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Faculty of Humanities

Supervisor: Dr. Jeffrey Fynn-Paul

Second Reader: Dr. Mohammadbagher Forough

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The Netherlands

Master thesis on the topic:

Can Financial Speculation on Foodstuffs affect Food Prices?

A Critical Interpretive Synthesis of the Academic Literature

For the acquisition of the academic degree Master of Arts

Author:	Damian Uebersax
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Abstract

After the 2008 – 2009 food crisis, an academic debate emerged surrounding the question if financial speculation on foodstuffs (FSF) can affect the spot prices of food. This thesis consists of a critical interpretive synthesis of the academic literature on FSF. It analyses studies which have been instrumental in shaping the debate surrounding FSF according positionality theory guidelines in a *meta-data analysis*. The results of the meta-data analysis are then compared in a *refutational synthesis*, which concludes that the scholars which claim that FSF can affect food prices presented the more compelling argumentation according to positionality theory.

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"Economics: the only subject

in which the same questions

yield different responses every year."

(Danny Kaye, US-American actor and comedian, 1911-1987)

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I. Introduction

More than one billion people suffered from hunger during the worldwide food crises of 2008 – 2009 and 2010 – 2011. Multiple factors contributed to said food crises, including natural catastrophes, reduced offer due to food-stocking in emerging countries, slowing down in productivity growth rates, and de-stocking of grains during the 1990s (Headey and Fan, 2008; Timmer, 2015). Financial speculation on foodstuffs (FSF) has been considered as another potential major contributing factor to the crises (McMichael, 2009; Vander Stichele, Kerckhoffs, and Van Os, 2010; Xiong, 2014).

On the one hand, a group of scholars claimed that FSF can affect the spot prices of food. This group is composed of economists as well as other academic scholars (Chadwick, 2015; Cheng and Xiong, 2014; De Schutter, 2010; 2011; Esmel, 2016; Masters and White, 2008).

On the other hand, a group exclusively composed by economists criticized this hypothesis and maintained that FSF did not contribute to the increase in food prices during the food crises (Boyd, Harris, and Li, 2018; Haase, Seiler Zimmermann, and Zimmermann, 2016; Krugman, 2008; 2011; Sanders and Irwin, 2015; 2017; Will, Prehn, Pies, et al., 2013; 2016).

The two groups of scholars gave multiple explanations in order to elucidate how they found such strongly diverging results, the main reason being that no database reflects the global values of FSF perfectly and that no methodology adapted to such a situation exists (Sanders and Irwin, 2015; 2017; Will and Pies, 2017). Some authors mentioned that the differences in results within the academic literature could also be explained by looking at the ways studies complied with positionality theory guidelines (Chadwick, 2015; Esmel, 2016). Positionality theory assumes that any academic opinion is always biased but that scholars can minimize their biases by being aware of them and by discussing the limitations of their work (Amoureux and Steele, 2016; England, 1994). Similarly to any other researchers, economists are expected to respect positionality guidelines. Yet, Chadwick argued that, because economists lean on empirical methods, they earned the status of “experts” in the field of finance (Chadwick, 2015; Mitchell, 2002). Esmel further explained that most economists argue

that FSF cannot affect the spot prices of food and that the overall academic debate therefore seems to have shifted in their favor (Esmel, 2016).

However, Chadwick questioned the legitimacy of the expert-status enjoyed by economists as she does not believe that all economists limit the biases that can flaw their work. Specifically, she claims that they are subject to conflicts of interest similarly to any researcher and that they bias the literature by not disclosing these conflicts of interest (Amoureux and Steele, 2016; Chadwick, 2015). However, Chadwick's hypothesis has never been verified. Hence, in order to change this situation, this thesis will aim to answer the following research question:

Have positionality theory guidelines been respected by scholars participating in the debate concerning the influence of FSF on food prices and how did this affect their results?

By analyzing studies published between 2008 and 2018, this thesis will reason that the scholars arguing that financial speculation on foodstuffs can influence food prices present the more compelling argumentation. Principally, this claim results from two factors. On the one hand, economists disputing a causal link between FSF and food prices failed to comply to positionality theory guidelines in their research. On the other hand, economists presenting econometric tests which indicate that FSF can affect food prices did so by respecting positionality theory guidelines.

In order to provide evidence for this claim, this thesis will first discuss the available literature surrounding FSF and its effects on the 2008 – 2009 and 2010 – 2011 food crises. It will then discuss the methodology it will lean on in order to critically review said literature. Subsequently, it will present a meta-analysis of the academic debate surrounding FSF called *critical interpretive synthesis*. The first step of this critical interpretive synthesis is to critically analyze the different academic papers which discuss the influence of FSF on food prices, a process called a *meta-data analysis* (Timulak, 2014). The meta-data analysis will point out irregularities in the methodology of papers contributing to the debate surrounding FSF and analyze to what extent they respect positionality theory guidelines. In doing so, the meta-data analysis will not expect studies to respect all positionality theory guidelines perfectly because too much reflectivity would lead research in social sciences to be content-less and thus irrelevant (Baron, 2016). However, the meta-data analysis will aim to see if the authors of the

papers it reviews presented some understanding of their own biases and attempted to limit them. Following this meta-data analysis, this thesis will proceed to the second step of its critical interpretive synthesis called the *refutational synthesis* (Timulak, 2014). In this step, the thesis will compare the results it obtained in its meta-data analysis in order to point out which papers present the most compelling arguments. Although the qualitative nature of this critical interpretive analysis inherently links its results to the subjectivity of its author, its methodology has been shown to successfully provide critical reviews of the literature on a specific subject and can deliver previously unavailable and relevant academic arguments on said subject (Barnett-Page and Thomas, 2009; Dixon-Woods, Cavers, Agarwal, et al., 2007; Timulak, 2014). This thesis will provide such relevant arguments in two ways:

First, this thesis will show the necessity of a reconsideration of the academic debate surrounding FSF because a number of studies which contributed to said debate contain serious flaws and should be considered with much precaution. This reconsideration is needed because academic studies concerning FSF rely on previous research in order to support their argumentation without always questioning the relevance of the existing literature. As Border [et al.] have shown, this can lead to a situation in which more than 1'000 studies are made irrelevant if the errors of previous academic research are not pointed out, a scenario which this thesis aims to avoid (Border, Johnson, Evans, et al., 2019).

Second, the results of this thesis show that FSF is likely to contribute to increasing food prices during food crises and thus probably contributed to bringing half the world's population in a situation in which they risked hunger in 2009. Thus, this thesis could provide policy-makers an academic support so that they can implement limits on FSF in order to avoid similar situations in the future.

I. Literature Review

In order to illustrate the debate surrounding the influence of FSF on the prices of food, this chapter will start by describing the food crises of 2008 – 2009 and 2010 – 2011. It will then briefly describe the history of speculation on foodstuffs. Afterwards, the literature review will discuss the different stances on the influence of FSF on food prices. It will start by explaining the arguments of the economists who argue that financial speculation on commodities cannot influence food prices. Subsequently, this chapter will describe the arguments of the scholars who claim the contrary.

1) The 2008 – 2009 and 2010 – 2011 food crises

The food crises which took place in 2008 – 2009 and 2010 – 2011 were shaped by their worldwide reach. What is meant by food crisis is a situation in which food gets increasingly more expensive and eventually becomes unaffordable for the poorer members of society (Bar-Yam, Lagi, and Bar-Yam, 2015; Holt-Giménez and Patel, 2009; McMichael, 2009).

There were a number of damaging effects linked to the crises, above all the fact that more than a billion humans were simultaneously suffering from hunger at the height of the crisis. Beside health-issues amongst the concerned population, the food crises also led to violence and riots which sparked in countries in which the prices of food were becoming increasingly unaffordable. More than twenty countries faced such riots during the 2008 – 2009 food crisis and ten others faced large-scale protests against their respective governments (Hendrix, Haggard, and Magaloni, 2009; Bar-Yam, Lagi, and Bar-Yam, 2015; McMichael, 2009). In Haiti, the increase in food prices led the country's inhabitants to eat biscuits made out of mud and to attempt dangerous journeys to safer places in order to survive. The consequent riots and protests forced the Haitian president, Jacques-Édouard Alexis, to step down (Chadwick, 2015; Hendrix, Haggard, and Magaloni, 2009; Holt-Giménez and Patel, 2009).

While smaller than the previous food crisis, the 2010 – 2011 crisis nonetheless sparked large-scale protests of its own in Haiti and Argentina. In addition, South Africa faced major riots in the arguably biggest wave of violence since the end of the apartheid (Bar-Yam, Lagi,

and Bar-Yam, 2015). All these effects explain why scholars are looking for ways to avoid repetitions of such food crises.

A multitude of factors contributed to the global rise of food prices during the 2008 – 2009 and 2010 – 2011 food crises. The increased demand for food, mainly in China and India, was one of them. Its effects were amplified by an emerging demand for biofuels (Headey and Fan, 2008; McMichael, 2009; Timmer, 2015). At the same time, droughts, particularly in Australia, rose food prices from the supply side, simultaneously to productivity slowdowns in agriculture (Headey and Fan, 2008; Lagi, Bar-Yam, Bertrand, et aL., 2011; McMichael, 2009). The depreciation of the world's major trading currency, the US dollar, as well as rising oil prices were external factors which also contributed to the rise in food prices, the former on the demand side and the latter on the supply side (Headey and Fan, 2008; Lagi, Bar-Yam, Bertrand, et al., 2011). In addition, countries such as India, Pakistan, Ukraine, Argentina, and China all restricted the exports of domestic grains and fertilizers after the early signs of the 2007 – 2008 *Great Crash* (Cheng and Xiong, 2014). Hence, 40% of the world's food was not available on the global market anymore, a factor which again rose the prices of food from the supply side (Headey and Fan, 2008).

