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Ingo Pies, Matthias Georg Will, Thomas Glauben, Sören Prehn

# The Ethics of Financial Speculation in Futures Markets

Diskussionspapier Nr. 2013-21

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*Abstract*

This article sketches an ethics of (financial) speculation in futures markets. (1) It identifies an intentionalistic fallacy prevalent in moral criticisms of speculation in general and of financial speculation in particular. (2) It scrutinizes the degree to which the recent debate on financial speculation with agricultural commodities follows the general pattern of moral criticism and its intentionalistic fallacy. (3) It then provides a theoretical and empirical in-depth analysis of long-only index funds engagement in futures markets and concludes that moral criticisms which put them in the pillory as "hungermakers" are unjust(ified). This proves that ethics, understood as a theory of morality, can criticize moral criticisms of financial speculation on moral grounds. (4) Finally, this article discusses the option of interdisciplinary cooperation between ethics and economics.

Key Words: ethics, speculation, financial speculation, futures market, agricultural commodities, index funds, moral criticism

JEL Classification: A12, D84, G23, P34, Q14, Q18

*Kurzfassung*

Dieser Artikel skizziert eine Ethik der finanziellen Spekulation auf Terminmärkten. (1) Er identifiziert einen intentionalistischen Fehlschluss, den man in vielen Ansätzen moralischer Kritik der Spekulation im Allgemeinen und der Finanzspekulation im Besonderen nachweisen kann. (2) Untersucht wird, bis zu welchem Grad die jüngste Diskussion um Finanzspekulation mit Agrarrohstoffen den generellen Mustern moralischer Kritik folgt, einschließlich des intentionalistischen Fehlschlusses. (3) Anschließend erfolgt eine ausführliche theoretische und empirische Analyse der Terminmarktgeschäfte von Long-only-Indexfonds. Sie gelangt zu dem Ergebnis, dass die moralische Kritik, welche diese Indexfonds als "Hungermacher" an den Pranger stellt, ungerecht(fertigt) ist. Dies zeigt, dass Ethik in der Lage ist, die moralische Kritik an der Finanzspekulation mit moralischen Argumenten zurückzuweisen. (4) Dieser Artikel endet mit einer Reflexion über die mögliche interdisziplinäre Zusammenarbeit zwischen Ethik und Ökonomik.

Schlüsselwörter: Ethik, Spekulation, Finanzspekulation, Terminmarkt, Agrarrohstoffe, Indexfonds, moralische Kritik

JEL-Klassifikation: A12, D84, G23, P34, Q14, Q18



# The Ethics of Financial Speculation in Futures Markets

Ingo Pies, Matthias Georg Will, Thomas Glauben, Sören Prehn\*

That speculation meets moral criticisms is not a new phenomenon. In fact, it is rather old and can be traced back to antiquity. Thus, there is a natural tendency that some traditional strands of ethics, understood as moral theory (= a theory of morality), share and incorporate these extensive criticisms. However, ethics can do much more than that: it can observe, describe, catalogue, compare, analyze and evaluate such criticisms; it can reconstruct, deconstruct and even correct them whenever they fall victim to moral prejudice or other intellectual fallacies. Moral theory can be critical of moral criticisms, and it can criticize them on moral grounds.

This article shows how an ethics of (financial) speculation can analyze and refute moral criticisms on speculation. The argument is developed in several steps. The first section clarifies some terminological aspects related to speculation. The second section identifies some general patterns that are typical of moral criticisms of speculation. The third section documents how the current debate on long-only index funds' speculation in the futures markets of agricultural commodities—and especially the moral criticism involved in this debate—replicates these general patterns. The fourth section contains a critical examination of these moral arguments directed against index funds. (a) First, it explains the nature of index funds and how they operate. (b) Second, it shows that index fund activities in commodity futures markets are beneficial for agricultural production. (c) Third, it documents empirical evidence that index funds are not responsible for famine and starvation in developing countries and concludes that the public campaign which criticizes index funds as "hungermakers" is therefore unjust(ified). (d) Fourth, it provides a moral assessment of financial speculation by index funds. Finally, the fifth section summarizes the main arguments and discusses the potential for interdisciplinary cooperation between ethics and economics.

## *1. What do we mean by "speculation"?*

The easiest way to understand speculation is to compare it with trade. In short, trade means arbitrage in space, whereas speculation means arbitrage in time. Traders and speculators have in common that they buy a good although they are not interested in the good per se. They do not want to use the good for their own consumption or investment; they want to resell it. As both traders and speculators buy goods in hope for profit, they need to buy cheap and sell dear. In both cases, it is the expectation to exploit a price differential that drives the economic activity.<sup>1</sup> But similarities go even further. In prin-

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<sup>1</sup> This is in line with the classic definition by Kaldor (1939; p.1), who held that speculation may be regarded "as the purchase (or sale) of goods with a view to re-sale (re-purchase) at a later date, where the motive behind such action is the expectation of a change in the relevant prices relatively to the ruling price and not a gain accruing through their use, or any kind of transformation effected in them or their transfer between different markets. ... What distinguishes speculative purchases and sales from other kinds of purchases and sales is the expectation of an impending change in the ruling market price as the sole motive of action."

principle, a trader is indifferent whether he transports the good from place A to place B (if he expects transport costs  $C_T$  and price  $p_A$  to be below  $p_B$ ) or vice versa (if he expects  $C_T + p_B < p_A$ ). In likewise fashion, a speculator can buy today and sell tomorrow or vice versa. He will do the former if he expects storage cost ( $C_S$ ) and price today ( $p_0$ ) to be below tomorrow's price ( $p_1$ ). He will do the latter if he expects  $C_S + p_1 < p_0$ .

In its broadest meaning, speculation is involved in all our everyday interactions as soon as they include forward-looking elements. In this sense, waiting and saving involve a speculative element as well as any decision on time allocation, e.g. preponing or postponing of activities. Yet moral criticisms of speculation usually refer to a much narrower meaning of the term. They focus on speculation as an economic activity which is driven by the profit motive to exploit, in the course of time, an expected price differential. Following this narrow understanding, it is helpful to further distinguish between speculation and financial speculation.

