good answer [for banks they saw commodity trading firms (CTFs) as competitors]. So GFMA did not release this report. Well there is an article about it in the FT (Financial Times), because a reporter found out about this report and made sort of a comment on my blog. So the Financial Stability Board came up with the issue, and banks were looking into the issue, and I think that the reason that the Financial Stability Board was looking into the issue was that the banks were pushing them. But more generally, what this paper came up was that any intermediary where considered by the next source of systemic risk; I think all the intermediaries have come under suspicion for this sort of thing. The specific catalyst for the Trafigura white paper, was that commodity trading firms may be subjected to the same kind of

prevention capital requirements that banks are. But again the reason why regulators thinking of doing that was that they were concerned about whether commodity trading firms might be systemically risky.

You were mandated by Trafigura to write this paper, so were you completely objective regarding your findings and arguments or did you have to look for argument in favor of the CTFs, meaning that it would be not “Too Big to Fail”?

I think the whole story about the GFMA case indicates my objectivity. So I was commissioned by the GFMA which obviously had another agenda, I objectively evaluated where my views were, set those out there. They have asked me about this, they asked change them, I said I would not, so that's why that paper wasn't released. But coming out of that, basically my views were established, before Trafigura commissioned a report, the argument that were in the Trafigura commission report are very similar to GFMA report, and the fact that I beat the hand that was trying to feed me indicates my objectivity.

Can you please explain what does exactly mean the “broader economy” in the Federal Reserve Chairman Ben Bernanke’s letter to Senator Bob Corker?

What they are concerned about is whether a failure of a particular firm, bank or commodity trading firm would have spillover effects onto like would GDP go down? And as a result grow less rapidly due to particular firm or kind of firm that went into difficulties. So basically they're looking in there would be a particular macroeconomic impact.

At which point does it become broad?

Well it depends, could it cause a recession in a nation? Or could it conceivably have a catalyst for worldwide financial or economic slowdown.

Can you also please explain what exactly liquidity transformation is?

Liquidity transformation is what banks do. So you put a deposit in the bank, and you think that I have money in the bank. If there is something that you need to pay you can just write a check, use your ATM card immediately, so the bank is providing me with liquidity. What is the bank doing with that? The bank is investing your money and other assets which aren't as liquid. And so that's what liquidity transformation is. They have liquidity and reliability side of their balance sheet; liquid assets. They have liquidity liabilities and relatively illiquid assets, and that's the transformation that goes on. And the idea is that not everybody is going to want their money at the same time that the bank can hold a relatively small amount of liquid assets to meet the cash needs of its depositors, and invest most of the rest of the money in higher-yielding investments.

I thought that this was the definition of maturity transformation, what is the difference then between liquidity transformation and maturity transformation?

A lot of time the correlation between those sayings are more longer maturity assets that are less liquid.

In what manner, do you think some CTFs are practicing shadow banking?

Yeah, one example would be what Trafigura did and what some other companies have done to securitize the receivables. They have a lot of receivables, from customers, cargo of oil, they want payment immediately at delivery, essentially substantial credit for a short period of time, and then what Trafigura did was that it securitized receivables. That has been tried a few times, attempts one time they tried to securitize some inventories, that commodity traders would hold inventories, and tried to essentially finance those through a shadow banking type of transaction. I don't think that they are important in terms of overall magnitude and also as I pointed out, for example the Trafigura case, did a different kind of shadow banking that the kind that created problems during the financial crisis [of 2007-2009], because there was a sort of reverse liquidity and maturity transformation that the assets to be relatively short maturity and the liabilities tend to be relatively long maturity. Commodity trading firms are also involved in commodity trading finance and they might be considered as a form of shadow banking but I think there is a lot of misunderstanding about that. I think that a lot of the credit risk still lies with the bank, basically by guarantees from the bank, or somehow pass the credit risk the bank, so really the commodity traders are more a

financing kind to it. It could be that of the letters credit but it could also be, for example, prepayment agreement between Rosneft and Trafigura.

I had an interview with the former Minister of finance of Geneva Mr. David Hiler who is not an expert on commodities but still said that he thinks your arguments are mostly based on ideas/theories and not on facts and that your paper is a bit light for this matter, saying that he expected 500 pages instead of 60, what could you answer to that?

It's a rather vague and general criticism. What I would say is that the paper tries to join up theories and facts, and so you can't evaluate facts without theory. I think this is what I do in the paper, trying to bring some of the theories/studies issued regarding the systemic risk, financial fragility over very long period of time, and we have a pretty good grasp on some of those issues and so I basically bring those understandings to the facts that associate with commodity trading firms. So I think there is the appropriate mixture of theory and facts. In terms of the paper, who's gonna read 500 pages? And also is difficult to do that in a relatively timely way. It's interesting to know that Mr. Hiler would read 500 pages.

In your latest paper, "Not too big to fail, systemic risk white paper", you presented a table that shows that most of the big firms are not too highly leveraged, that the average ratio for Systematically Important Financial Institutions is about 10 in the U.S. and about 20 in Europe. Can you explain this difference between those?

Essentially U.S. capital regulations on Europe capital regulations are somewhat different. I mean look at Deutsche Bank the treatment of capital has been more labeled than in the U.S..

There are still some CTFs that have ratios over 10 or even 20 and some even way over it, does that make them Systemically Important?

What does tend to be, and this is sort of interesting, is the relatively asset light firms, I think it might have been Arcadia. One of the issues is leverage the other issue the composition of this leverage and I think that even for that firm, which is highly leveraged, sometimes commodity trading firms' balance sheet can be misleading because they don't do liquidity of maturity transformation that banks do and is not as detrimental.