One last potential major contributor to the increasing food prices is FSF, although its role in the food crises is intensively debated (De Schutter, 2010; Headey and Fan, 2008; Lagi, Bar-Yam, Bertrand, et al., 2011). However, in order to deliberate if FSF participated in the increase of food prices, the next section will explain what FSF is and how it came into existence.

2) The history of financial speculation on foodstuffs

Historically, farmers faced uncertainties concerning their income because fluctuations in food prices could occur unpredictably. Hence, farmers and their families were always at risk of seeing their living conditions deteriorate. In order to provide them with a certain level of security, forward contracts were invented. "Forwards" settle the price of a commodity in advance by selling the future harvest according to the price of the concerned commodity at

the time of the contract's signature[1]. Such contracts assure farmers a certain revenue in case the spot price falls until the harvest is made. For this security, farmers usually have to pay a certain fee to their contractors, called "hedgers". In the cases in which the spot prices of the concerned commodity rise or stay steady, the hedgers make a profit (De Schutter, 2010; Spratt, 2013; Vander Stichele, Kerckhoffs, and Van Os, 2010). The first recorded speculation on corn harvest through a forward contract dates back to 1851 (Spratt, 2013). Yet, some authors believe that forwards existed in Europe already as early as the 17th century (Chadwick, 2015).

In order to allow for more clarity, future contracts, a formalized form of forwards, were established in the United States in 1865 (Spratt, 2013). Because "futures" were registered as speculative good, the risk that the hedgers would not end up paying for them was drastically reduced (Vander Stichele, Kerckhoffs, and Van Os, 2010). Conversely, because hedgers were taking on a large risk by signing future contracts, they were allowed to trade those to commercial speculators willing to take on the risks they involved (Spratt, 2013). The more the futures markets grew, the more actors became involved in order to make profits without actually aiming to become physically implicated in the selling food. Thus, the US limited their freedoms of actions and the involved actors in the 1930s (Esmel, 2016; Spratt, 2013). In the 1980s, speculation on foodstuffs was gradually allowed again on a bigger scale and in the early 2000s, the US implemented changes that allowed FSF to function similarly to any other form of financial speculation (Chapman, 2008; De Schutter, 2010; Esmel, 2016; Spratt, 2013). In Europe, financial markets were mainly self-regulated and speculation on foodstuffs trends followed the examples from the US but never preceded them (Esmel, 2016).

While these new legislations in the US certainly set the stage for an increase in FSF, other reasons participated in the exponential rise in speculation on commodities. The first such reason was the burst of the dot-com bubble in 2001, which pushed non-traditional speculators towards commodity index speculation because the latter had become more interesting financially than the stock market (Chadwick, 2015; Vander Stichele, Kerckhoffs, and Van Os, 2010). Afterwards, rising food prices from 2004 onwards made the commodity market increasingly attractive for speculators. When the early signs of a drastic increase in

[1] In some cases, the involved parties can also modify the contract-clauses and settle the prices according to different criteria (Vander Stichele, Kerckhoffs, and Van Os, 2010).

food prices appeared in 2006 and were followed by the *Great Crash* in 2007, speculation on commodities rocketed to unforeseen levels (Chadwick, 2015; McMichael, 2009; Spratt, 2013; Timmer, 2015; Xiong, 2014). This was once again a response from financial investors which considered the real estate and stock markets to not be profitable any longer. In the meantime, rising food prices during the 2008 – 2009 food crisis made FSF even more profitable. Thus, financial speculation on the commodities markets reached unprecedented heights (Girardi, 2012). Estimates from the Bank for International Settlements show that investments in FSF were 17 times as big in 2007 as they were in 1998 (De Schutter, 2010). In 2010 – 2011, during the next food crisis, FSF rose once again (*Africa Research Bulletin*, 2013; Girardi, 2012).

With FSF shooting up during the 2008 – 2009 food crisis, some authors wondered if FSF was contributing to the rocketing food prices. In order to discuss this hypothesis, the next section will elaborate on the emergence of the debate about the influence of FSF on the spot prices of food.

3) The emergence of the debate surrounding FSF

The first specific call for care against FSF which attracted worldwide attention was the "Masters Hypothesis", named in 2008 after its creator Michael Masters. At the time, futures were continuously yielding profits due to the food crisis and their prices were therefore increasing. According to Masters and his co-writer Adam White, this increase in future prices led spot food prices to increased as well (Cheng and Xiong, 2014; Liao-Etienne, Irwin, and Garcia, 2012; Masters and White, 2008).

The Masters Hypothesis rapidly sparked an academic debate. On the one hand, a multitude of authors agreed with Masters and White and called for regulations against excessive speculation on commodities (Chapman, 2008; De Schutter, 2010; 2011; FAO, 2010; FAO, IMF, WFP, et al., 2011; Holt-Giménez and Patel, 2009; Lagi, Bar-Yam, Bertrand, et al., 2011; McMichael, 2009; Timmer, 2009; 2010; Vander Stichele, Kerckhoffs, and Van Os, 2010). On the other hand, a number of authors claimed that FSF had no influence on food prices and was thus a morally safe activity (Headey and Fan, 2008; Irwin, Sanders, and Merrin, 2009; Liao-Etienne, Irwin, and Garcia, 2012; Krugman, 2008). Controversial opinions on the debate were possible because no data-set was available in which all worldwide transactions concerning FSF

were listed (Algieri, 2014; 2016; Emekter, Jirasakuldech, and Went, 2012; Gilbert and Pfuderer, 2014a; Lagi, Bar-Yam, Bertrand, et al., 2011; Masters and White, 2008; Timmer, 2009; 2012).

In order to eventually deliberate on the debate surrounding FSF, the following sections will describe both competing groups of scholars which discuss FSF.

4) Scholars claiming that FSF contributed to the rise of food prices

The first authors to have brought attention to the potential negative effects of FSF were, as previously mentioned, Masters and White (Masters and White, 2008). Their report's conclusion states that the sharp increase in food prices preceding the year 2008 was only possible because FSF contributed to that increase (Masters and White, 2008). The Masters Hypothesis attracted worldwide attention, notably thanks to Michael Masters' presentation of his ideas in front of the US Congress and the U.S. Commodity Futures Trading Commission (CFTC) (FAO, 2010; Irwin, 2012). Multiple authors supported the Masters Hypothesis in the following years and argued that financial speculation had contributed to the rising food prices. Most of these authors demanded more regulation on FSF (Chapman, 2008; De Schutter, 2010; 2011; FAO, 2010; FAO, IMF, WFP, et al., 2011; Holt-Giménez and Patel, 2009; McMichael, 2009; Timmer, 2010).

Once the food crises had come to an end, more studies were published which supported the claim that FSF can affect food prices by indicating that both food crises had led to the creation of financial bubbles in the commodities markets. A number of those studies provided econometric tests and economic models intended to provide a counter-argument for the economists that suggested that financial speculation cannot influence the spot prices of food. The methods used in those studies included causality tests, rank-order tests, contemporaneous tests, and other econometric calculations (Algieri, 2014; 2016; Bozorgmehr, Gabrysch, Müller, et al., 2013; Emekter, Jirasakuldech, and Went; 2012; Gilbert, 2010; Gilbert and Pfuderer, 2014a; Girardi, 2012; Lagi, Bar-Yam, Bertrand, et al., 2011; Timmer, 2009; 2012; Van Huellen, 2018). In addition to these econometric papers, a multitude of scholars did not use statistical computations but provided insights into the debate by

arguing from other perspectives (*Africa Research* Bulletin, 2013; Bar-Yam, Lagi, and Bar-Yam, 2015; Chadwick, 2015; Esmel, 2016; Goceljak, 2017; Spratt, 2013; Timmer, 2015; Xiong, 2014).

One specific request made by a multitude of scholars demanded governmental agencies to provide better data-availability and transparency concerning the commodity market (Emekter, Jirasakuldech, and Went, 2012; De Schutter, 2010; FAO, IMF, WFP, et al., 2011; Girardi, 2012; Spratt, 2013; Timmer, 2010). Indeed, because data-availability concerning FSF is limited, it was difficult for authors to produce robust arguments based on empirical means. Hence, better transparency and data-availability would allow them to get an improved understanding of the potential negative effects that FSF could have on food prices and on the regulations that were the best suited in order to limit such effects (Emekter, Jirasakuldech, and Went, 2012; FAO, IMF, WFP, et al., 2011; Girardi, 2012; Spratt, 2013).

Finally, Cheng and Xiong wrote a critical literature review discussing the different argumentations available across the academic debate surrounding FSF (Cheng and Xiong, 2014; Xiong, 2014). They reasoned that the arguments provided by authors which argued that FSF can affect food prices were more compelling than the arguments of scholars disagreeing with that claim. Thus, Cheng and Xiong concluded that FSF can probably affect food prices, although they stated that they could not be certain of that conclusion because of the lacking data-availability on FSF (Cheng and Xiong, 2014).

5) Economists claiming FSF did not contribute to the rise of food prices

After the formulation of the Masters Hypothesis, a multitude of economists argued that FSF was not capable to affect the prices of food. One scholar which rapidly did so by referring to economic theory was Paul Krugman (Krugman, 2008; 2011).

Once the 2008 – 2009 crisis had played out, the number of economists agreeing with Krugman increased significantly. Because they did not see any evidence for the existence of a financial bubble in commodities markets during the food crises, these authors started by arguing that scholars claiming that FSF had an influence on food prices did not present a compelling argument. Additionally, these economists maintained that speculation during extreme market volatility is a historically repeated pattern which never indicated a causality

link between such speculation and the value of the goods that were being speculated on (Heady and Fan, 2008; Irwin, Sanders, and Merrin, 2009). Further studies combined this economic intuition with causality tests or other econometric tests such as rank-order and rank correlations tests (Auerlich, Irwin, and Garcia, 2014; Booth, 2015; Haase, Seiler Zimmerman, and Zimmerman, 2016; Irwin, 2012; Liao-Etienne, Irwin, and Garcia, 2012; Sanders and Irwin, 2015; 2017; Stoll and Whaley, 2010; 2011; Will and Pies, 2017; Will, Prehn, Pies, et al., 2013; 2016). Some of these economists acknowledged that causality tests were not ideal in order to estimate the influence of FSF on the spot prices of food because no recognized data-set existed which encompassed all FSF. Yet, they claimed that their tests represented the reality better than the studies concluding that FSF can influence food prices (Auerlich, Irwin, and Garcia, 2014; Sanders and Irwin, 2017).