- Speculation usually refers to physical goods, the storage of which is costly. Increasing or decreasing inventory is the medium for the inter-temporal substitution that tries to profit from expected price differentials. Spot markets for commodities are a case in point.
- Financial markets are a means to save transaction costs (e.g. for transport). In contrast to the exchange of physical goods which is characteristic of speculation, financial speculation refers to the exchange of certain property rights. Futures markets for commodities are a case in point. Compared with spot markets, they are dematerialized. The exchange that takes place here does not refer to the physical goods themselves; instead, exchange is restricted to the price risks of physical goods. Thus, futures markets have much in common with insurance markets.<sup>2</sup>

The next section provides some general observations and develops a critical analysis of moral criticisms of speculation.

## 2. *The ethics of speculation and the intentionalistic fallacy*

((1)) For more than two thousand years, up to the 17<sup>th</sup> century and even afterwards, Western thought, broadly understood, has been dominated by two sources of moral theory and practice. On the one hand, the monotheistic doctrines of judaism, christianity, and islam form a religious tradition of moral judgments. On the other hand, the philosophies of the Greek and Roman antiquity constitute a secular civic tradition of moral judgments.

Both traditions, still influential today, are rather critical of speculative behavior. They converge in criticizing speculation of doing harm. However, surprising as this may be from a modern point of view, the main focus of these criticisms is not on the social harm a speculator might cause for others. Instead, the focus is on the harm a speculator may cause for himself. This moral criticism comes in two versions. The reli-

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<sup>2</sup> Historically, this sharp distinction between speculation and financial speculation has evolved gradually. In earlier times, it was a common phenomenon that a futures contract was fulfilled by physical delivery (Peck 1985). Nowadays, the vast majority of futures contracts is neutralized: shortly before the contract expires, the seller of a futures contract pays the buyer of this contract a monetary compensation for not delivering the commodity. Although futures markets were introduced in order to facilitate the delivery of physical goods, they have become more and more dematerialized.

gious version argues that a speculator runs the danger of worshipping a false god (e.g. mammon), thus missing eternal salvation. Similarly, the civic tradition argues that a speculator runs the danger of getting his personal priorities wrong, thus forming a bad habit and ending up with a vice instead of a virtue, which prevents him from leading a good life. Ultimately, both traditions share the common understanding to diagnose and criticize a specific form of addictive behavior. For them, speculation ranks on the same level with gambling. Both versions warn against the danger of losing one's autonomy and self-control due to the apparent unlimitedness (and insatiability) of what they regard as a powerful passion. Speculators are morally criticized for their gambling habit, their gambling mentality, and the ensuing temptation to put themselves and others at risk. They are criticized for a pathological obsession: for acquisitiveness and possessiveness, greediness and avariciousness.<sup>3</sup>

Public debates and academic discourses nowadays witness traces of both traditions, though the emphasis has clearly shifted from self-harm to the assumed social harm that is ascribed to speculation. To illustrate, we present some findings that are typical of most academic contributions so far.

((2)) In his classic contribution entitled "The Ethics of Speculation", Ryan (1902) identifies speculation with gambling.

"The mental qualities that are most frequently called into play among professional speculators are those that characterize the activities of the professional gambler." (p. 345)

He claims that this is especially true for financial speculation in futures markets.

"[C]ontracts are settled by a payment of price differences, instead of by a genuine delivery of goods. In effect and intention they are substantially wagers on the course of prices." (p. 336)

Furthermore, he holds speculation to be as unproductive as gambling. In contrast to investors, according to Ryan (1902; pp. 335 f.), speculators "add nothing to the utility of any property—make no contribution to production." Implicitly, this repeats a traditional mental reservation according to which charging interest amounts to practicing usury—money itself is fruitless—or charging a rent on land amounts to income without labor, i.e. daylight robbery. Because these activities are thought to be unproductive, it is assumed that the income generated by such activities must result from exploiting (= victimizing) other people.

Ryan draws on the religious tradition as well as on the civic tradition to criticize speculation as an addictive behavior that is likely to damage not only society, but the speculator himself. The underlying argument is that speculation may tempt a person to form a bad habit that ultimately drives out good habits. For Ryan, speculators are in danger of losing spiritual orientation and of substituting vice for virtue.

"Speculation ... discourages industry and thrift, and makes men worshipers of the goddess of chance." (p 340)

"Every man who yields to the seductive temptation to speculate feeds the passion of avarice, strengthens the ignoble desire to profit by the losses of his fellows, cultivates a dislike for honest, productive labor, and exposes himself to financial ruin." (p. 346)

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<sup>3</sup> From the perspective of sociological systems theory, the stimulating study by Staeheli (2007, 2013) observes controversies about the semantics of speculation, concentrating on the US and the period between 1870 and 1930.—Furthermore, it is interesting to note that many legal systems have for long considered futures transactions as gambling transactions and therefore as not binding. A case in point is the former § 764 of the German Civil Code (BGB). This attitude has only changed slowly and gradually.

As a result, Ryan's ethics of speculation shares and supports the notion, popular among many of his contemporaries, that speculation is in essence an unmoral activity.

"[T]he isolated act of speculation may in itself be without censure—may be no worse than the placing of a wager—but because of its connection with a questionable institution, and because of its grave danger to the individual himself, it can never be pronounced licit in the sense that the transactions of ordinary trade are licit. The shadow of immorality is over it always. Every speculative deal is a participation, remote and insignificant, perhaps, in what can without exaggeration be regarded as a social and moral evil, namely, the institution of organized speculation." (p. 346)

((3)) Many decades later, one still can find similar condemnations of speculation in the ethical literature (cf. e.g. Borna and Lowry 1987, who demand that gambling and speculation should be prohibited on moral grounds). However, few authors are as explicit as Peter Koslowski (2009, 2011) about their assumption that financial speculation is unproductive.