On your last paper mentioned previously, you wrote: “Binding capital requirements force firms to hold more equity and less debt than they would otherwise choose, which necessarily increases costs”. Why is it more costly for CTFs to have more equity and less debt? Don’t you think that the costs that you discussed in the paper would be offset by the interests?

This is a matter of what one calls preference. In other words, if a different capital structure would lower the costs, they would choose that. So presume that refers to capital structure that minimizes their costs. If they have a different capital structure, then they have a different mixture of equity and debt and that’s gonna increase costs, so they would have chosen the first one anyway.

You said that it forces CTFs to reduce their assets, but not all CTFs are asset heavy, what about those CTFs?

You’re right, so it would essentially be different depending on different kinds of firms, so the more heavy assets firms are the more likely to would have to reduce the size of their balance sheets, in order to meet these capital requirements. But I mean even in asset light firms assets and liabilities have to match, so assets light firms basically means that they don’t have a lot of physical assets, but they still have assets like inventories, but they don’t have physical assets like terminal. So basically the amount of leverage that could be supported by a given asset base, would be affected by the capital requirements, and they would have for example smaller inventories.

Banks have had to implement the Basel 3 or CRD 4 and they are doing fine, don’t you think that CTFs could just adapt and also do well?

Yeah they’ll do fine, they’ll do well, they’ll survive. Though, in the equilibrium ⁴⁸ there aren’t competitive returns so I’m not saying that capital requirements would be a failure to them. The point still is that would make their business more costly, and actually would be not so much the commodity trading firms, but it would be the large ones would bear the costs, and therefore most of the costs would be passed down either upstream or downstream, offering lower prices to producers upstream, and higher prices to consumers downstream.

⁴⁸ “A run equilibrium is a steady state in which it is rational for an individual to attempt to withdraw funds if everyone else does. It is a type of self-fulfilling prophecy. A run equilibrium can be inefficient if it causes the failure of a solvent institution, or if it causes the institution to sell some of its long-maturity, illiquid assets at distress prices in order to meet the demands of the running depositors.” (Pirrong, 2015)

Do you think we can say that CTFs are “Too Big to Fail” in Geneva or in Switzerland since it is a commodity trading hub and that it weighs 3.5% in the Swiss GDP and likely more than the double of that in Geneva?

I think more of the issue will be, one of the things is financial distress. It doesn't mean that firm is gonna go away, or that its business is going to go away and it's likely that the financial distress of a firm like Trafigura, Vitol, or another firm with a big Swiss presence that their business would be absorbed by another firm in the sector. And sort of the key issue here would be who would bear the risks, who would bear the financial risks associated with a failure. Swiss banks have some exposure, and the French banks are the ones with the biggest exposure to commodity trading firms. Banks being lenders to commodity trading firms, and once commodity trading firms runs some difficulties there chief predator is going to be the bank. The creditors are the ones who lose.

If in any way, the main commodity trading firms would fail simultaneously, who do you think is going to save them?

Unlikely banks. There is not a mechanism, or a direct reason for governments to get involved. Banks for example, there is a deposit insurance, and other implicit guarantees, that basically commits governments to support banks, because they are deemed to be systemically important. This is one of the reasons why the government gets involved even when there is not an explicit guarantee. One experience that I can look at the United States was, as I wrote the report, when the entire energy sector basically melted down and every major firm in the industry went into financial distress, a couple of them went bankrupt and the government both at the state and federal level basically didn't do anything. So in my view, if there would be involvement, it would be because of some sort of political pressure, political failure as opposed as economical imperative.

Concerning the banks or the company firms?

Banks that might have been export commodity firms might want to pressure governments to intervening, though that would probably not been justified. That's what you are always worried about, that there is a sort of spillover, from financial distress onto basically their counterparties, their creditors and so if there was government involvement it would be likely as a result of the pressure of the creditors to government bail-out and to recover money.

Just to make sure, is there a difference between systemic risk and "Too Big to Fail"?

"Too Big to Fail" is basically just a convenient phrase that has been identified with the systemic risk. So "Too Big to Fail" is one big source of systemic risk, but systemic risk can arise even when you have smaller institutions failing. For example if you look at the Great Depression in the United States the banking crisis was not only big banks, it was thousands of small banks that got them into trouble, similarly with the crisis in the United States in the 1980's. "Too Big to Fail" is a convenient shorthand for systemic risk, and in some ways it's sort of a misleading tell.

So basically the main thing to remember about systemic risk is financial distress of one firm or one type of firm can have consequences not just for creditors, it can have broader economic effects, and a chain contagion. One firm fails, that means its creditors fail and that means that their creditors might have problems and this leads to an economic slowdown.

To summarize, could you tell me in short why CTFs are not "Too big to fail"?

Because they do not provide the kind of intermediation that is proven to be systemically risky in other contexts. They don't provide liquidity transformation, or the maturity transformation that has been the source of systemic risk in other contexts and also just they are not that big.

Do you think that the corporate financing for the long term assets, in case of a failure of one big commodity trading company could create some sort of impact on the real economy? If there are some impacts which one are they?

No, I really don't think so. And in that respect I think that commodity trading firms are no different than a steel company or an oil refiner, anything of that nature. So essentially they're not likely to get the contagions or runs associated with systemic risk. This is just a credit risk in any sort of leverage transaction.

In case of failure, would the bank try to resell the assets?

There would be resorts as in other banks. Typically the firm would go in some sort of bankruptcy protection, depending on the procedure, depending on the jurisdiction, and usually that's going to involve the provision of funding to continue - if a viable - to continue its operations. Essentially assets would be sold off to other parties, or the firm will be acquired by somebody else and would continue to operate the assets. There is an incentive to keep economically viable assets.

If we are talking about the big ABCD (ADM, Bunge, Cargill and [Louis] Dreyfus) firms, and we imagine that Bunge goes bankrupt, would it have an impact on the real economy; for the people? Would there be sort of a shortage on grains for example?