Two notable quantitative meta-studies[2] have been published which claim to show that FSF cannot affect food prices. The meta-study written by Will [et al.] took into consideration studies which included econometric calculations and which were published by recognized journals between 2010 and 2012 (Will, Prehn, Pies, et al., 2016). The meta-study written by Haase, Seiler Zimmerman, and Zimmerman took into consideration a much broader range of papers (Haase, Seiler Zimmerman, and Zimmerman, 2016).

Finally, Boyd, Harris, and Li wrote a critical literature review concerning the potential influence of FSF on the prices of food. In this paper, Boyd [et al.] discussed studies which contributed to the academic debate surrounding FSF. They concluded that the authors who argue that FSF cannot affect food prices present the better argumentation (Boyd, Harris, and Li, 2018).

According to Chadwick, economists who argue that FSF cannot affect food prices generally present their studies as if they were objective when writing them. She claims that this is due to the expert-status enjoyed by economists in the field of finance (Chadwick, 2015). Esmel develops by stating that this expert-status has played in favor of the economists

[2] A quantitative meta-study is a type of study which regroups the results of a large number of previous empirical studies on a specific subject. It then takes those results and produces a new empirical study based on them. This meta-study is then considered as a statistically relevant paper encompassing the results of all the sources it contains (Bozorgmehr, Gabrysch, Müller, et al., 2013). This procedure is mainly used in hard sciences and its applicability to social science has been disputed (Bozorgmehr, Gabrysch, Müller, et al., 2013; Haase, Seiler Zimmerman, and Zimmerman, 2016).

claiming that FSF cannot affect food prices because most econometric papers on the subject concluded in their favor (Esmel, 2016). However, this hypothesis has not been verified.

Consequently, in order to provide necessary new insights in the accademic debate surrounding FSF, this thesis will review recognized papers discussing FSF and will critically asses if all scholars participating in the debate surrounding FSF minimized the biases they faced during their research. The next chapter will outline the methodology that this thesis will follow in order to pursue that objective.

II. Methodology

According to a number of observers, economists' contributions to the academic debate surrounding FSF are expected to be free of biases due to their reliance on empirical methods (Chadwick, 2015; Esmel, 2016). Because a majority of those economists claim not to have found a causal relation between increasing FSF and rising food prices, the debate has turned in their favor (Boyd, Harris, and Li, 2018; Chadwick, 2015; Esmel, 2016). However, several authors have questioned this presumed neutrality and have argued that economists can be just as biased as other scholars if they have personal interests in the field of finance but did not prove this hypothesis (Chadwick, 2015; Esmel, 2016). This chapter will explain how this thesis will verify Chadwick and Esmel's hypothesis by providing a critical interpretive synthesis and by leaning on positionality theory.

1) Positionality theory

Positionality theory is a set of academic guidelines which require researchers to be reflective on their work and to actively minimize the biases which originate from their subjectivity (Amoureux and Steele, 2016). England describes reflectivity as "[the] self-critical sympathetic introspection and the self-conscious *analytical* scrutiny of the self as researcher" (England, 1994, 244). Although such reflective behavior on one's work is expected, Timothy Mitchell discussed how researchers often aim to make their work look as objective as possible and discuss their research as a neutral description of reality rather than their personal work (Mitchell, 2002).

Such a lack of reflective behavior amongst researchers is what Chadwick and Esmel specifically criticize concerning the academic debate surrounding FSF. According to them, scholars who claim that FSF influences food prices are more inclined to be reflective on their work and to call for deeper insights in order to be certain of their results than economists arguing the contrary (Chadwick, 2015; Esmel, 2016). In order to verify this hypothesis, next section will describe this thesis' research design.

2) Research Design

Meta-analyses are reviews of the literature of qualitative nature. This thesis will take the form of a meta-data analysis which was developed by Dixon-Woods [et al.] and is called the *critical interpretive synthesis* method (Barnett-Page and Thomas, 2009; Dixon-Woods, Cavers, Agarwal, et al., 2007; Timulak, 2014). As Hart described it, a meta-analysis permits its author to "dig beneath the surface of an argument and be able to see the origins of a piece of research or theory" (Hart, 1998, 111).

The first step of this critical interpretive synthesis consists of a qualitative meta-study[3] called a *meta-data analysis*. A meta-data analysis is a study which analyzes a multitude of previously published research papers and then proceeds to review these sources critically based on a method appropriate to answer its research question (Barnett-Page and Thomas, 2009; Timulak, 2014). This thesis will analyze the reviewed papers due to their methodology and by drawing from positionality theory guidelines[4] (Amoureux and Steele, 2016). The meta-data analysis will not expect all criteria to be respected perfectly but will search for some understanding of its guidelines. Indeed, Baron complements positionality theory by stating that "self-critique cannot go on indefinitely because at some point positionality will stop it" (Baron, 2016, 195).

The methodology of the meta-data analysis of this thesis will lean on guidelines for critical reviews provided by Adams [et al.]. The latter reasons that a critical review should follow specific objectives in order to control if positionality theory was respected (Adams, Khan, Raeside, et al., 2007):

- Understanding the limitations of a study's methodology and its effects on that research;

[3] The term *meta-study* could lead to confusion in this thesis. Indeed, in quantitative research, the term meta-study describes a research paper which empirically compares the results of previously published empirical studies (Bozorgmehr, Gabrysch, Müller, et al., 2013). Two such meta-studies will be reviewed in this thesis (Haase, Seiler Zimmerman, and Zimmerman, 2016; Will, Prehn, Pies, et al., 2016). Thus, the term meta-study will be used to describe quantitative meta-studies while this thesis will describe its critical part with the more specific term *meta-data analysis*.

[4] The considered positionality theory guidelines will examine the ways authors reflected on their biases and the limitations of their work as well as the ways they disclosed potential conflicts of interest they could suffer from due to their backgrounds.

- Recognizing what purpose an author aimed to achieve when writing his research;
- Recognizing the potential biases an author might try to hide, notably by not reporting his previous research and his potential conflicts of interest or by claiming that a certain opinion is dominant across the literature in order to strengthen his argumentation while this is not the case.

The second step of the critical interpretive synthesis is called a meta-ethnography. In this thesis, this second step will take the form of a *refutational synthesis*. A refutational synthesis compares the research of scholars presenting diverging arguments on a specific academic debate and discusses them by explaining which group of scholars present the overall more compelling argumentation (Barnett-Page and Thomas, 2009; Noblit and Hare, 1988; Timulak, 2014). In the case of this thesis, the refutational synthesis will compare the results obtained in the meta-data analysis.

3) Limitations

The main limitation of a critical interpretative synthesis is that its methodology relies on a qualitative assessment of the discussed literature and is thus inherently linked to its author and his background (Timulak, 2014). As such, this thesis is bound to be biased by its author's subjectivity (Amoureux and Steele, 2016). Hence, this thesis will attempt to limit such potential biases by selecting papers which were instrumental in shaping the debate on FSF and by applying a common methodic to the different sections of the meta-data analysis.

Another limitation a critical interpretative synthesis can face is that it compares studies based on the understanding its author has of the latter. Some critiques have pointed out that the interpretative nature of such a procedure does not provide the best predispositions for the subsequent comparison between the analyzed studies (Timulak, 2014). Nonetheless, critical interpretive syntheses have been successful in providing satisfactory critical reviews of the literature and can thus offer previously unavailable insights on a specific subject (Barnett-Page and Thomas, 2009).

A final limitation faced by critical interpretive syntheses is linked to the way the sources it analyzes are selected which will be discussed in the next section.

4) Data Selection

In order to limit the range of analyzed studies, this thesis will only take papers which contributed to the academic debate surrounding FSF[5] before January 2019 into consideration. Because of the limited size of this thesis, it will have to restrict itself to analyze some of the most relevant contributions to the academic debate surrounding FSF. While this thesis aims to minimize potential biases by selecting papers which were instrumental in shaping the debate, this selection remains subjective to a certain degree.

In order to represent the academic debate concerning the influence of FSF on the spot prices of food adequately, both parts of the meta-data analysis will first analyze the work of scholars which did not provide econometric evidence legitimizing their opinion on FSF but were instrumental in bringing attention to the academic debate on the subject. They will then discuss econometric studies which strongly influenced the debate. Consequently, the first part of the meta-data analysis will discuss two meta-studies. Finally, both parts of the meta-data analysis will examine one critical literature review each.

[5] All papers written by a recognized academic scholar as well as the reports published by International Organizations and Non-Governmental Organizations (NGOs) which respect academic norms such as satisfactory citations of sources are considered as part of the academic debate surrounding FSF.

III. Meta-Data Analysis, Part 1: Studies reasoning that FSF cannot affect food prices

This chapter will critically review the academic contributions of economists who claimed that FSF cannot affect food prices. It will start by discussing the contributions made by Krugman, one of the worldwide most renowned economists. It will then present a critical analysis of the work of Irwin, Stoll, and Whaley, three economists which profoundly affected the debate surrounding FSF. Afterwards, the following sections will discuss two meta-studies in which economists claim that FSF did not affect food prices, written by Will [et al.] and Haase [et al.]. Finally, in order to see how the knowledge created by the authors discussed in this chapter affected the academic debate surrounding FSF, this chapter will look at a critical literature review written by Boyd [et al.].