"The wagers that underlie futures and options imply a zero-sum game: what the option buyer gains, the option seller loses, minus the amount retained in option fees. Such zero-sum games on a grand scale, resulting from the proliferation of wagers on the same underlying asset, make no sense in macro-economic terms. Given the fees incurred, only the banks get rich, while no macro-economic value is added. A zero-sum game after the deduction of fees becomes a negative-sum game from which everybody ends up losing." (p. 123)

At first sight, this argument seems to be plausible. If one profits from a zero-sum activity, one's individual gain must be some other's loss. Yet such reasoning leaves it an open puzzle as to why many participants in futures markets enter contracts with speculators over and over again. Resolving this puzzle requires two different perspectives. Viewed *ex post*, a futures contract—like an insurance contract—looks like a zero-sum game, as Koslowski aptly describes. Yet viewed *ex ante*, futures contracts—like insurance contracts—are entered on a voluntary basis because both parties expect this to be profitable from their own point of view. For the speculator, the expected cost of providing the insurance service to cover a price risk is below the risk premium contained in the futures price, while at the same time the contract partner of the speculator has a willingness to pay for being relieved from his original price risk that is above the risk premium. If this argument were not true, it would be impossible for futures markets to come into being and to function on a regular basis.

((4)) Today, Koslowski's view, which clearly rests on a zero-sum fallacy, does no longer represent the state of the art in the relevant academic literature on moral theory. This can be easily verified by inspection of the seminal article by Angel and McCabe (2009), again entitled "The Ethics of Speculation". They point to three productive functions. According to their list, financial speculation (a) provides insurance services, (b) helps hedgers to find a contract partner, and (c) improves the scarcity information incorporated in market prices, thus setting beneficial incentives for the real economy.

"Speculators provide an important risk bearing service by taking on risks that others do not want. They help markets to function better by helping to incorporate information into prices as well as providing liquidity. Speculators may actually reduce shortages by causing quicker price increases that motivate producers to increase production and consumers to conserve." (p. 277)

Although these authors are well-acquainted with the economic analysis of speculation, their line of argumentation is much influenced by the religious and civic traditions of ethics. As a consequence, one finds the authors still occupied with distinguishing speculation from gambling. According to Angel and McCabe (2009), the decisive criterion of distinction is the underlying motive: People speculate for profit, while they gamble for

fun. However, the authors claim that this distinction might be blurred by pathological gambling.

"Compulsive gamblers are addicted to gambling" (p. 281)

"Compulsive gambling disguised as speculation ... can be particularly injurious to markets because gamblers may be trading based on their compulsion, not their information. Their trades may distort prices away from their fundamental economic values and send false price signals to producers and consumers. Gamblers who have lost money may be tempted to "double down" and increase their bets in attempts to win back their losses. This increases their losses, with potentially devastating consequences to themselves, their employers, and the community around them." (p. 284)

((5)) As long as one is interested in the potential self-harm a speculator might cause for himself, it is appropriate to concentrate on individual intentions because the root of the problem is a distortion in the personal motive structure (temptation, addiction, loss of autonomy, etc.). However, if the main emphasis shifts towards an interest in the potential social harm a speculator might cause for others (e.g. in the form of price distortions via bubbles), there are several reasons why it is inappropriate for a theory of morality to confine itself to individual intentions.

First, organizations have become important speculators. This means that the traditional ethics of natural persons must be complemented by an ethics of juristic persons ("business" ethics proper). Second, in most cases intentions are difficult, if not impossible, to observe. As a result, large parts of the literature lack a sound empirical basis when it comes to evaluating market activities, amounting to guesswork about invisibles. Third, and most importantly, the literature suffers from what we label an "intentionalistic fallacy". Since, as the proverb says, the road to hell is paved with good intentions, it is an intellectual mistake to conclude good market results from good motives or analogously to conclude bad market results from bad motives.

According to core insights of ethics and economics, which date back to the Scottish Enlightenment in the 18<sup>th</sup> century, a moral evaluation of market activities should not focus on the intentions of market participants per se, since this could be misleading and even fallacious. Instead, it should focus on the non-intended effects of intentional action and on the institutional coordination of these effects. This requires a paradigm shift from individual ethics to institutional ethics or order ethics (cf. Pies 2013).

The underlying reason is that the "situational logic" of markets, to use a term coined by Karl Popper (1945, 2011; p. 308 f.), has a very special characteristic: due to competition, the interaction among market participants can result in unintended and even undesired effects. Consider a competitive spot market to illustrate this logic: demand side participants are particularly interested in low prices, yet their collective demand activities contribute to raising prices; in likewise fashion, participants on the supply side are interested in high prices, yet their supply activities contribute to reducing prices. Thus, markets have a subversive feature in the sense that competition can undermine and even counterminimize the intentions of market participants. Take an upward demand shift as the paradigmatic example: If prices go up in a competitive market, they do not rise *because* it is in the interest of suppliers; instead, they rise although it is *not* in the interest of demanders who nevertheless cause the prices rise through their own behavior.

This "situational logic" of markets calls for a moral assessment of the consequences of market activities. Concentrating on the empirical output rather than on the intentional input of market activities requires a shift from asking psycho-logical questions to asking socio-logical questions. Since bad intentions, e.g. distorted motive structures via addiction to gambling, are neither necessary nor sufficient for speculation to produce social

harm, ethics should draw public attention to the need of avoiding intentionalistic fallacies. Otherwise, public discourse runs the danger of moral misjudgments, as will be shown in the next paragraph.

### 3. *The intentionalistic fallacy at work: A case study*

Influenced by ancient sources, moral discourse in theory and practice is still preoccupied with analyzing individual motives, although these motives have little explanatory power in understanding how market activities lead to good or bad market results. A case in point is the public debate that ensued worldwide after strong price hikes for food in 2008.

With the advent of this debate, the idea became popular that high food prices on spot markets might result from grossly overpriced agricultural commodities in futures markets. Critics suspected financial speculators to have created unnecessary and unjustified price hikes, thereby threatening the very existence of poor people.