First of all there are other companies that can provide the same service and that they can step in to become substitutes for the effective firm. But also one of the things about bankruptcy and insolvency is to try to ensure that these assets continue to operate. Now yes there might not be operators as efficient as it was, there might be some friction in the process, but again I go back to my example of the meltdown of the entire merchant energy sector in the United States, and it did not result in any disruption in gas or electricity service and it was basically a financial hit to the creditors. The other example that I go through in the paper is the tsunami, which caused huge disruptions in logistic networks, but basically that's sort of the economy broader effects and were relatively well-managed.

Any advice on my paper, anything I should focus on?

I think that one of the interesting issues is that people think that the bankruptcy is sort of a death of the company, but no it's really not. I think it would be interesting to look at a particular firm or a particular sector, or for example look at the ramifications of the Swiss bankruptcy law, if a big Swiss trader went bankrupt. Look at commodity Swiss trading law, what has happened to other companies that have gone bankrupt in Switzerland what would happen, and how would that process work for commodity traders.

Appendix 3: Commodity trading firms and banks figures

Most of the data following comes from 2014 annual reports of firms. However, some companies are privately held and therefore do not necessarily disclose their financial statements. However, older information or bribes of information are available. Because of the importance of those companies on their respective markets (banking and commodities) and in order to be as close as possible to the current situation, this information is displayed below with the mention of the year it refers to.

Commodity trading firms in U.S.\$ million	Total assets	Total liabilities	Equity	Revenues	Net Income	Equity/Total Assets ratio in %	Net Profit Margin in %
ADM	44'027	24'397	19'630	81'201	2'248	44,59	2,77
Bunge	21'432	12'742	8'690	57'610	517	40,55	0,90
Cargill	62'329	34'098	28'231	134'872	1'870	45,29	1,39
Louis Dreyfus	19'400	14'498	4'935	64'719	646	25,44	1,00
Gunvor 2012	13'394	11'155	2'239	93'146*	319*	16,72	0,34
Gunvor 2014				88'000	267		0,30
Glencore	152'205	99'725	51'480	221'073	2'440	33,82	1,10
Koch				115'000			
Mercuria				106'000			
Noble	20'002	14'938	5'064	85'816	133	25,32	0,15
Trafigura	39'600	34'017	5'557	127'600	1'100	14,03	0,86
Vitol 2013	35'063	26'285	8'779	306'991*	837	25,04	0,27
Vitol 2014				270'000			
Total	407'452	271'855	134'605	1'351'891	10'058		

* not taken into account in the total because of the availability of the 2014 data

ADM: total assets of \$44.027 billion, total liabilities of \$24.397 billion, equity of \$19.63 billion, revenues of \$81.201 billion net earnings of \$2.248 billion (ADM (Archer Daniels Midland), 2015)

Bunge: total assets of \$21.432 billion, total liabilities of \$12.742 billion, equity of \$8.69 billion, revenues of \$57.61 billion, net earnings of \$517 million (Bunge, 2015)

Cargill: total assets of \$62.329 billion, total liabilities of \$34.098 billion, equity of \$28.231 billion, revenues of \$134.872 billion, net earnings of \$1.87 billion (Cargill, 2015)

Louis Dreyfus: total assets of \$19.4 billion, liabilities of \$14.498 billion, equity of \$4.935 billion, revenues of \$64.719 billion, net earnings of \$646 million (Louis Dreyfus, 2015)

Gunvor : total assets of \$13.394 billion, total liabilities of \$11.155 Billion, equity of \$2.239 billion, revenues of \$93.146 billion, net earnings of \$319 million as of 31 December 2012, revenues of \$88 billion, net earnings of \$267 million in 2014 (Gunvor Group LTD, 2013)

Glencore: total assets of \$152.205 billion, total liabilities of \$99.725 billion, equity of \$51.48 billion, revenues of \$221.073 billion, net earnings of \$2.444 billion (Glencore, 2015)

Koch: revenues of \$115 billion (Forbes, 2015)

Mercuria: turnover of \$106 billion (Mercuria, 2015)

Noble: total assets of \$20.002 billion, total liabilities of \$14.938 billion, equity of \$5.063 billion, revenues of \$85.816 billion, net earnings of \$132.524 million (Noble Group, 2015)

Trafigura: total assets of \$39.6 billion, total liabilities of \$34.017 billion, equity of \$5.557 billion, revenues of \$127.6 billion, net earnings of \$1.1 billion

Vitol: 2014: revenues of \$270 billion, 2013: total assets of \$35.063 billion, total liabilities of \$26.285 billion, equity of \$8.779 billion, revenues of \$306.991 billion, net earnings of \$837 million (Vitol Holding B.V., 2015)

Banks in U.S.\$ million	Total assets	Total liabilities	Equity	Revenues	Net Income	Equity/Total Assets ratio in %	Net Profit Margin in %
JP Morgan Chase	2'573'126	2'341'061	232'065	94'205	21'762	9,02	23,10
Bank of America	2'104'534	1'861'063	243'471	85'116	4'833	11,57	5,68
Citigroup	1'843'000	1'631'000	212'000	76'900	7'313	11,50	9,51
Wells Fargo	1'687'155	1'501'893	185'262	84'347	23'057	10,98	27,34
Bank of New York Mellon	385'303	349'424	35'879	15'692	2'651	9,31	16,89
HSBC Holdings	2'634'193	2'434'161	200'032	62'002	14'705	7,59	23,72
BNP Paribas	2'527'593	2'413'679	113'914	42'227	6'617	4,51	15,67
Crédit Agricole	2'145'000	2'033'000	111'430	36'780	6'422	5,19	17,46
Barclays	2'115'074	2'012'338	102'736	39'388	5'369	4,86	13,63
Deutsche Bank	2'078'637	1'989'563	89'088	38'928	2'057	4,29	5,28
Total	20'093'615	18'567'182	1'525'877	575'585	94'786		