1) Non-Econometric Studies

One of the first economists to doubt the existence of a causal relation between FSF and the spot prices of food was Paul Krugman, who this thesis will take as example for the non-econometric studies which claimed that FSF cannot affect food prices. Krugman emphasized that FSF could not directly affect food prices (Krugman, 2008). Moreover, Krugman doubted that FSF could affect food prices at all because, according to him, no econometric test showed convincingly that FSF had contributed to increase the prices of food (Krugman, 2011). As multiple authors later confirmed, financial speculation influences neither the demand nor the supply of agricultural commodities and can thus not directly affect food prices (Chadwick, 2015; Girardi, 2012; Timmer, 2015). However, Krugman omitted to make clear in his statement that FSF could have an indirect effect on the spot prices of food but that he did not believe that such indirect effects existed (Chadwick, 2015; Krugman, 2008; 2011; Timmer, 2015).

In his articles, Krugman relies on economic theory in order to justify his argumentation. This methodology is as adequate as any other methodology in order to participate in the debate surrounding FSF. Nevertheless, when looking at Krugman's articles, this meta-data analysis found multiple shortcomings according to positionality theory.

First, when Krugman declared that no convincing econometric proof had shown that FSF can affect food prices, he did so without mentioning that multiple studies had included econometric tests indicating that FSF can affect food prices (Cheng and Xiong, 2014; Esmel, 2016; Timmer, 2009). In so doing, he failed to present an adequate representation of the academic literature available to him, a procedure which according to Adams [et al.] is inadequate in academic research and constitutes a methodological inadequacy (Adams, Khan, Raeside, et al., 2007).

Second, by blurring the line between his opinion and a conclusion based on academic research, Krugman tricked his readers into believing that his opinion was based on in-debt scholarly work. By doing so, Krugman failed to respect positionality guidelines (Amoureux and Steele, 2016; England, 1994). While his articles concerning FSF were published as opinion-pieces and are thus protected by the potential excuse that they did not aim to be academic, multiple authors explained that this excuse should not be valid because those articles nonetheless shaped the academic debate (Chadwick, 2015; Esmel, 2016; Spratt, 2013).

Third, Krugman's specific demand for econometric proof meant that he was not ready to acknowledge the value of any non-economic contribution to the debate surrounding FSF (Krugman, 2011). This position indicates that Krugman valued the expert-status that he and other economists were given with respect to financial speculation on commodities (Mitchell, 2002). Krugman seems to have been aware of this expert-status and shows this by adopting a confronting dialectic of superiority in his articles. Indeed, he named his 2008 article "Speculative nonsense once again" and included an oversimplified straight-lined offer and demand graph in order to describe the worldwide commodity market in his 2011 article (Krugman, 2008; 2011).

All in all, Krugman failed to respect positionality theory in a multitude of ways even though this meta-data analysis did not expect him to be perfectly reflective on his subjectivity. Hence, Krugman's articles should be considered with much precaution.

2) Econometric Studies

The following sections will look at authors who used econometric studies in order to claim that FSF cannot affect food prices.

a) Stoll and Whaley

Hans Stoll and Robert Whaley are two economists which highly influenced the academic debate surrounding FSF (Boyd, Harris, and Li, 2018; Sanders and Irwin, 2017; Will, Prehn, Pies, et al., 2016). In their studies, Stoll and Whaley argued that FSF cannot affect food prices and backed this claim up with econometric evidence (Stoll and Whaley, 2010; 2011).

When discussing the existing literature on the debate surrounding FSF, Stoll and Whaley indicated that they reflected on the work of other authors when writing their papers. By doing so, they satisfactorily estimated the biases primary sources they used could include and respected positionality theory (Amoureux and Steele, 2016). However, the same cannot be said for the entirety of their research.

First, Stoll and Whaley did not mention any limitations that their work faced (Stoll and Whaley, 2010; 2011). Therefore, these two economists indicated that they did not reflect on the potential flaws the tests they provided could have encountered and that they potentially did not limit the biases that could have arisen during their research-process (England, 1994). It is possible that Stoll and Whaley relied on the expert-status they enjoyed as economists in the field of finance in order to make their research look as objective as possible (Mitchell, 2002).

Second, Stoll and Whaley mentioned whenever their studies were realized under direct funding (Stoll and Whaley, 2010; 2011). However, these economists failed to disclose their backgrounds. Indeed, Stoll has worked for a multitude of financial trading groups and held the Public Director position of Interactive Brokers Group, the largest internet trading platform in the US, between 2008 and 2017 (Interactive Brokers Group Inc., 2016; Vanderbilt University, 2011). Whaley, for his part, created the Market Volatility Index of the Chicago Board Options Exchange, a major center for commodity trading (Rapier, 2017). While Stoll and Whaley's backgrounds do not mean that these authors were bound to support the idea that

FSF cannot affect commodity prices, the fact that the authors did not mention potential conflicts of interest that could arise from their other activities indicates that they failed to respect positionality guidelines (Amoureux and Steele, 2016).

This section has shown how Stoll and Whaley failed to respect multiple positionality theory guidelines when writing their studies. The next section will look at the studies of another renowned economist, Irwin, in order to see if he respected positionality theory more adequately.

b) Irwin

Scott Irwin published an extensive amount of studies concerning FSF (Auerlich, Irwin, and Garcia, 2014; Irwin, 2012; Irwin, Sanders, and Merrin, 2009; Liao-Etienne, Irwin, and Garcia, 2012; Sander and Irwin, 2015; 2017). This extensive contribution to the academic debate concerning the potential influence of FSF on food prices has allowed him to be highly recognized in this academic field (Chadwick, 2015; Cheng and Xiong, 2014; Esmel, 2016; Haase, Seiler Zimmerman, and Zimmerman, 2016).

Irwin's studies rely on econometric tests estimating if FSF can affect the prices of food (Auerlich, Irwin, and Garcia, 2014; Irwin, 2012; Irwin, Sanders, and Merrin, 2009; Liao-Etienne, Irwin, and Garcia, 2012; Sander and Irwin, 2015; 2017). These tests rely on recognized methodologies and are thus non-controversial. However, multiple aspects of Irwin's research limit the validity of his studies.

First, the literature reviews of Irwin's early papers only discussed the work of other economists presenting empirical studies. Additionally, Irwin only mentioned unsuccessful tests for a potential causality between FSF and the rise of food prices (Irwin, 2012; Kocieniewski, 2013; Liao-Etienne, Irwin, and Garcia, 2012). When this aspect was criticized for creating a biased image of the debate surrounding FSF, Irwin acknowledged the existence of successful causality tests between FSF and rising spot prices of food in footnotes while continuing to highlight the unsuccessful ones (Auerlich, Irwin, and Garcia, 2014). In his latest papers, Irwin discussed empirical papers which supported both sides of the debate surrounding FSF. However, he discredited the work of authors which provided evidence showing causality between rises in FSF and increases in food prices. Specifically, Irwin pointed

out that no study was able to produce an econometric test indicating a direct effect of FSF on food prices. Yet, similarly to Krugman, Irwin failed to mention that scholars only attempt to show that FSF indirectly affects the prices of commodities (Sanders and Irwin, 2017; Timmer, 2015). This evolution in Irwin's studies shows that he never presented a reality-adequate representation of the literature in his papers, an aspect which constitutes a methodological shortcoming (Adams, Khan, Raeside, et al., 2007).

Second, Irwin criticized the studies which did not use data provided by the CFTC when proceeding to econometric tests. Yet, the CFTC declared to be intrigued by the Masters Hypothesis and is thus unlikely to claim that the data it provides should be considered as the only database good enough in order to empirically evaluate if FSF can contribute to increases in food prices since no database adequately covers all FSF (Kocieniewski, 2013). This misrepresentation of the accuracy of different databases concerning FSF constitutes another methodologically questionable aspect of Irwin's research.

Third, Irwin claims to produce an objective research because he relies on econometrics in his work, using the expert-status enjoyed by economists in the field of finance to his advantage (Kocieniewski, 2013). Because it is impossible in social sciences for a researcher to remain objective to his work, Irwin's argumentation shows that he failed to reflect on his personal background and interests when writing his papers (Mitchell, 2002). As such, he failed to respect positionality theory guidelines.

Fourth, Scott Irwin faced serious criticism in an extensive *The New York Times* article by David Kocieniewski for hiding his large financial interests in relation with financial speculation on agricultural commodities (Kocieniewski, 2013). Indeed, Kocieniewski listed the consultancy roles Irwin has been holding for multiple hedge funds, investment banks, and other speculating institutions. Kocieniewski also pointed out that the Chicago Mercantile Exchange, a major commodities exchange center, is highly involved in the business school of the University of Illinois at Urbana-Champaign, where Irwin is employed. This involvement includes spending over a million dollars in donations to the University together with major commodities traders (Kocieniewski, 2013). By not disclosing that information in his studies, Irwin decided to hide his personal conflicts of interest. As such, Irwin failed to minimize the potential biases that his background could have on his work to a large extent.

c) Summary

The shortcomings found in econometric studies which claimed that FSF cannot affect food prices demonstrate the reasons for which Irwin, Stoll, and Whaley's contributions to the academic debate surrounding FSF should be considered with much precaution. Indeed, these studies all comprised methodological flaws and failed to respect positionality theory guidelines satisfactorily. In order to present the influence that the work of these economists had on the academic debate surrounding FSF, the next two sections will each discuss a quantitative meta-study.

3) Meta studies

a) Will, Prehn, Pies, and Glauben

The first meta-study this thesis will review was written by Will [et al.]. The first part of this meta-study only takes peer-reviewed papers published by specific econometric journals between 2010 and 2011 into consideration. The second part of the study reviews papers based on econometric tests published in the same years but by less renowned publishers (Will, Prehn, Pies, et al., 2016).

Will [et al.] explain that the lack of satisfactory data-sets available on global FSF values limits the relevance of single studies, an opinion shared by numerous scholars (Boyd, Harris, and Li, 2018; Cheng and Xiong, 2014; Emekter, Jirasakuldech, and Went, 2012). Will [et al.] indicated that this pushed them to write their meta-study (Will, Prehn, Pies, et al., 2016). As such, Will [et al.] showed that they reflected on the available academic literature on FSF (Amoureux and Steele, 2016). Nonetheless, their meta-study presents multiple methodological flaws and failures to respect positionality guidelines.