Contrary to what one might have expected, it was not the whole group of financial speculators that was blamed for having caused artificial scarcity. Instead, public discourse was very quick in distinguishing between old and new actors involved in financial speculation. While traditional financial speculators were readily excluded from moral criticism, blame was concentrated on index funds whose futures market activities had just started a few years before 2008.

Judged by the standards of the academic literature on the ethics of (financial) speculation, it is rather surprising that moral critics were quite eager to acknowledge that traditional financial speculators generally play an important and functional role in the sense that they provide liquidity and insurance in futures markets and that they improve the informational content of futures prices. Though this view had been controversial for decades, it was at once taken for granted in a public discussion that concentrated all the blame on index funds. These new actors were put in the pillory, and it was claimed that what was new about them was evil.

From an ethical point of view, it is interesting to observe that such a moral argument is based on a comparison between old and new and that in the course of such comparisons there was a clear tendency to morally upvalue the old in order to morally devalue the new actors of financial speculation.

Furthermore, it is interesting to observe *how* moral critics argued that index funds' speculative activities in the futures markets for agricultural commodities are responsible for endangering global food security. A source of this suspicion was the empirical finding that before 2008, futures markets experienced a strong increase in index funds' activities. However, what made many critics believe that this correlation was to be interpreted as causality—that the price hike in 2008 was a bubble that resulted from index funds inflating futures prices—was a special variant of the intentionalistic fallacy.

To be sure, hardly any critic claimed that it had been the explicit intention of index funds to harm the poor, who indeed suffered most from dramatic rises in food prices. In other words, nearly nobody fell victim to the fallacy of a "conspiracy theory", to use once again a term coined by Popper (1945, 2011; pp. 306 ff.).

However, the ascription of bad intentions played a vital role in the public alarm that index funds had caused global hunger. Because of their speculative motive, their general

disinterest in food and their sole interest in profit, their peculiar business strategy to gain from price differences, they were accused of a lack of consideration, a combination of thoughtlessness and ruthlessness, the result of which was—many critics thought—to increase food prices and thus harm the poor. It is a special intentional characteristic, thought to be typical of speculators, namely their willingness to take chances and to hazard the consequences, which made index funds such a strong suspect.

The following examples may suffice to illustrate how prevalent and even dominant this intentional fallacy was in the public alarm about the (allegedly) harmful effects that index funds are said to have exerted on the global poor and hungry: instead of focusing attention on an empirical investigation of the output of index fund activities, the spotlight was turned on the intentional input, from which it was conjectured that global hunger must have been caused by speculative motives.

((1)) An important source of moral criticism is Michael W. Masters, founder and chairman of the board of the lobbying organization "Better Markets". In numerous public hearings he has put forward the argument that index funds undermine the working properties of futures markets, that they distort prices and create large bubbles, that they are thus guilty of having caused and aggravated the global hunger crisis in 2008, and that they should therefore be prohibited.

This "Masters Hypothesis", as it is called in the academic research literature (e.g. by Irwin/Sanders 2012a), has been very influential at an international scale. Many civil society organizations who are critical of index funds explicitly refer to—and rely on—Masters and his arguments, for which the following statements are rather typical.

With regard to futures markets, Masters (2008) distinguishes between two kinds of financial speculators.

"Index Speculator demand is distinctly different from Traditional Speculator demand; it arises purely from portfolio allocation decisions. When an Institutional Investor decides to allocate 2% to commodities futures, for example, they come to the market with a set amount of money. They are not concerned with the price per unit; they will buy as many futures contracts as they need, at whatever price is necessary, until all of their money has been »put to work.«" (p. 5)

For him, it is the peculiar motive of index funds which renders them dysfunctional and even detrimental for futures markets.

"Index Speculators' trading strategies amount to virtual hoarding via the commodities futures markets. Institutional Investors are buying up essential items that exist in limited quantities for the sole purpose of reaping speculative profits." (p. 7)

According to Masters, index funds distort futures market prices and thus send misleading signals to the real economy. From this diagnosis, he draws far-reaching conclusions.

"Think about it this way: If Wall Street concocted a scheme whereby investors bought large amounts of pharmaceutical drugs and medical devices in order to profit from the resulting increase in prices, making these essential items unaffordable to sick and dying people, society would be justly outraged.

Why is there not outrage over the fact that Americans must pay drastically more to feed their families, fuel their cars, and heat their homes?

Index Speculators provide no benefit to the futures markets and they inflict a tremendous cost upon society. Individually, these participants are not acting with malicious intent; collectively, however, their impact reaches into the wallets of every American consumer." (p. 7)

"If immediate action is not taken, food and energy prices will rise higher still. This could have catastrophic economic effects on millions of already stressed U.S. consumers. It literally could mean starvation for millions of the world's poor." (p. 8)

Masters (2009) makes explicit that from his point of view it is their specific motivation which makes index funds so dangerous.

"Someone who buys one or more consumable commodities derivatives with the express intention of »hedging against inflation« damages the price discovery function of those markets by investing without regard for the underlying supply and demand conditions. In buying commodities futures, that misguided investor is actually causing inflation by pumping up commodity prices." (p. 49)

Along similar lines, Masters (2010) distinguishes between active speculators (e.g. hedge funds) and passive speculators (= index funds). Due to their motivational disinterest in the real market for commodities, the latter are said to impose worldwide harm.

„Active and passive speculators are two very different animals, and to understand the distinctions between the two is to appreciate the extent of the threat posed by passive speculators. Active speculators add beneficial liquidity to the market by buying and selling futures contracts with the goal of turning a profit. In contrast, passive speculators drain liquidity by buying and holding large quantities of futures contracts—basically acting as consumers who never actually take delivery of goods. Passive speculators “invest” in a commodity or basket of commodities (such as an index), and continuously roll their position, as part of a long-term portfolio diversification strategy. This strategy is completely blind to the supply and demand realities in the market. As such, passive speculators not only undermine, but actually destroy the price discovery function of the market and make way for the formation of speculative bubbles.