JP Morgan Chase: total assets of \$2.573,126 trillion, total liabilities of \$2.341,061 trillion, equity of \$232.065 billion, revenues of \$94.205 billion, net earnings of \$21.762 billion (JP Morgan Chase & Co., 2015)

Bank of America: total assets of \$2.104,534 trillion, total liabilities of \$1.861,063 trillion, equity of \$243.471 billion, revenues of \$85.116 billion, net earnings of \$4.833 billion (Bank of America Corporation, 2015)

Citigroup: \$1.843 trillion in assets, total liabilities of \$1.631 trillion, equity of \$212 billion, revenues of \$76.9 billion, net earnings of \$7.313 billion (Citigroup, 2015)

Wells Fargo: total assets of \$1.687,155 trillion, total liabilities of \$1.501,893 trillion, equity of \$185.262 billion, revenues of \$84.347 billion, net earnings of \$23.057 billion (Wells Fargo & Company, 2015)

Bank of New York Mellon: total assets of \$385.303 billion, total liabilities of \$349.424 billion, equity of \$35.879 billion, revenues of \$15.692 billion, net earnings of \$2.651 billion (The Bank of New York Mellon Corporation, 2015)

HSBC Holdings: total assets of \$2.634,193 trillion, total liabilities of \$2.434,161 trillion, equity of \$200.032 billion, revenues of S\$62.002 billion, net earnings of \$14.705 billion (HSBC Holdings plc, 2015)

BNP Paribas: total assets of €2.077,759 trillion (\$2.527,593 trillion)⁴⁹, total liabilities of €1.984,118 trillion (\$2.413,679 trillion), equity of €93.641 billion (\$113.914, 2765 billion), revenues of €38.822 billion (\$42.2269 billion), net earnings of €5.439 billion (\$6.617 billion) (BNP Banque nationale de Paris et de Paribas, 2015)

Crédit Agricole: total assets of €1.763 trillion (\$2.145 trillion), total liabilities of €1.671,4 trillion (\$2.033 trillion), equity of €91.6 billion (\$111.43 billion), revenues of €30.234 billion (\$36.78 billion), net earnings of €5.279 billion (\$6.422 billion) (Crédit Agricole Group, 2015)

Barclays: total assets of £1.357,906 trillion (\$2.115,074 trillion)⁵⁰, total liabilities of £1.291,948 trillion (\$2.012,338 trillion), equity of £65.958 billion (\$102.736 billion), revenues of £25.288 billion (\$39.388 billion), net earnings £3.447 billion (\$5.369 billion) (Barclays PLC, 2015)

Deutsche Bank: total assets of €1.708,703 trillion (\$2.078,637 trillion), total liabilities of €1.635,481 trillion (\$1.989,563 trillion), equity of €73.223 billion (\$89.0879 billion), revenues of €32 billion (\$38.928 billion), net earnings of €1.691 billion (\$2.057 billion) (Deutsche Bank, 2015)

⁴⁹ All euros to U.S. dollar estimations based on the exchange rate from the Internal Revenue Service (IRS) on 31 December 2014; European euro currency to United States dollar currency at \$1 U.S. dollar = €0.822 Euro which equals to €1 Euro = 1.2165. (IRS Internal Revenue Service, 2015)

⁵⁰ All pound sterling to U.S. dollar estimations based on the exchange rate from the Internal Revenue Service (IRS) on 31 December 2014; United Kingdom pound sterling currency to United States of America dollar currency at \$1 U.S. dollar = £0.642 which equals to £1 pounds = 1.5576 (IRS Internal Revenue Service, 2015)

Appendix 4: U.S. Dollar vs Commodities' Prices

Frequency: Quarterly	Producer Price Index All Commodities	Trade Weighted U.S. Dollar Index: Major Currencies
2000-10-01	135,5	105,8402
2001-01-01	137,8	105,4479
2001-04-01	136,2	109,0391
2001-07-01	133,4	108,0610
2001-10-01	129,4	108,8885
2002-01-01	128,9	111,5730
2002-04-01	130,8	107,5014
2002-07-01	131,7	102,9709
2002-10-01	133,1	102,8151
2003-01-01	138,0	97,9981
2003-04-01	137,2	93,5000
2003-07-01	138,1	93,2457
2003-10-01	139,2	87,9355
2004-01-01	142,2	85,4723
2004-04-01	146,3	88,1177
2004-07-01	147,7	86,5736
2004-10-01	150,5	81,8339
2005-01-01	152,1	81,3526
2005-04-01	154,5	83,6411
2005-07-01	158,7	84,6148
2005-10-01	164,3	85,8459
2006-01-01	162,8	84,9440
2006-04-01	165,4	82,0958
2006-07-01	166,7	81,6915
2006-10-01	164,1	81,7092
2007-01-01	166,7	81,9650
2007-04-01	172,8	79,4375
2007-07-01	173,7	77,1433
2007-10-01	177,4	73,4167
2008-01-01	183,9	72,0401
2008-04-01	196,0	70,8411
2008-07-01	200,5	73,4578
2008-10-01	178,0	81,4166
2009-01-01	169,5	82,9720
2009-04-01	171,3	79,5883
2009-07-01	173,9	75,3877
2009-10-01	176,9	72,8800
2010-01-01	182,1	74,8771
2010-04-01	184,2	77,5999
2010-07-01	184,6	75,8686
2010-10-01	188,0	72,9556

2011-01-01	195,9	71,8073
2011-04-01	203,7	69,5269
2011-07-01	203,8	69,7322
2011-10-01	200,8	72,3635
2012-01-01	202,2	72,8834
2012-04-01	201,8	73,9515
2012-07-01	202,4	74,0933
2012-10-01	202,3	73,1901
2013-01-01	203,6	74,8636
2013-04-01	204,0	76,4944
2013-07-01	204,2	76,5367
2013-10-01	201,9	75,7660
2014-01-01	205,5	76,8994
2014-04-01	208,2	76,3620
2014-07-01	207,1	77,8036
2014-10-01	200,4	82,5939
2015-01-01	191,6	89,4053
2015-04-01	192,8	89,9448

All indexes are in U.S. dollar.