First, a meta-study in social science is expected to summarize an academic debate and to argue which arguments are the most compelling (Boyd, Harris, and Li, 2018; Cheng and Xiong, 2014; Xiong, 2014). However, Will [et al.] listed studies discussing FSF on food prices according to econometric computations based on times-series analyses and assumed that if a majority of these studies argue a certain way, this is going to be academically relevant (Will, Prehn, Pies, et al., 2016). This assumption methodologically limits the meta-study's relevance.

Furthermore, the authors did not explain why they limited themselves to studies based on times-series analyses and did not take other econometric tests or non-econometric studies into account (Will, Prehn, Pies, et al., 2016).

Second, Irwin contributed to six studies the first part of the meta-study reviewed. The other two were written by Stoll and Whaley (Will, Prehn, Pies, et al., 2016). A meta-study which only accounts for the arguments of three scholars cannot constitute satisfactory evidence. On the one hand, the sample of authors is too small in order to constitute a convincing meta-study. On the other hand, the lack of reflectivity Irwin, Stoll, and Whaley applied to their own work when writing their research also limits the relevance of the findings made by the first part of the meta-study.

Third, in the second part of their meta-study, Will [et al.] present 19 papers, only ten of which argue that FSF cannot affect food prices. Such a small majority of papers should not lead the meta-study's authors to claim that the literature provides evidence that FSF does not affect food prices (Will, Prehn, Pies, et al., 2016). Additionaly, Will [et al.] present one of Irwin's considered papers as arguing that FSF has some effects on food prices (Will, Prehn, Pies, et al., 2016). However, the paper in question argued that FSF had no effects on the spot prices of food (Irwin, 2012; Will, Prehn, Pies, et al., 2016). These errors show that the meta-study faces some severe methodological shortcomings.

Fourth, Bozorgmehr [et al.] have looked at the data provided by Will [et al.] in their meta-study and have attempted to recreate adequate computations with methods traditionally used in meta-studies. In this review, Bozorgmehr [et al.] argued that the data provided by Will [et al.] would suggest that FSF does affect food prices (Bozorgmehr, Gabrysch, Müller, et al., 2013; Will, Prehn, Pies, et al., 2016).

Fifth, a considerable amount of the papers which provided econometric evidence indicating that FSF can affect food prices explained that their results did not constitute definitive proof for such an effect. Conversely, most authors claiming the opposite did not ask for such careful consideration of their results. Will [et al.] interpreted this difference as an indication for the fact that the econometric tests which showed that FSF can affect food prices were less relevant than other empirical studies (Will, Prehn, Pies, et al., 2016). However, if authors demand for their accademic research to be carefully interpretated, they indicate their

awareness of the potential positional biases included in their studies and have reflected on them (Amoureux and Steele, 2016; England, 1994). Will [et al.] thus misunderstood this carefulness and showed that they were not familiar with positionality theory guidelines.

Seventh, Will [et al.] failed to mention if and how they attempted to limit their own biases when writing their meta-study. Hence, their meta-study did not respect positionality guidelines (Amoureux and Steele, 2016; Will, Prehn, Pies, et al., 2016). Moreover, the fact that the previous points showed how Will [et al.] biased the results of their research indicates that these authors did not attempt to create a paper as objective as possible.

For all these reasons, the meta-study written by Will [et al.] faced a considerate amount of criticism (Haase, Seiler Zimmerman, and Zimmerman, 2016). Nonetheless, this meta-study is now part of the literature arguing that FSF does not affect food prices and was even cited by Irwin (Boyd, Harris, and Li, 2018; Sanders and Irwin, 2016). The criticism faced by the meta-study written by Will [et al.] had another effect, as it was used as a justification by Haase [et al.] in order to write a second meta-study on the debate surrounding FSF (Haase, Seiler Zimmerman, and Zimmerman, 2016).

b) Haase, Seiler Zimmerman, and Zimmerman

The meta-study written by Haase [et al.] regroups the results of 100 previously published papers which discussed the effects of FSF on the spot prices of food. In their selections of papers, the authors of this meta-study did not limit themselves to studies published in recognized econometric journals, although Haase [et al.] also only took empirical studies into consideration (Haase, Seiler Zimmerman, and Zimmerman, 2016).

Haase [et al.] mentioned that their subjectivity was bound to have played a role in their selection of papers. Indeed, these economists explain that it is not possible to be exempt from any biases when making such a selection (Haase, Seiler Zimmerman, and Zimmerman, 2016). As they clarify, these authors attempted to select sources based on their relevance for the debate and the academic rigorousness of their content. Therefore, Haase [et al.] have satisfactorily considered their positionality when selecting the studies they would review (England, 1994). Yet, their meta-study is not free of flaws.

First, the meta-study written by Haase [et al.] relies on the assumption that if a majority of reviewed empirical studies share an opinion on FSF, the latter has to be accurate (Haase, Seiler Zimmerman, and Zimmerman, 2016). However, this assumption is inapplicable to social sciences because new academic discoveries can disprove a much larger previous literature on a specific subject, as Border [et al.] showed when their results invalidated the findings of over 1'000 studies (Border, Johnson, Evans, et al., 2019; Yong, 2019).

Second, the constant contributions to the academic debate surrounding FSF by authors such as Irwin, Stoll, and Whaley skew quantitative meta-studies towards these authors' opinions (Haase, Seiler Zimmerman, and Zimmerman, 2016). Such a phenomenon is all the more problematic when some of the overrepresented scholars in the meta-study did not respect positionality guidelines when producing their work. Therefore, the meta-study written by Haase [et al.] has a limited relevance.

Third, Haase [et al.] reason in their meta-study that as around 25% of the literature argued that there is a positive influence between FSF and food prices and 25% argued that there is a negative influence of FSF on food prices, those results cancel each other out. Hence, the authors claim, it is unlikely that FSF influences food prices (Haase, Seiler Zimmerman, and Zimmerman, 2016). This assumption is questionable, notably because Haase [et al.] present a dataset with an average of 50% of scholars claiming that FSF affects food prices.

Fourth, Haase [et al.] classified the papers analyzed in their meta-study by valuing papers which pretended to provide statistical proof concerning the influence of FSF on food prices much more than papers being careful with their conclusions (Haase, Seiler Zimmerman, and Zimmerman, 2016). However, a bigger care when making conclusions based on econometric calculations can be linked to a consideration of positionality theory by the authors of the concerned papers (England, 1994).

Fifth, the president of the Swiss Confederation explained in a television debate in 2016 that Haase [et al.] had been commissioned by the Swiss government to deliver a meta-study on the influence of FSF on food prices. The government had done so because it wanted academic support before Switzerland voted in 2016 on an initiative to forbid FSF to which the government was opposed (*Arena*, 2016). However, Haase [et al.] did not mention this

potential conflict of interest in their meta-study and thus failed to comply with positionality theory (Amoureux and Steele, 2016).

c) Summary

The meta-studies written by Will [et al.] and Haase [et al.] have shown how the work of Irwin, Stoll, and Whaley had real repercussions on the literature. Furthermore, these meta-studies included methodological shortcomings of their own and significantly failed to respect positionality guidelines. They should thus also be considered causiously.

The following section will discuss one critical literature review which claims that FSF did not affect food prices. It will do so in order to show how the work of the previously analyzed papers shaped the academic debate concening FSF. It will also analyze this literature review according to positionality theory, in order to see if a contribution which respects positionality theory can nonetheless be detrimental to the overall academic debate surrounding FSF.

4) Critical Literature Review

The literature review written by Boyd [et al.] qualitatively discusses a large number of studies. This literature review presents a multitude of different arguments and explains what factors convinced its authors to think that FSF cannot affect food prices. The methodology of this critical literature review allowed its authors to produce reflective academic work attributable to multiple characteristics (Boyd, Harris, and Li, 2018).

First, the qualitative methodology used by Boyd [et al.] is adapted to the subject they discuss as the authors were able to evaluate which previously published studies contributing to the debate surrounding FSF presented the most compelling arguments.

Second, Boyd [et al.] acknowledged in their study that no research on the influence of FSF on the spot prices of food can be considered as definitive proof because of the lack of an all-encompassing data-sets on FSF (Boyd, Harris, and Li, 2018). By recognizing this aspect of the literature, Boyd [et al.] indicated their awareness of potential biases present in the

literature and acknowledged that their literature review could be affected by them, reflecting satisfyingly in their work and respecting positionality theory guidelines (Amoureux and Steele, 2016).

Third, by acknowledging that their critical literature review is of qualitative nature and is hence linked to their subjectivity, Boyd [et al.] indicated that they are aware of the potential biases their work could have suffered from (Boyd, Harris, and Li, 2018). Such biases are not problematic in academic research because all scholars are subject to them. However, acknowledging their existence is essential as it shows that the authors of academic research are likely to have attempted to limit them (Amoureux and Steele, 2016).

Nevertheless, the literature review written by Boyd [et al.] also faced a specific flaw. Indeed, it only took the work published by economists into consideration without explaining this sources-selection (Boyd, Harris, and Li, 2018). By doing so, it contributed to the strengthening of the expert-status enjoyed by economists in the debate surrounding FSF (Chadwick, 2015; Mitchell, 2002).

All in all, the critical literature review written by Boyd [et al.] respected positionality theory satisfactorily since no work is expected to respect it perfectly (Baron, 2016).