Passive speculators are an invasive species that will continue to damage the markets until they are eradicated.“ (2010; p.5)

Summing up, Masters claims that index funds, due to their peculiar speculative motive, (a) are unproductive in the sense that they provide no economic benefit to society, (b) drain liquidity from futures markets, (c) are engaged in virtual hoarding, (d) distort prices, and (e) create bubbles. The source of these claims is not a theoretical or empirical investigation of the output of index funds activities. Instead, these claims are directly concluded from their (assumed) intentional input. Nevertheless, this argumentation has been extremely influential. In fact, it has set the agenda as well as the tone for a global public debate engaged in a moral criticism of index funds, as the following examples illustrate.

((2)) Olivier de Schutter (2010), United Nations Special Rapporteur for the Right to Food, is a prominent—and early—proponent of the Masters Hypothesis: (a) He accuses index funds of virtual hoarding (p. 4). (b) He criticizes them for distorting prices and causing bubbles (pp. 3 and 6). (c) He demands to prohibit them from engaging in futures markets for agricultural commodities (p. 8). (c) And he emphasizes the importance of (conjectured) intentions:

"States should ensure that dealing with food commodity derivatives is restricted as far as possible to qualified and knowledgeable investors who deal with such instruments on the basis of expectations regarding market fundamentals, rather than mainly or only by speculative motives." (p. 1)

((3)) In likewise fashion, Oxfam (2011) is ready to admit that traditional speculators in futures markets for agricultural commodities help farmers to hedge their price risks, that they provide liquidity and improve price discovery (pp. 3 f.). However, this civil society organization also claims (p. 4): "Financial markets are no longer delivering for food markets; they have turned against them." Specifically, Oxfam follows the Masters Hypothesis by criticizing index funds as gamblers who distort market prices and reduce liquidity in futures markets:

"The huge inflows of money coming from these new and powerful players have distorted agricultural commodity markets. Too many of the new speculators are only taking long positions through passive investments, which means they are often buying regardless of price. These large one-way

bets unbalance the market. ... Commodity index fund speculation actually takes away liquidity" (p. 7).

((4)) Like many other civil society organizations, Foodwatch (2011) adopts the Masters Hypothesis. The following passage is typical of a vast literature that defends traditional speculators in order to accuse new speculators in agricultural futures markets.

"To make sure that buyers and sellers always find their counterpart for ... transactions, there have to be enough market participants present who trade only with these futures, looking to earn money in this way. This activity has nothing to do with the actual physical business. It is the traditional role of speculators who, in a certain number, are indispensable for the functioning of commodity exchanges.

Most investors active on exchanges today differ however from these traditional speculators. Both the volume of their business and their investment strategy have nothing to do with the actual business of commodity producers and processors, or with needed price hedging." (p. 2)

In addition, Foodwatch (2011) stresses another aspect of the Masters Hypothesis as well. What has been used, during the last decades and even centuries, again and again as a standard argument against financial speculation in general, is now turned into an argument exclusively directed against index funds:

"Using commodity markets for investment has no economic value. Unlike investment activity in stocks and bonds, it does not serve to place capital in businesses or countries for productive purposes. Rather, it is all about betting on the performance of the commodities traded." (p. 3)

What is original, however, is the punchline of this zero-sum reasoning. Similar to Koslowski (2009, 2011; p. 123), Foodwatch (2011) criticizes banks and other financial companies who offer index funds to their clients.

"Diverting investment capital to commodity markets primarily serves the interests of participating financial institutions and exchange groups, who secure profits without risk by charging high fees for transactions." (p. 3)

((5)) In sum, the public debate about index funds employs an arsenal of arguments which historically have been aimed at financial speculation in general. However, the intellectual front line of this debate is rather peculiar. Moral critics come to the defense of traditional speculators in agricultural futures markets. Against this background they then direct their accusations exclusively against index funds (and against the financial companies that offer index funds). The central argument of this moral criticism is that traditional speculators have an interest in food market fundamentals, while the new group of financial speculators (= index funds) is motivated by purely financial speculation.

#### *4. Index funds: What they are, what they do, and why holding them responsible for global hunger rests on a false alarm*

After having observed and classified some important characteristics of moral criticism, we now turn to another task of ethics and investigate whether the central arguments used for accusing financial speculators of being "hungermakers" are right or wrong. First, we explain the business strategy of index funds (4.1). Here, we concentrate on a special version of index funds, which was dominant before 2009, i.e. so-called "long-only" index funds, characterized by a passive strategy to buy futures contracts according to a regular and transparent scheme.<sup>4</sup> After clarifying their economic *raison d'être*, we

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<sup>4</sup> In the rest of this article, the term "index funds" stands for this type of "long-only" index funds.

ask (and answer) two specific questions that are crucially important for an adequate moral assessment of index funds:

- Do index funds engage in win-lose activities, or do they provide a productive service to their contract partners in futures markets? (4.2)
- Have index fund activities in agricultural futures markets caused a global crisis in food security in 2008? Is it justified to put them in the pillory and accuse them of being responsible for aggravating global hunger? (4.3)

We conclude (4.4) by summing up and further elaborating some of the core insights of our analysis.

#### 4.1 What do index funds do?

After 2002, index funds have started to invest considerably large amounts of money in the commodity sector: agricultural commodities have been an important subcategory of their investments. This development was propelled by academic studies which recommended (agricultural) commodities as an asset class (cf. Gorton/Rouwenhorst 2006, Erb/Harvey 2006). Compared with traditional financial speculators engaged in futures markets for (agricultural) commodities, index funds are not only *new* actors. They act *differently*. While traditional speculators are interested in temporal price differentials, index funds are interested in risk-return differentials.