Trade Weighted U.S. Dollar Index: Major currencies index includes the Euro Area, Canada, Japan, United Kingdom, Switzerland, Australia, and Sweden (Board of Governors of the Federal Reserve System (US), 2015).

Producer Price Index All Commodities is an index price regrouping all commodities recorded by the U.S. Bureau of Labor Statistics (US. Bureau of Labor Statistics, 2015).

Appendix 5: Volume of Imports and Exports Vs Commodities' Prices

On the graph (Figure 1) related to the table presented below, the quarterly Producer Price Index of All commodities is displayed alongside the quarterly average volumes of trades (determined by the average between imports and exports) of goods and services. As there was no accessible data regarding the historical volume of trades in commodities specifically, the volume of imports and exports of goods and services is considered a close enough indicator of the evolution of the trades in commodities, since commodities are included in the count of goods and services.

Frequency: quarterly	Imports	Exports	Average Imports and Exports: Volume for the World	Producer Price Index All Commodities
1968-01-01				34,0
1968-04-01	311'674'127'222	251'887'045'115	281'780'586'169	34,2
1968-07-01	331'185'099'000	267'006'222'909	299'095'660'954	34,3
1968-10-01	341'105'237'834	275'198'284'875	308'151'761'355	34,5
1969-01-01	340'602'569'311	273'857'407'373	307'229'988'342	35,0
1969-04-01	365'998'001'398	292'451'236'160	329'224'618'779	35,5
1969-07-01	372'621'668'692	296'607'405'973	334'614'537'332	35,8
1969-10-01	379'536'117'260	303'661'227'045	341'598'672'153	36,1
1970-01-01	390'691'179'378	312'751'048'513	351'721'113'946	36,6
1970-04-01	399'811'015'772	381'201'530'234	390'506'273'003	36,8
1970-07-01	406'703'547'340	385'809'976'180	396'256'761'760	37,0
1970-10-01	413'945'680'939	394'966'316'760	404'455'998'850	37,1
1971-01-01	415'855'843'783	399'036'338'797	407'446'091'290	37,6
1971-04-01	426'280'976'513	407'625'101'184	416'953'038'848	38,1
1971-07-01	433'642'077'896	421'201'500'483	427'421'789'190	38,4
1971-10-01	429'527'314'011	416'447'021'585	422'987'167'798	38,4
1972-01-01	453'772'943'582	431'576'411'585	442'674'677'584	39,1
1972-04-01	456'522'720'867	439'473'486'686	447'998'103'777	39,5
1972-07-01	469'288'255'866	451'444'301'503	460'366'278'684	40,1
1972-10-01	493'211'190'869	475'321'686'101	484'266'438'485	40,5
1973-01-01	513'633'350'574	491'339'581'587	502'486'466'080	42,5
1973-04-01	522'022'494'084	504'787'944'982	513'405'219'533	44,5
1973-07-01	528'216'701'283	510'811'790'414	519'514'245'848	46,4
1973-10-01	540'289'244'207	524'644'806'368	532'467'025'288	46,7
1974-01-01	542'332'016'857	538'226'064'283	540'279'040'570	49,9

1974-04-01	551'289'251'571	545'005'713'111	548'147'482'341	51,6
1974-07-01	551'658'771'543	545'951'227'374	548'804'999'458	55,3
1974-10-01	536'109'452'183	539'584'874'921	537'847'163'552	57,2
1975-01-01	505'975'423'247	522'994'089'548	514'484'756'397	57,2
1975-04-01	495'408'822'254	523'458'526'544	509'433'674'399	57,8
1975-07-01	510'534'933'452	531'959'380'366	521'247'156'909	59,0
1975-10-01	532'551'695'387	552'377'493'700	542'464'594'544	59,7
1976-01-01	552'758'037'265	568'295'718'487	560'526'877'876	59,9
1976-04-01	570'674'852'007	583'608'180'336	577'141'516'172	60,9
1976-07-01	584'987'525'715	598'504'023'483	591'745'774'599	61,6
1976-10-01	593'524'571'110	605'745'051'266	599'634'811'188	62,1
1977-01-01	596'643'308'079	608'220'408'375	602'431'858'227	63,5
1977-04-01	604'802'425'496	621'285'532'065	613'043'978'780	65,0
1977-07-01	602'744'449'564	630'544'206'259	616'644'327'912	65,1
1977-10-01	606'149'099'296	637'763'492'555	621'956'295'925	65,9
1978-01-01	617'543'316'542	644'546'363'774	631'044'840'158	67,5
1978-04-01	629'040'849'889	667'188'267'045	648'114'558'467	69,5
1978-07-01	643'994'536'955	675'230'787'592	659'612'662'273	70,6
1978-10-01	663'361'997'481	687'487'605'181	675'424'801'331	72,2
1979-01-01	669'399'847'441	692'157'330'475	680'778'588'958	74,8
1979-04-01	688'479'114'909	704'946'779'679	696'712'947'294	77,5
1979-07-01	698'614'895'845	721'045'686'686	709'830'291'266	79,9
1979-10-01	709'274'448'847	738'553'045'695	723'913'747'271	82,7
1980-01-01	720'024'579'692	755'426'030'376	737'725'305'034	86,5
1980-04-01	705'309'482'949	744'057'544'567	724'683'513'758	88,3
1980-07-01	690'991'721'963	740'375'811'253	715'683'766'608	91,2
1980-10-01	697'023'817'424	753'952'155'206	725'487'986'315	93,3
1981-01-01	707'766'423'563	766'840'432'868	737'303'428'215	96,1
1981-04-01	714'507'381'552	786'721'043'867	750'614'212'709	98,3
1981-07-01	719'454'837'202	795'726'061'385	757'590'449'293	98,9
1981-10-01	725'605'017'132	801'378'526'392	763'491'771'762	98,8
1982-01-01	720'944'676'124	799'540'141'948	760'242'409'036	99,7
1982-04-01	712'271'851'163	798'836'349'342	755'554'100'252	99,8
1982-07-01	708'325'983'455	790'088'356'666	749'207'170'060	100,2
1982-10-01	693'604'685'121	789'502'403'248	741'553'544'185	100,3
1983-01-01	701'293'778'887	790'861'728'659	746'077'753'773	100,4
1983-04-01	719'726'954'784	808'945'232'955	764'336'093'869	100,7
1983-07-01	743'549'197'274	824'762'620'318	784'155'908'796	101,7
1983-10-01	773'193'141'124	848'773'263'473	810'983'202'298	102,2
1984-01-01	803'273'495'942	878'762'375'774	841'017'935'858	103,3
1984-04-01	815'812'778'141	888'617'006'719	852'214'892'430	104,0