5) Critical Assessment

The studies written by Krugman, Irwin, Stoll, Whaley, Will [et al.] and Haase [et al.] all included serious shortcomings in their methodology and in their compliance with positionality theory guidelines. Nonetheless, they significantly shaped the academic literature surrounding FSF by creating evidence showing that FSF cannot affect food prices. The literature review written by Boyd [et al.] exemplifies how a later study can then lean on the available academic literature written Irwin, Stoll, Whaley, and Pies[6] (Boyd, Harris, and Li, 2018). Yet, as the previous sections have shown, the papers written by Irwin, Stoll, Whaley, and Pies need to be considered with precaution. Consequently, the literature review written by Boyd [et al.], which did satisfactorily respect positionality theory guidelines, is also flawed and should be considered with precaution because it is based on the biased work of other scholars. Indeed,

[6] Ingo Pies was one of the contributors to the meta-study written by Will [et al.].

Border [et al.] showed that academic research leaning on flawed primary sources should be considered with precaution because they replicate the flaws of their sources (Border, Johnson, Evans, et al., 2019).

IV. Meta-Data Analysis, Part 2: Studies reasoning that FSF can affect food prices

In order to represent the academic debate surrounding FSF satisfactorily, this chapter will constitute the second part of the meta-data analysis and will review highly recognized studies which claimed that FSF can affect food prices. It will start by discuss the work of three scholars who participated in the debate surrounding FSF with non-econometric means, Masters, White, and De Schutter. It will then discuss the work of two economists who wrote econometric studies, Gilbert and Algieri. Finally, it will analyze a critical literature review written by Cheng and Xiong.

1) Non-Econometric Studies

a) Masters and White

Michael Masters and Adam White wrote a report which brought much attention to the idea that FSF could contribute to rising food prices (Auerlich, Irwin, and Garcia, 2014; Boyd, Harris, and Li, 2018; Cheng and Xiong, 2014).

In their report, these economists disclosed information about their background and their involvements in financial companies, indicating their subjectivity linked to the topic of FSF. Thus, they respected the positionality theory guidelines which require authors to disclose the potential conflicts of interest they could suffer from (England, 1994). However, Masters and White's report also included some methodological shortcomings and failures to respect positionality guidelines.

First, Masters and White were criticized for describing the correlation they found between rising FSF and increasing food prices as proof for the existence of a causalit relation between the two factors (Boyd, Harris, and Li, 2018; Cheng and Xiong, 2014; Sanders and Irwin, 2017). Yet, no empirical computation can be considered as substantive proof for an effect of FSF on the spot prices of food because of lacking data-availability on the subject (Chadwick, 2015; Gilbert and Pfuderer, 2014; Spratt, 2013). Consequently, Masters and White are unlikely to have satisfactorily reflected on the limitations of the methodology they

employed (Amoureux and Steele, 2016). Michael Masters' repeated presentations of his results as proof, notably in front of the US Congress, support this hypothesis (Irwin, 2012).

Second, Masters and White relied on their background as financial economists in order to present themselves as experts on the subject of FSF. Potentially, this behavior was supposed to legitimize their claim (Mitchell, 2002). Aware of that aspect, Irwin regularly pointed out that Masters and White's background had served to legitimize the Masters Hypothesis (Auerlich, Irwin, and Garcia, 2014; Liao-Etienne, Irwin, and Garcia, 2012; Sanders and Irwin, 2017).

Third, Masters and White failed to discuss their subjectivity and how the latter could have affected their results. As a consequence, these two economists neglected to clarify how they could have minimized the biases that might have flawed their report (Masters and White, 2008). Therefore, Masters and White did not reflect satisfactorily on their work and failed to respect positionality theory guidelines (Amoureux and Steele, 2016).

Because of these multiple shortcomings in Masters and White's report, their work has been discussed with much precaution in the literature (Boyd, Harris, and Li, 2018; Chadwick, 2015; Cheng and Xiong, 2014; Sanders and Irwin, 2017). Nevertheless, Masters and White's report was instrumental in bringing attention to the potential influence of FSF on food prices. The same is true for De Schutter, the author whose work the next section will review.

b) De Schutter

Olivier De Schutter was the special rapporteur for food within the United Nations (UN) between 2008 and 2014 (Chadwick, 2015). His reports were instrumental in bringing attention to the debate surrounding FSF (Auerlich, Irwin, and Garcia, 2014; Chadwick, 2015; De Schutter, 2010; 2011). In his research, De Schutter pointed out correlations between large increases in FSF and in the spot prices of food (De Schutter, 2010).

De Schutter disclosed his role as UN special rapporteur for food in his studies, indicating his subjectivity (De Schutter, 2010; 2011). Because any researcher produces biased work due to his background, this subjectivity did not restrict him from writing academic studies (Mitchell, 2002). Nonetheless, by acknowledging his role within the United Nations,

De Schutter respected positionality guidelines as he indicated that he faced a potential conflict of interest when discussing FSF (England, 1994). Nevertheless, De Schutter's contributions to the debate surrounding FSF faced several shortcomings in terms of methodology and with respect to positionality theory.

First, De Schutter's argumentation was based on pointing out correlations rather than causalities between the rise of FSF and the increase of food prices. However, De Schutter did not explain that correlations do not constitute satisfactory evidence in academic research and thus misled his readers into thinking that he had shown causal effects of FSF on the spot prices of food (Auerlich, Irwin, and Garcia, 2014; Irwin, 2012; Will and Pies, 2017).

Second, De Schutter might have been considered as an expert with relation to FSF due to his employment in relation with food within the UN. Yet, he did not discuss how his employment position affected his opinion and if he attempted to limit the biases resulting from that potential conflict of interest (De Schutter, 2010; 2011). De Schutter could therefore have leaned on an expert-status he enjoyed as UN-employee in order to seem objective. By doing so, De Schutter's contributions to the academic literature failed to comply with positionality guidelines (England, 1994; Mitchell, 2002).

Third, a number of economists claimed that De Schutter's aim to combat hunger pushed him to criticize FSF without seeking substantial proof for its potential negative effects (Auerlich, Irwin, and Garcia, 2014; Irwin, 2012; Will and Pies, 2017). While this hypothesis remains speculative, the lack of reflective thought provided by De Schutter in his papers forced other authors to consider his argumentation cautiously (De Schutter, 2010; 2011).

c) Summary

The last two sections have shown that Masters, White, and De Schutter failed to minimize methodological shortcomings and did not respect positionality theory guidelines satisfactorily in their academic contributions to the debate surrounding FSF. Those contributions should therefore be considered with precaution.

2) Econometric Studies

The following sections will look at the publications by two recognized economists which agreed with Masters, White, and De Schutter but used econometric means to support their argumentations.

a) Gilbert

Christopher Gilbert is an economist specialized in commodity trading. He provided multiple conclusive econometric tests indicating that FSF can affect food prices. Due to these numerous studies concerning the influence of FSF on food prices, Gilbert became one of the most renowned contributors to the debate surrounding FSF (Auerlich, Irwin, and Garcia, 2014; Chadwick, 2015; Gilbert, 2010; Gilbert and Pfuderer, 2014a; 2014b; Spratt, 2013).

In his publications, Gilbert presented his results with precaution in order to produce reflective work by limiting methodological shortcomings it could include and by respecting aspects of positionality theory.

First, Gilbert encouraged his readers to consider the results of his research cautiously, reminding them that econometric tests can be biased and that the lack of satisfactory data-set on FSF can increase those biases. Accordingly, Gilbert called for more research in order to create a substantive literature on the influence of FSF on food prices (Gilbert, 2010; Gilbert and Pfuderer, 2014a; 2014b). By being cautious with his results, Gilbert showed that he reflected on his work and its potential methodological limitations (Amoureux and Steele, 2016).

Second, Gilbert published two causality tests in the same study, one that indicated that FSF cannot influence food prices and one showing the contrary. He then explained why he believed that the second test was more adequate (Auerlich, Irwin, and Garcia, 2014; Gilbert and Pfuderer, 2014a). Amongst the authors discussed in the meta-analysis of this thesis, Gilbert is the only one to have provided an argument that supports the opposite of his expressed opinion. While this aspect could have been used by Gilbert in order to indicate his objectivity in the debate, he instead used his results to show that the econometric tests should not be considered as empirical truths (Chadwick, 2015; Gilbert and Pfuderer, 2014a; 2014b).

By providing this information, Gilbert explained that his work is also subject to biases linked to his subjectivity and thus respected positionality theory guidelines (Amoureux and Steele, 2016). Additionally, the fact that he questioned the relevance of econometric tests with respect to FSF shows that he did not take the expert-status enjoyed by economists for granted (Chadwick, 2015; Esmel, 2016; Gilbert and Pfuderer, 2014a; Mitchell, 2002).

As these examples have shown, Gilbert reflected on his work and took positionality theory into consideration when writing his studies. Nonetheless, Gilbert's papers are not flawless. Indeed, Gilbert did only cite papers written by economists in his work. While he did point out the relevance of economic papers which did not include econometric tests, he did not do the same for other studies (Gilbert, 2010; Gilbert and Pfuderer, 2014a; 2014b). This aspect could indicate that Gilbert was not ready to entirely question the legitimacy of the expert-status enjoyed by economists in the field of finance (Mitchell, 2002). As such, Gilbert indirectly participated in creating an arguably unjustified expert-status that enjoy economists regarding FSF (Chadwick, 2015).

The next section will review the work of Algieri, another economist who provided econometric evidence showing that FSF can affect food prices.

b) Algieri

Bernardina Algieri relied on econometric methods in order to claim that FSF can affect food prices (Algieri, 2014; 2016). Her studies have been considered as relevant and have been discussed by Will [et al.], Haase [et al.], and Irwin (Haase, Seiler Zimmerman, and Zimmerman, 2016; Sanders and Irwin, 2015; 2017; Will, Prehn, Pies, et al., 2016). In her studies, Algieri has deliberated on the multiple limitations of her research, both in terms of the methodology she used and in terms of her positionality.

First, she explained how econometric tests can yield diverging results concerning the influence of FSF on food prices because of differences in their methodological procedures and in the data-sets they use. Therefore, Algieri acknowledged that her results are not constituting satisfactory proof for an effect of FSF on food prices by themselves but have to be considered within a broader literature (Algieri, 2014; 2016). By doing so, Algieri indicated that she

reflected on her work and that she has understood that there can be limitations to the methodology she used (Amoureux and Steele, 2016).