In general, traditional speculators bet on rising as well as on falling prices. In futures markets, they go long and short, depending on their individual expectations. They do so for two reasons. On the one hand, they follow an active strategy which aims at outperforming the market. Hence, they invest in information because their success depends on being better-informed than average market participants. Traditional speculators are experts in knowledge about market developments, aiming at arbitrage in time. On the other hand, traditional speculators specialize in taking risk. They develop diversification strategies that protect them against the volatility in the prices of single commodities. Thus, they can earn a risk premium when providing insurance to actors for whom it would be more costly to carry the price risk themselves.

Compared with traditional speculators, index funds are different. They go long only, and they do this on a strictly regular basis. Their behavior is not ad hoc, but according to rules that are transparently specified in advance. Index funds follow a passive strategy. Hence, their business model does *not* aim at arbitrage in time. In this sense, strictly speaking, they are *not* engaged in speculation at all! Instead of being interested in temporal price differences, index funds are interested in differences between price risks. Their trade is in uncertainties. They are arbitrageurs of risk-return differentials. To employ a more familiar term for this index fund activity, it would be appropriate to speak of "insurance".

Index funds engage in futures markets because they want to gain continuous exposure to the risk profile of (agricultural) commodity prices. Since these prices usually have a positive correlation with inflation, such an exposure may be helpful for capital investors to hedge inflation risk. Furthermore, if the index fund has a negative correlation with the portfolio of an investor, such an exposure may help him to realize pooling advantages. Thus, index funds are instrumental to realizing specific portfolio effects. Their business model rests on a contribution to improved risk-return management.

To further elucidate the activities of index funds and their functions, the following three points are worth mentioning (cf. Greer et al. 2013; pp. 3-8).

- In order to gain exposure to the risk profile of (agricultural) commodity prices, index funds build up long positions in the corresponding futures markets. Since they are interested in a continuous exposure, they roll forward their positions before the futures contracts expire. Thus, they track their target risk profile without ever actually buying and storing physical units of commodities: index funds do not invest in spot markets.
- Because they want to track exclusively the risk profile of specified commodities, index funds avoid other sources of risk. In particular, they work fully collateralized. In contrast to traditional speculators, who often make use of a leverage effect, index funds typically invest their collateral in low-risk T-bills. In this way, they make sure that the risk profile they offer to their clients is not contaminated by other uncertainties: index funds capture the pure profile of risks that result from changes in the futures prices of commodities.
- Index funds specify in advance the relative weights they assign to the different commodities contained in their portfolios of futures market positions. Since contract prices for these futures positions change in the course of time, these weights diverge from their original values. In order to restore these weights to their pre-specified values, index funds rebalance their portfolios in regular time intervals, according to rules that are public knowledge: they sell positions that have become relatively expensive, and they buy positions that have become relatively cheap. In effect, this is a mean reverting investment strategy (Quian 2012; p. 23).

Each point identifies a different source of potential yield: (a) Selling futures contracts before they expire and entering new futures contracts in order to guarantee a continuous risk exposure leads to an implicit "roll yield", which may be positive or negative (with a mean of zero; cf. Main et al. 2013). It is positive when the commodity market is in "backwardation" (i.e. when the price of a futures contract  $p_f$  is below the expected spot price  $p_s$  at the time the futures contract expires), whereas it is negative when the commodity market is in "contango" (i.e. when  $p_f > p_s$ ). A positive roll yield means that the number of futures contracts that is held goes up, while the number goes down when roll yield is negative. (b) To forego a leverage effect by investing the collateral leads to a fixed rent that is positive as long as interest rates for T-bills are positive. (c) Rebalancing leads to a yield that in the academic literature has been—misleadingly—called "diversification return" (cf. e.g. Booth/Fama 1992). It can be approximated with the help of the following formula (Willenbrock 2011):

$$r_d \approx \frac{1}{2} \sum_{i=1}^N w_i (\sigma_i^2 - \sigma_{iP}^2)$$

The diversification return of a single commodity  $i$  is nearly identical with half the difference between its variance ( $\sigma_i^2$ ) and the commodity's covariance with the portfolio ( $\sigma_{iP}^2$ ). From this, one can calculate the diversification return of the whole portfolio ( $r_d$ ). It equals the weighted average of the diversification returns of all single commodities, where  $w_i$  represents the weight with which commodity  $i$  entered the portfolio.

Summing up, index funds provide a financial service to their clients. By engaging in futures markets for (agricultural) commodities, they create specific risk-return profiles that can be beneficial for capital investors interested in hedging inflation risk or realizing pooling advantages.

#### 4.2 Index funds provide insurance services for agricultural production

Before harvesting, each farmer would like to know the price at which he can sell his yield. Knowing this price would make it easier for him to properly conduct his business. Since he has to choose between different types of grain and must decide how much land, labor and capital to use, knowing the later price for sure would help him to avoid mistakes.

This is a serious problem, and it can be solved in different ways. One solution available to farmers is to engage in the futures market and build up a short position, i.e. sign a contract which guarantees them in advance a reliable price for their later harvest. An alternative solution for farmers is to negotiate with their traders a fixed price today for the harvest expected in the future. Yet traders would be willing to offer such contracts—and the corresponding insurance service—only if they themselves can hedge this risk in a futures market. Futures markets thus play a decisive role, whether directly or indirectly, in relieving farmers from uncertainty about future price levels: building up a *short* position is a hedge against the risk of *falling* prices.

Several contract partners of farmers and traders are interested in building up a *long* position in the futures market to protect themselves against *rising* prices. (a) The first group are commercial actors, e.g. millers or bakers, who have a strong self-interest in hedging the risk of price increases. (b) The second group are financial speculators of the traditional kind (= non-commercials), who expect—and bet on—rising prices. (c) The third category are index funds, who are willing to take the price risk involved in long positions because of desired portfolio effects.

The crucial point is that irrespective of the underlying motive—(a) to hedge, (b) to bet, or (c) to risk allocate—the contract partner in the futures market helps farmers and traders to protect themselves against the risk of falling prices. The contract partners who take long positions in the futures market can be regarded as suppliers providing an insurance service that is demanded by farmers and traders interested in taking short positions. Since these transactions do not involve the exchange of commodities but only the exchange of commodity price risks, futures markets have a strong similarity with insurance markets.