1984-07-01	837'744'048'610	909'373'672'993	873'558'860'801	103,8
1984-10-01	844'724'864'733	917'290'426'830	881'007'645'782	103,5
1985-01-01	872'858'651'837	925'943'849'955	899'401'250'896	103,3
1985-04-01	878'331'438'125	930'140'761'876	904'236'100'001	103,4
1985-07-01	877'461'616'955	933'684'644'131	905'573'130'543	102,7
1985-10-01	890'162'830'435	955'475'630'959	922'819'230'697	103,3
1986-01-01	893'518'858'271	938'099'300'781	915'809'079'526	101,7
1986-04-01	914'920'235'490	958'907'936'184	936'914'085'837	99,8
1986-07-01	928'216'776'347	974'628'253'914	951'422'515'131	99,4
1986-10-01	930'203'671'754	988'734'919'273	959'469'295'514	99,7
1987-01-01	933'189'591'788	1004'700'932'771	968'945'262'280	100,9
1987-04-01	957'515'164'500	1023'092'082'654	990'303'623'577	102,5
1987-07-01	984'980'258'558	1052'301'710'111	1018'640'984'334	103,7
1987-10-01	1'016'966'592'666	1'071'076'019'880	1'044'021'306'273	104,2
1988-01-01	1'027'553'298'808	1'081'708'670'451	1'054'630'984'630	104,8
1988-04-01	1'048'799'063'544	1'107'307'890'348	1'078'053'476'946	106,5
1988-07-01	1'082'985'047'859	1'130'609'853'100	1'106'797'450'480	108,0
1988-10-01	1'110'338'180'727	1'149'061'118'268	1'129'699'649'497	108,5
1989-01-01	1'131'806'472'148	1'172'877'509'692	1'152'341'990'920	110,9
1989-04-01	1'150'661'973'110	1'188'524'923'608	1'169'593'448'359	112,8
1989-07-01	1'159'113'988'863	1'215'737'702'528	1'187'425'845'695	112,4
1989-10-01	1'177'174'568'364	1'221'657'851'736	1'199'416'210'050	112,8
1990-01-01	1'198'610'799'761	1'254'865'745'057	1'226'738'272'409	114,5
1990-04-01	1'213'939'257'656	1'268'930'403'473	1'241'434'830'565	114,3
1990-07-01	1'225'259'748'560	1'300'278'883'855	1'262'769'316'208	116,5
1990-10-01	1'237'009'299'944	1'319'386'502'299	1'278'197'901'122	119,9
1991-01-01	1'230'142'444'184	1'317'240'901'605	1'273'691'672'895	117,5
1991-04-01	1'254'550'865'221	1'346'827'089'598	1'300'688'977'409	116,3
1991-07-01	1'283'541'036'932	1'380'771'293'704	1'332'156'165'318	116,1
1991-10-01	1'307'003'325'748	1'409'508'997'305	1'358'256'161'526	116,2
1992-01-01	1'346'718'254'992	1'444'008'744'131	1'395'363'499'562	115,9
1992-04-01	1'366'036'356'382	1'463'033'703'735	1'414'535'030'059	117,2
1992-07-01	1'369'963'830'612	1'482'196'866'437	1'426'080'348'525	117,9
1992-10-01	1'391'441'821'585	1'502'828'856'947	1'447'135'339'266	117,8
1993-01-01	1'397'065'367'408	1'511'539'673'124	1'454'302'520'266	118,4
1993-04-01	1'413'108'428'339	1'524'954'979'956	1'469'031'704'147	119,5
1993-07-01	1'440'016'879'162	1'554'720'596'175	1'497'368'737'669	118,9
1993-10-01	1'472'761'899'270	1'599'790'551'975	1'536'276'225'622	118,9
1994-01-01	1'488'483'269'233	1'617'102'843'708	1'552'793'056'470	119,4
1994-04-01	1'535'000'777'291	1'683'082'941'596	1'609'041'859'443	120,0
1994-07-01	1'566'533'935'605	1'722'231'735'002	1'644'382'835'303	121,0