Second, by questioning the relevance of a single econometric test with respect to FSF, Algieri indicated that she is aware of the limitations of such econometric tests and of the biases they can suffer from (Algieri, 2014; 2016). Hence, she decided not to make use of the expert-status enjoyed by economists in relation to FSF but instead decided to put it into perspective (England, 1994; Mitchell, 2002).

Third, Algieri mentioned her affiliations to the University departments she works for as well as the grant under which her research is funded in all her papers (Algieri, 2014; 2016). This position as a researcher constitutes the only potential conflicts of interest that Algieri holds (Università della Calabria, 2017). Therefore, Algieri indicated to her readers what biases her work could include due to her subjectivity with respect to her background and respected positionality theory guidelines (Adams, Khan, Raeside, et al., 2007; Amoureux and Steele, 2016).

Nevertheless, Algieri's papers also contained important limitations in their methodology and in terms of the ways they respected positionality theory.

First, Algieri did not include any paper not written by an economist in her studies. She did not provide any justification for that sources-selection (Algieri, 2014; 2016). Hence, Algieri might not have been ready to acknowledge the value of contributions made by scholars not providing economic arguments. Consequently, she participated in the creation of the idea that only economists disposed of the necessary knowledge in order to contribute to the academic debate surrounding FSF (Chadwick, 2015; Mitchell, 2002).

Second, Algieri did not explicitly discuss the influence her personal opinions as a researcher could have had on the papers she wrote. Indeed, while she did mention that her econometric research faced certain methodological limitations, she did not mention how her opinion could have affected her work (Algieri, 2014; 2016). Thus, Algieri possibly did not adequately reflect on the biases that could have arisen because of her subjectivity (England, 1994).

c) Summary

The last two sections showed that scholars who provided econometric evidence when arguing that FSF can affect food prices were reflective on their work. Although both discussed authors did not provide flawless research, they did reflect satisfactorily on the limits and biases of their work since academic work should not comply perfectly with positionality theory guidelines (Baron, 2016). In order to see how the limitations and strengths of the research of scholars such as Master, White, De Schutter, Gilbert, and Algieri affected the literature surrounding FSF, the next section will now look at a literature review which argued that FSF can affect food prices.

3) Critical Literature Review

Cheng and Xiong wrote a study in which they discussed the available literature on the debate surrounding FSF. In it, they critically reviewed the literature and discussed which scholars presented the more compelling argumentation. As Cheng and Xiong made clear, they did not believe that it is possible to prove the existence of a causal relation between FSF and food prices in a single study because financial markets involve a large number of complicated mechanisms and multiple actors whose actions can all influence the spot and future prices of food (Cheng and Xiong, 2014; Xiong, 2014).

In their critical literature review, Cheng and Xiong were cautious to reflect on their methodology and to adopt positionality theory guidelines.

First, Cheng and Xiong called for further research because they argued that the lack of representative data-sets on FSF did not yield adapted economic research accounting for the biases created by this imperfect data (Cheng and Xiong, 2014; Xiong, 2014). By doing so, Cheng and Xiong reflected on the shortcomings that can be found within the literature. Additionally, Cheng and Xiong also acknowledged that the literature's shortcomings have a snowball effect on the relevance of their critical literature review and that a literature review will only be able to assert any effect of FSF on the prices of food once those shortcomings will have been fixed (Cheng and Xiong, 2014). By providing that reflection, Cheng and Xiong indicated that they

understood the limitations of the methodology on which their critical literature is based (Amoureux and Steele, 2016).

Second, Cheng and Xiong were cautious when deliberating on the potential influence of FSF on food prices by mentioning the limitations of their work and the biases it could include. Thus, these economists indicated that they were aware of their subjectivity as researchers and that they reflected on their background and its influence on their opinion. Hence, these economists respected positionality theory guidelines (England, 1994).

Third, Cheng and Xiong decided to not rely on the expert-status they could have enjoyed as economists when discussing FSF (Mitchell, 2002). Instead, they opted to put said expert-status into perspective (Cheng and Xiong, 2014). Therefore, these economists indicated that they are aware that no researcher can be entirely objective (England, 1994).

However, Cheng and Xiong's literature review also contained a point worth criticizing. Indeed, these authors failed to take into account the work of scholars not belonging to the field of economics when reviewing the literature (Cheng and Xiong, 2014). By doing so, they contributed to strengthen the expert-status enjoyed by economists in the debate surrounding FSF even though they questioned it (Mitchell, 2002).

4) Critical Assessment

This chapter has shown that Masters, White, and De Schutter failed to respect positionality guidelines in their studies, which relied on questionable methodologies. Their research should therefore be considered with precaution. In contrast, Gilbert and Algieri were able to reflect on their work and based their research on adapted methodologies when they reasoned that FSF can affect food prices. The same can be said for the critical literature written by Cheng and Xiong which also concluded that FSF is likely to be able to affect the spot prices of food. Because said literature review leaned on the work of scholars such as Gilbert and Algieri, it avoided basing its argumentation on biased studies. As such, Cheng and Xiong's literature review remained as flawless as possible.

V. Refutational Synthesis

The following refutational synthesis will compare the results found in the two parts of the meta-data analysis. Specifically, it will compare the quality of the methodology and reflectivity proposed by the reviewed papers. Based on this comparison, the refutational synthesis will explain the reasons for which the scholars claiming that FSF can affect food prices present the more compelling argumentation.

1) Non-Econometric Studies

Both parts of the meta-data analysis reviewed the work of authors who wrote non-econometric studies in order to discuss the influence of FSF on food prices. As the meta-data analysis has shown, these studies leaned either on economic theory or on observations of strong correlations between the rise in FSF and the increase in food prices.

In terms of methodology, the considered authors indicated that their main aim was not to prove the existence of a causal relation between increases in FSF and rises in the spot prices of food. Instead, they aimed to provide other insights into the debate (De Schutter, 2010; 2011; Krugman, 2008; 2011; Masters and White, 2008). However, by blurring the line between correlation and causality, these authors misrepresented the results of their research, which should thus be considered with precaution.

In terms of positionality theory, none of the non-econometric papers the meta-data analysis reviewed reflected satisfactorily on their authors' personal biases. Indeed, Krugman misrepresented the available literature on FSF, arguing that no empirical study had shown that FSF could affect food prices while such studies existed (Krugman, 2008; 2011). De Schutter, Masters, and White, for their part, failed to indicate if and how they reflected on their subjectivity and attempted to limit the biases that could have emerged from it (De Schutter, 2010; 2011; Masters and White, 2008). This failure to respect on their subjectivity constitutes another reason why their research should be cautiously considered (Amoureux and Steele, 2016). Finally, De Schutter, Krugman, Masters, and White all relied on an expert-status they enjoyed either due to either their economic background or to their affiliation to the UN in order to gain credibility in their argumentation (De Schutter, 2010; 2011; Krugman, 2008;

2011; Masters and White, 2008). By not discussing that expert-status and by not putting it into perspective, these scholars possibly hoped to be considered as objective in their research. This aspect further limits the relevance of their academic contributions (Mitchell, 2002).

The next section of this refutational synthesis will compare the results work of scholars which provided econometric tests in order to discuss if FSF can or cannot affect food prices.

2) Econometric Studies

The second group of studies the meta-data analysis of this thesis reviewed were papers which provided causality tests, contemporaneous tests, rank-order tests, and other econometric computations in order to support their argumentation (Algieri, 2014; 2016; Auerlich, Irwin, and Garcia, 2014; Gilbert, 2010; Gilbert and Pfuderer, 2014a; 2014b; Irwin, 2012; Irwin, Sanders, and Merrin, 2009; Liao-Etienne, Irwin, and Garcia, 2012; Sanders and Irwin, 2015; 2017; Stoll and Whaley, 2010; 2011).

In terms of methodology, all scholars who provided econometric tests within the debate surrounding FSF which the meta-data analysis reviewed refused to acknowledge the value of contributions by non-economists. In addition, Irwin, Stoll, and Whaley failed to reflect on the ways inadequate data-sets on FSF affected their work and could have biased their results (Auerlich, Irwin, and Garcia, 2014; Irwin, 2012; Irwin, Sanders, and Merrin, 2009; Liao-Etienne, Irwin, and Garcia, 2012; Sanders and Irwin, 2015; 2017; Stoll and Whaley, 2010; 2011). Gilbert and Algieri, on the other hand, reflected on that aspect and discussed it, without however having found a solution in order to limit said biases (Algieri, 2014; 2016; Gilbert, 2010; Gilbert and Pfuderer, 2014a; 2014b).

In terms of respect of positionality theory guidelines, Irwin, Stoll, and Whaley failed to disclose their personal implications in the financial groups and did thus not provide information on their potential conflicts of interest (Auerlich, Irwin, and Garcia, 2014; Irwin, 2012; Irwin, Sanders, and Merrin, 2009; Sanders and Irwin, 2015; 2017; Liao-Etienne, Irwin, and Garcia, 2012; Stoll and Whaley, 2010; 2011). Furthermore, Irwin, Stoll, and Whaley failed to reflect on their subjectivity in their papers and thus might not have attempted to limit the biases tha could have originated from their potential partiality (Amoureux and Steele, 2016).

While Algieri did not reflect on the ways her background could have biased her work either, Gilbert and her discussed the limitations of their findings and provided clear guidelines for further research on the subject (Algieri, 2014; 2016; Gilbert, 2010; Gilbert and Pfuderer, 2014a; 2014b). By doing so, these economists arguing that FSF can affect food prices respected positionality guidelines satisfactorily (Amoureux and Steele, 2016).

As this section has shown, none of the economists discussing the influence of FSF on the spot prices of food with econometric means complied perfectly with positionality theory. Yet, the papers written by Gilbert and Algieri were significantly more respective of positionality theory guidelines than the ones written by Irwin, Stoll, and Whaley. Hence, this refutational synthesis argues that, according to positionality theory, the econometric studies which claimed that FSF cannot affect food prices should be considered with much more precaution than the econometric studies which found that FSF can affect food prices. The following section discusses the meta-studies on the academic debate surrounding FSF.