This similarity helps to explain two points that are often poorly understood in public debates about "speculation" in futures markets. The first point has already been mentioned in the refutation of Peter Koslowski's moral criticism. Contrary to still widespread beliefs, a futures market is not a zero-sum game. Viewed from an *ex ante* perspective, transactions do not follow a win-lose pattern but a win-win pattern. Farmers and traders interested in taking a short position are in fact willing to pay a price for hedging. That is why in backwardated markets the futures price today is below the expected spot price for the point of time when the futures contract expires. Put differently, the price of a futures contract entails a risk premium. This risk premium reflects the win-win nature of the respective transaction because it is the voluntary payment that compensates insurance suppliers for taking a burden from the shoulders of insurance demanders.<sup>5</sup>

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<sup>5</sup> As soon as one regards index funds as insurance suppliers, it becomes easy to understand that their increased participation in futures markets reduces the risk premium and thus makes it cheaper for farmers to hedge their risk of falling prices. Cf. Irwin/Sanders (2012b; p. 394) and Prehn et al. (2013b).

The second point that often goes unnoticed is that, virtual as the exchange of price risk in futures markets may be, it might nonetheless have *physical* consequences in the real economy. Figure 1 contains an oversimplified sketch of the relevant facts and circumstances, but helps to illustrate this important insight into the positive welfare effects of insurance.

Due to the specifics of agricultural production, a representative farmer is uncertain about both harvest prices and harvest quantities. Let  $\mu$  denote expected return, while  $\sigma$  stands for standard deviation, a measure of risk. Then  $PF_1$  marks the corresponding production frontier in  $\mu$ - $\sigma$ -space. Its positive slope means that higher risk is correlated with higher expected return. The initial equilibrium is given by point A. Here,  $PF_1$  is tangential to the farmer's indifference curve ( $I_1$ ). Point A represents a specific decision on the types of grain, on the amount of land, labor, and capital, on the intensity of production, on the use of fertilizers, etc.

Now assume that the farmer hedges the price risk by going short in the futures market. That still leaves him with risks referring to harvest quantity. Graphically, his production frontier shifts left to  $PF_2$ . If the farmer held his allocation decisions constant, he would be able to reach point B. The insurance effect of the futures contract makes him better off. That is why the indifference curve  $I_2$ , running through point B, is located in the north-west region of  $I_1$  and thus represents higher levels of farmer utility.

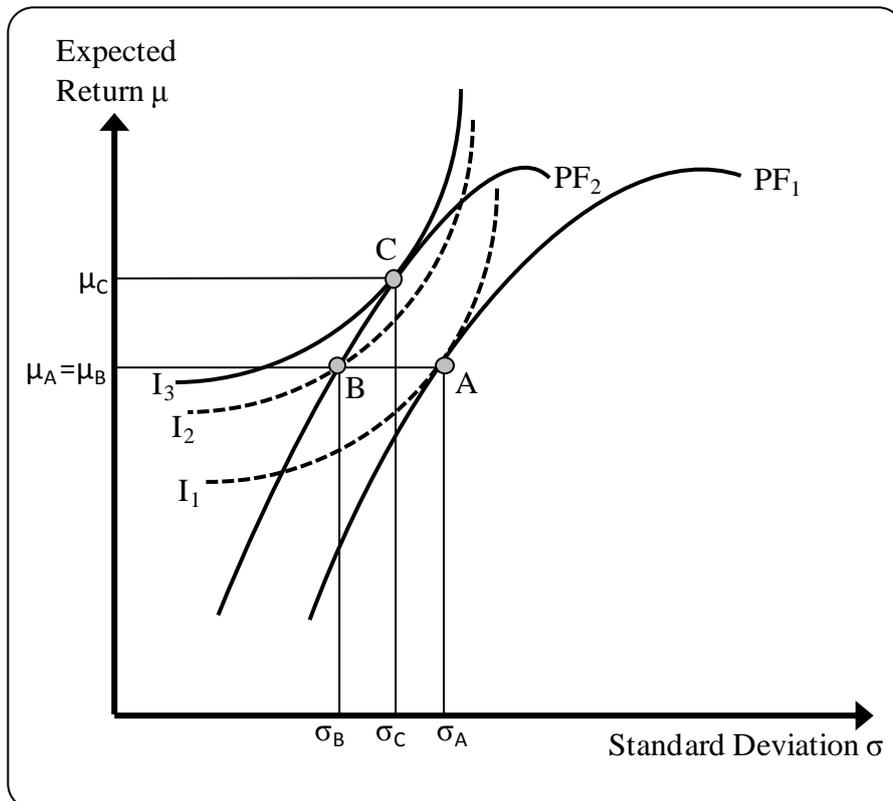


Figure 1: The insurance effect on agricultural production<sup>6</sup>

The direct effect of insurance provides the farmer with the opportunity to earn the same expected return, while the uncertainty of his income is considerably reduced (from  $\sigma_A$  to  $\sigma_B$ ). This in itself is a highly valuable improvement. The farmer's maximum willingness

<sup>6</sup> Source: adapted from Sinn (1995; Figure 3, p. 505).

to pay for this service amounts to the vertical distance between point B and indifference curve  $I_1$ .

However, insurance might have an indirect effect, too. According to the model depicted in Fig. 1, point B is not an equilibrium. Instead, the new equilibrium is given by point C, situated on indifference curve  $I_3$  and tangential to the new production frontier  $PF_2$ . Point C lies on an even better indifference curve than point B, which indicates a further individual welfare improvement. At the same time, point C represents allocation decisions that are both more risky as well as more profitable than the decisions represented by point B. For example, the move from B to C might represent a reduction in the number of different farm products and hence an increase in farm specialization. Put differently, the insurance effect of his futures market engagement encourages the farmer to take more risk ( $\sigma_C > \sigma_B$ ), and since the risk is productive, he is compensated for the additional risk by a higher expected return ( $\mu_C > \mu_B$ ).<sup>7</sup> As a consequence, his maximum willingness to pay for insurance increases to the vertical distance between point C and indifference curve  $I_1$ .