1994-10-01	1'634'095'034'071	1'783'484'369'024	1'708'789'701'548	121,4
1995-01-01	1'658'074'804'056	1'826'591'477'920	1'742'333'140'988	123,4
1995-04-01	1'708'278'783'976	1'855'949'359'757	1'782'114'071'866	124,9
1995-07-01	1'741'730'897'185	1'880'267'272'431	1'810'999'084'808	125,2
1995-10-01	1'776'215'864'665	1'906'171'970'906	1'841'193'917'785	125,5
1996-01-01	1'821'391'818'216	1'950'976'418'487	1'886'184'118'351	126,3
1996-04-01	1'855'628'901'185	1'969'111'771'646	1'912'370'336'415	127,8
1996-07-01	1'896'407'776'815	2'022'769'325'378	1'959'588'551'097	128,2
1996-10-01	1'951'776'706'696	2'070'330'787'813	2'011'053'747'255	128,4
1997-01-01	2'011'088'898'124	2'133'428'193'889	2'072'258'546'007	128,5
1997-04-01	2'069'630'485'198	2'211'749'993'297	2'140'690'239'247	127,2
1997-07-01	2'113'202'836'305	2'263'851'854'953	2'188'527'345'629	127,2
1997-10-01	2'156'269'314'411	2'295'785'537'353	2'226'027'425'882	127,5
1998-01-01	2'186'730'877'250	2'314'986'696'683	2'250'858'786'967	125,0
1998-04-01	2'192'138'092'245	2'324'913'931'413	2'258'526'011'829	124,9
1998-07-01	2'202'234'201'455	2'336'762'465'950	2'269'498'333'703	124,3
1998-10-01	2'225'996'807'295	2'347'973'132'307	2'286'984'969'801	123,5
1999-01-01	2'235'536'487'775	2'344'700'940'869	2'290'118'714'322	122,6
1999-04-01	2'307'525'959'384	2'408'503'734'851	2'358'014'847'117	124,5
1999-07-01	2'374'908'678'729	2'491'217'974'849	2'433'063'326'789	126,9
1999-10-01	2'460'120'927'258	2'579'417'778'181	2'519'769'352'720	127,9
2000-01-01	2'546'619'151'802	2'669'926'092'506	2'608'272'622'154	129,6
2000-04-01	2'614'077'654'413	2'747'717'917'289	2'680'897'785'851	132,0
2000-07-01	2'695'293'670'379	2'820'523'549'362	2'757'908'609'871	133,8
2000-10-01	2'757'962'551'852	2'852'099'197'240	2'805'030'874'546	135,5
2001-01-01	2'723'542'379'110	2'850'274'903'335	2'786'908'641'223	137,8
2001-04-01	2'693'869'310'468	2'807'075'857'219	2'750'472'583'844	136,2
2001-07-01	2'662'671'242'133	2'774'659'575'252	2'718'665'408'693	133,4
2001-10-01	2'647'125'119'919	2'767'018'768'355	2'707'071'944'137	129,4
2002-01-01	2'705'203'739'815	2'821'426'103'158	2'763'314'921'487	128,9
2002-04-01	2'786'143'747'970	2'908'630'899'831	2'847'387'323'900	130,8
2002-07-01	2'835'237'427'764	2'959'767'294'005	2'897'502'360'885	131,7
2002-10-01	2'876'658'963'757	2'997'969'323'600	2'937'314'143'678	133,1
2003-01-01	2'925'604'077'926	3'015'137'211'051	2'970'370'644'489	138,0
2003-04-01	2'922'435'376'546	3'023'715'354'164	2'973'075'365'355	137,2
2003-07-01	2'995'183'345'290	3'117'716'866'193	3'056'450'105'741	138,1
2003-10-01	3'110'592'441'738	3'232'624'947'950	3'171'608'694'844	139,2
2004-01-01	3'203'820'049'925	3'328'266'447'778	3'266'043'248'852	142,2
2004-04-01	3'301'471'824'311	3'419'956'712'077	3'360'714'268'194	146,3
2004-07-01	3'366'176'157'422	3'452'506'660'234	3'409'341'408'828	147,7
2004-10-01	3'446'277'165'251	3'527'250'237'287	3'486'763'701'269	150,5