3) Meta-Studies

The third group of studies the meta-data analysis of this thesis reviewed were quantitative meta-studies, both of which concluded that FSF cannot affect food prices.

In terms of methodology, the meta-studies relied on the assumption that if a majority of the papers they analyzed claimed that FSF was not able to affect the spot prices of food, this was sufficient to constitue satisfactory evidence (Haase, Seiler Zimmerman, and Zimmerman, 2016; Will, Prehn, Pies, et al., 2016). This assumption has to be questioned because a new discovery within an academic debate can disprove previous findings even if the latter are much more numerous (Border, Johnson, Evans, et al., 2019). Furthermore, the large amount of contributions to the academic debate surrounding FSF by authors such as Irwin and Gilbert further skew the results of such quantitative meta-studies. Besides, the meta-study by Will [et al.] includes a small data-sample and made errors in its interpretation of said sample, further limiting its relevance (Will, Prehn, Pies, et al., 2016). Moreover, this meta-study was contested for its results as other scholars reviewed the data it included and found evidence supporting the idea that FSF can affect food prices (Bozorgmehr, Gabrysch, Müller, et al., 2013). For its part, the meta-study written by Haase [et al.] doubtfully assumed that if 25% of its primary

sources found a positive effect of FSF on food prices and 25% found a negative effect, those numbers cancel each-other out (Haase, Seiler Zimmerman, and Zimmerman, 2016).

In terms of compliance with positionality theory, Haase [et al.] reflected on their' subjectivity in their paper selection. However, both meta-studies misinterpreted the importance of primary sources which reflected on the limitations of their studies (Haase, Seiler Zimmerman, and Zimmerman, 2016; Will, Prehn, Pies, et al., 2016). Thus, both studies indicated that they misunderstood positionality theory (Amoureux and Steele, 2016). Haase [et al.] further failed to disclose the fact that the Swiss Confederation ordered their meta-study with the intention to get academic support for its claim that FSF cannot affect food prices (*Arena*, 2016; Haase, Seiler Zimmerman, and Zimmerman, 2016). By doing so, these authors hid a potential conflict of interest they could have had when writing their paper and relied on the assumption that, as economists, they would not be affected by such biases (Mitchell, 2002). Will [et al.], on their side, failed to reflect on the limitations of their study and did not attempt to minimize the biases their research could face due to their personal backgrounds (Will, Prehn, Pies, et al., 2016). Thus, they also failed to respect positionality theory guidelines (England, 1994).

Because both meta-studies reviewed in the meta-data analysis of this thesis presented serious methodological and positionality shortcomings, they have to be considered with much caution. The next section will compare the two critical literature reviews analyzed in the meta-data analysis of this thesis in order to see how they differ from the reviewed meta-studies in the quality of their methodology and their compliance with positionality theory.

4) Critical Literature Reviews

The critical literature reviews analyzed in the meta-data analysis of this thesis each proposed a review of the academic debate surrounding FSF. According to their critical analysis of the discussed literature, the authors of both critical literature reviews then gave their opinion on the potential influence of FSF on food prices (Boyd, Harris, and Li, 2018; Cheng and Xiong, 2014).

In terms of methodology, Boyd [et al.] argued that their critical analysis showed that FSF was unlikely to be able to affect the spot prices of food (Boyd, Harris, and Li, 2018). On the other hand, Cheng and Xiong claimed that their critical review of the academic literature on FSF indicated the contrary (Cheng and Xiong, 2014). Both critical literature reviews are qualitative, which allows their authors to interpret the different contributions to the academic debate surrounding FSF while using precaution when taking papers with questionable content into consideration. As such, both critical literature reviews are based on an academically relevant methodology, even though none of them took the contribution of non-economists to the debate surrounding FSF into consideration.

In terms of positionality theory, both studies reflected on the limited relevance of the results presented in a single study because of potential flaws those could include (Boyd, Harris, and Li, 2018; Cheng and Xiong, 2014). Besides, the authors of both critical literature reviews reflected on the limitations of their papers. As such, both critical literature reviews satisfactorily respected positionality theory guidelines (Amoureux and Steele, 2016).

Yet, because these literature reviews were based on the findings of primary sources, the relevance of the latter needs to be taken into consideration when comparing the two literature reviews. Indeed, if a critical literature review leans on the argumentation of previous studies which left conflicts of interest undisclosed or relied on a flawed methodology, the literature review will perpetuate these errors instead of correcting them. Such a lack of critical thinking towards previous studies can have large negative effects, as the study written by Border [et al.] has shown. Indeed, the latter invalidated more than 1’000 previous studies because they relied on an assumption Border [et al.] disproved (Border, Johnson, Evans, et al., 2019).

5) Discussion

The literature reviews written by Boyd [et al.] and by Cheng and Xiong are both based on a satisfactory methodology and both respect positionality theory guidelines. Yet, this cannot be said about all the primary sources their final argumentation leans on.

Indeed, the meta-data analysis showed that authors who did not use econometric means in their studies failed to respect positionality theory satisfactorily and leaned on questionable methodologies when discussing the potential influence of FSF on food prices. The same can be said for the studies written by Irwin, Stoll, and Whaley, three economists who claimed that FSF cannot affect the spot prices of food by basing their argumentation on econometric tests, and for the meta-studies written by Will [et al.] and Haase [et al.]. On the other hand, Gilbert and Algieri, two economists which relied on economic tests in order to show that FSF can affect food prices, were able to respect positionality theory guidelines satisfactorily and were aware of the limitations of their methodology. Consequently, Cheng and Xiong presented a more compelling argumentation than Boyd [et al.] because they leaned on the studies of Gilbert and Algieri rather than on the studies written by Irwin, Stoll, Whaley, and Pies. Hence, this refutational synthesis concludes that FSF is likely to have affected food prices during the food crises of 2008 – 2009 and 2010 – 2011.

Nonetheless, this thesis acknowledges that its scope is too small in order to be certain of its conclusion. Indeed, the critical interpretive synthesis it proposes would require to analyze a larger sample of primary sources in order to assert its conclusion with more certainty. Furthermore, the conclusion of this critical interpretive synthesis is limited in its relevance because the primary sources it relies on analyzed data-sets with imperfect adequacy to reality. Nevertheless, it brings valuable new insights into the debate surrounding FSF and shows that the latter should be put into perspective because a large number of its contributors failed to indicate how their personal interests affected the work they published.

VI. Conclusion

Since the formulation of the Masters Hypothesis in 2008, an academic debate has developed around the question if financial speculation on foodstuffs can affect food prices. While scholars were quick to point out that FSF was not the main driver of the surges in prices during the 2008 – 2009 and 2010 – 2011 food crises, a number of them nonetheless reasoned that FSF amplified the effects of those crises. On the other hand, a number of economists declared that this was not the case and that FSF cannot affect food prices. Scholars such as Chadwick and Esmel then argued that while those economists were claiming to take part in the academic debate concerning the influence of FSF on food prices from objective standpoints, they had personal interests in the field of finance. In order to verify that claim, this thesis applied a critical interpretive synthesis to the academic literature on the debate surrounding FSF according to positionality theory.

As this critical interpretive synthesis showed, a significant body of the academic literature claiming that FSF cannot affect food prices included methodological flaws and failed to comply with positionality theory guidelines. While the same can be said about some authors claiming that FSF can affect food prices, a number of them provided satisfactory evidence all while respecting positionality theory and using recognized methodological procedures.

Thus, the research question:

Have positionality theory guidelines been respected by scholars participating in the debate concerning the influence of FSF on food prices and how did this affect their results?

can be answered on the provisional grounds of this thesis followingly:

Only the scholars presenting critical literature reviews on the academic debate surrounding FSF and the economists providing econometric tests showing that FSF can affect food prices respected positionality theory guidelines satisfactorily. Other scholars participating in the debate did not reflect on their subjectivity and their results might therefore have been biased. Consequently, the studies written by these scholars should be considered with much precaution. Because the ability of critical literature reviews to remain as little biased as possible is affected by the quality of the research they are based on, the

literature review written by Boyd [et al.] should also be considered cautiously. Hence, this critical interpretive synthesis concluded that it was likely that FSF could affect food prices.

Nonetheless, this critical interpretive synthesis is subject to a number of limitations. First, because of its nature as a qualitative meta-analysis, it is intrinsically linked to its author's subjectivity in its data selection, its meta-data analysis, and its refutational synthesis. As such, it captures a specific knowledge situated in a particular perspective. Yet, as positionality theory explains it, subjective perspectives should be considered as valuable academic research as long as the biases emerging from that subjectivity are minimized. Second, a critical interpretive synthesis aims to provide an oversimplified presentation of the literature and its conclusion is thus limited by the range of primary sources it considers. This is particularly true in the case of this thesis as its limited length required its meta-data analysis to concentrate on a relatively small sample of primary sources. This thesis should thus be considered as a source for more in-debt research but can still provide valuable new insights into the debate surrounding FSF.

Having said all this, the results obtained in this thesis are relevant to the academic debate surrounding FSF as they show the flaws present in existing studies. As such, this thesis proposes a reconsideration of the academic literature due to the biases it contains. Furthermore, this thesis' findings underline the necessity of a reliable worldwide database concerning speculation on commodities. If such a database is not provided, the dispute between scholars discussing FSF will probably not be settled.

Future research should aim to produce other meta-analyses on a broader range of studies which contributed to the academic debate surrounding FSF. Such meta-analyses could provide more precise reflections on the existing academic literature. Those meta-analyses could then either strengthen or refute the argumentation provided in this critical interpretive synthesis. Additionally, further meta-analyses could focus on different aspects of the literature than positionality theory in order to see how the obtained results would diverge from the results of this thesis.

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