2005-01-01	3'464'710'318'670	3'562'087'802'870	3'513'399'060'770	152,1
2005-04-01	3'574'556'491'212	3'657'114'107'137	3'615'835'299'174	154,5
2005-07-01	3'638'516'458'875	3'729'578'466'134	3'684'047'462'505	158,7
2005-10-01	3'737'523'811'136	3'828'014'268'526	3'782'769'039'831	164,3
2006-01-01	3'834'612'873'193	3'939'530'596'645	3'887'071'734'919	162,8
2006-04-01	3'919'556'322'094	4'015'843'013'288	3'967'699'667'691	165,4
2006-07-01	3'957'577'329'049	4'057'461'267'537	4'007'519'298'293	166,7
2006-10-01	4'044'755'189'224	4'148'782'557'621	4'096'768'873'423	164,1
2007-01-01	4'139'224'819'988	4'230'945'956'664	4'185'085'388'326	166,7
2007-04-01	4'203'286'013'350	4'304'094'841'005	4'253'690'427'177	172,8
2007-07-01	4'288'891'266'344	4'392'370'775'703	4'340'631'021'024	173,7
2007-10-01	4'342'354'443'372	4'452'839'116'312	4'397'596'779'842	177,4
2008-01-01	4'448'022'381'229	4'541'991'991'211	4'495'007'186'220	183,9
2008-04-01	4'433'435'527'082	4'560'555'151'913	4'496'995'339'498	196,0
2008-07-01	4'407'548'239'480	4'542'086'168'830	4'474'817'204'155	200,5
2008-10-01	4'164'316'262'479	4'242'981'313'118	4'203'648'787'799	178,0
2009-01-01	3'780'205'245'648	3'891'328'319'747	3'835'766'782'698	169,5
2009-04-01	3'769'577'598'804	3'919'930'440'321	3'844'754'019'563	171,3
2009-07-01	3'928'710'701'244	4'069'006'054'571	3'998'858'377'907	173,9
2009-10-01	4'062'558'565'370	4'211'808'698'585	4'137'183'631'978	176,9
2010-01-01	4'174'101'199'457	4'319'066'983'112	4'246'584'091'285	182,1
2010-04-01	4'353'581'069'611	4'488'294'784'318	4'420'937'926'965	184,2
2010-07-01	4'444'285'955'073	4'561'254'283'019	4'502'770'119'046	184,6
2010-10-01	4'522'294'298'675	4'664'012'569'080	4'593'153'433'878	188,0
2011-01-01	4'616'039'538'549	4'739'178'817'161	4'677'609'177'855	195,9
2011-04-01	4'630'003'541'736	4'749'476'803'633	4'689'740'172'685	203,7
2011-07-01	4'676'511'021'248	4'826'303'619'974	4'751'407'320'611	203,8
2011-10-01	4'695'634'620'119	4'832'520'727'781	4'764'077'673'950	200,8
2012-01-01	4'739'215'432'938	4'889'724'111'272	4'814'469'772'105	202,2
2012-04-01	4'764'346'897'253	4'940'308'272'369	4'852'327'584'811	201,8
2012-07-01	4'784'201'670'722	4'950'920'351'050	4'867'561'010'886	202,4
2012-10-01	4'776'882'793'446	4'946'026'850'445	4'861'454'821'945	202,3
2013-01-01	4'806'393'206'986	4'991'315'567'479	4'898'854'387'233	203,6
2013-04-01	4'892'647'930'002	5'093'859'489'706	4'993'253'709'854	204,0
2013-07-01	4'931'940'348'452	5'108'833'508'413	5'020'386'928'432	204,2
2013-10-01	4'946'343'575'888	5'163'471'223'910	5'054'907'399'899	201,9
2014-01-01	4'987'104'035'964	5'179'624'793'381	5'083'364'414'672	205,5

All figures in U.S. dollar, except for dates

Producer Price Index All Commodities is an index price in U.S. dollar regrouping all commodities recorded by the U.S. Bureau of Labor Statistics. (US. Bureau of Labor Statistics, 2015)

Imports are the quarterly volume of total imports accounted in the world and labelled in U.S. dollar. It is designated as the World Imports of Goods and Services: Volume for the World© (Organization for Economic Co-operation and Development, 2015).

Exports are the quarterly volume of total exports accounted in the world and labelled in U.S. dollar. It is designated as the World Exports of Goods and Services: Volume for the World© (Organization for Economic Co-operation and Development, 2015).

Appendix 6: Gross Domestic Products and Foreign Direct Investments Flows

Gross Domestic Products			Foreign Direct Investments	
Frequency : yearly	China	India	Chine	Inde
1975	8,699999996	9,149912014	0,00001	85,09
1976	-1,599999998	1,663103637	0,00001	51,11
1977	7,599999996	7,254764586	0,00001	-36,06
1978	11,88190617	5,712532089	0,00001	18,09
1979	7,6	-5,238182703	0,08	48,57
1980	7,80669145	6,735821529	57	79,16
1981	5,172413793	6,006203623	265	91,92
1982	9,016393443	3,47573324	430	72,08
1983	10,7518797	7,288892902	916	5,64
1984	15,20706042	3,820737855	1419	19,24
1985	13,5533294	5,254299224	1956	106,09
1986	8,925791386	4,776564171	2243,73	117,73
1987	11,7198666	3,965355634	2313,53	212,32
1988	11,30063966	9,627782919	3193,68	91,25
1989	4,214559387	5,947343329	3392,57	252,1
1990	3,933823529	5,533454563	3487,11	236,69
1991	9,267775027	1,056831432	4366,34	75
1992	14,27646488	5,482396022	11007,51	252
1993	13,93767705	4,750776219	27514,95	532
1994	13,07807061	6,658924067	33766,5	974
1995	10,99384345	7,574491841	37520,53	2151
1996	9,924722662	7,549522248	41725,52	2525
1997	9,226887728	4,049820849	45257,04	3619
1998	7,853489523	6,184415821	45462,75	2633
1999	7,618173474	8,845755561	40318,71	2168
2000	8,429282161	3,840991157	40714,81	3587,989747
2001	8,29837441	4,823966264	46877,59	5477,637624
2002	9,090909091	3,803975321	52742,86	5629,671078
2003	10,01997337	7,860381475	53504,7	4321,076437
2004	10,07564297	7,922936613	60630	5777,8072
2005	11,35239142	9,284831507	72406	7621,768707
2006	12,6882251	9,263964759	72715	20327,76392
2007	14,19496167	9,801360337	83521	25349,89177

2008	9,623377486	3,890957063	108312	47138,73284
2009	9,233551095	8,479786622	95000	35657,25241
2010	10,63170823	10,25996299	114734	27431,23138
2011	9,484506202	6,63834773	123985	36190,39865
2012	7,750297593	5,081417925	121080	24195,76625
2013	7,68380997	6,899217233	123911	28199,44604

Gross Domestic Products in % and Foreign Direct Investments in U.S. dollar

The Foreign Direct Investment (FDI) is the amount of money invested in a country by foreigners on a long-term basis. To be considered as a foreign investment, investors must acquire at least 10% of equity ownership – being considered as a lasting interest - in a company based on another country than the investor's one. (Conférence des Nations Unies sur le commerce et développement, 2015)

Gross Domestic Products (GDP): "GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current U.S. dollar. Dollar figures for GDP are converted from domestic currencies using single year official exchange rates. For a few countries where the official exchange rate does not reflect the rate effectively applied to actual foreign exchange transactions, an alternative conversion factor is used" (The World Bank Group, 2015).