This indirect effect is counter-intuitive. Most people would expect that due to its direct effect, an insurance contract decreases risk instead of increasing it.<sup>8</sup> However, the following statement by Schumpeter (1942, 2008; p. 88)—even if taken out of context—might help to better understand the economic logic underlying this phenomenon. "There is no more of paradox in this than there is in saying that motorcars are traveling faster than they otherwise would *because* they are provided with brakes." The analogy should be clear: Of course, a brake makes it possible to reduce speed, but exactly this possibility allows one to drive faster than would be advisable without brakes. In like-wise fashion, one could say that insurance reduces the cost of risk, so that the buyer of insurance can afford more risk because it has become cheaper.

Summing up, index funds engaged in the futures markets for agricultural commodities have a positive impact on their contract partners and thus on the real economy: holding long positions provides an insurance service that helps farmers to incur additional productive risk and realize higher expected returns.

### 4.3 Have index funds caused recent price hikes?

After significant price increases for agricultural commodities in the years 2008 and 2011, protests and riots occurred globally (Figure 2).

((1)) Agricultural economists ascribe these price increases to a complex interplay of several factors, most of which have their roots in the real economy, while some in effect

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<sup>7</sup> In the literature on insurance, the tendency to take more risk after having signed an insurance contract is called "moral hazard". Very often, moral hazard is interpreted as ex-post opportunism. Implicitly, the phenomenon is seen from the perspective of an insurance company that is faced with additional cost caused by behavioral changes induced by insurance. A case in point would be fire insurance that makes people less reluctant to smoke in bed or to take other actions that increase the probability of fire. However, such an interpretation is misleading because it tends to overlook the possibility that the additional risk might be productive and hence desirable from a societal point of view. Instead of "moral hazard", a term appropriate for unproductive risk, in the case of productive risk one might call the change in behavior simply an incidence of "risk productivity", a term coined by Hans-Werner Sinn (1986).

<sup>8</sup> Sinn (1995) discusses under which conditions the indirect might even overcompensate the direct effect of insurance.

were caused by political errors.<sup>9</sup> The extent to which individual factors influenced the rising prices (and resulting crises) is a matter of some controversy and requires further research. However, a review of the literature indicates that the following factors played a decisive role.

- Demand for food increased faster than supply due to an interplay of structural and macroeconomic factors. This situation was reinforced by efforts to subsidize bio energy, especially in Europe and the US. As a consequence, stocks of wheat, rice, corn and soya steadily declined from 2002 to 2008.
  - The weak US dollar raised the global demand for US crops in the period before 2008.
  - Global population growth combined with a global increase in per capita income boosted the consumption of meat, which in turn increased the demand for agricultural commodities, especially animal feedstuff.
  - The subsidization of bioenergy encouraged the use of agricultural commodities as a fuel (food vs. fuel dilemma). Thus, the area available for food production has been considerably reduced.

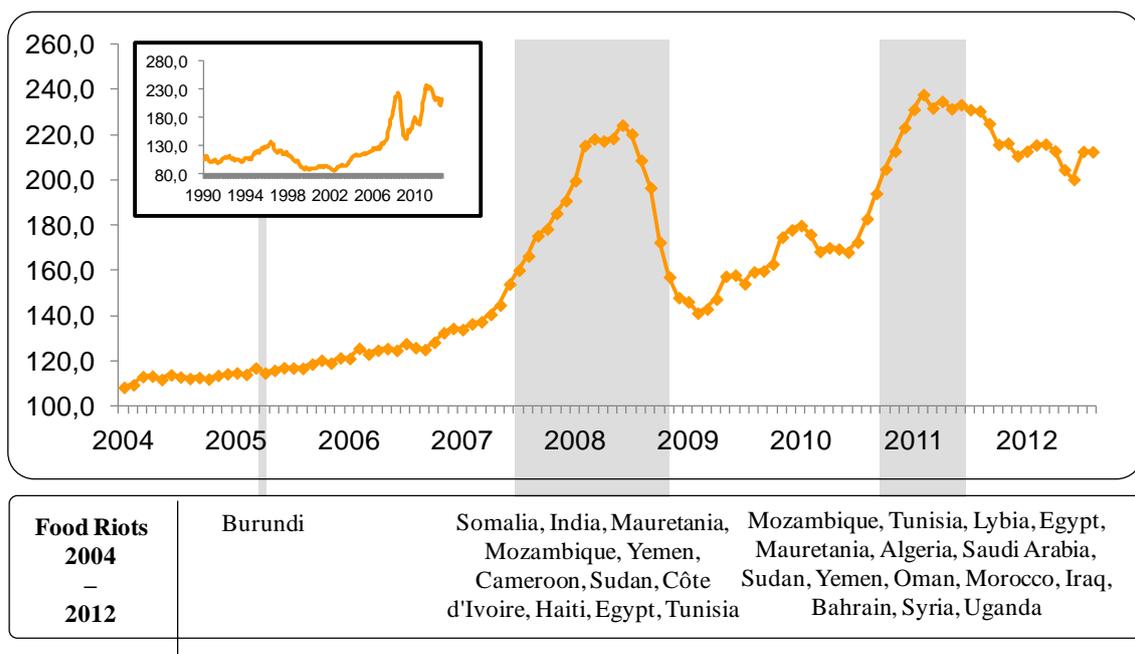


Figure 2: Food Price Developments with Dramatic Consequences, 2004-2012<sup>10</sup>

- In 2007, adverse meteorological events caused significant price increases (cf. Trostle 2008; p. 21) that were exacerbated by low stock inventories: as a consequence, many market participants were taken by surprise.
- Many countries reacted to these price increases by initiating policies that, in retrospect, contradicted the expectation formation of market participants, causing severe difficulties for the price discovery process (cf. Götz et al. 2013, Anderson 2013). These highly controversial policies were taken by both exporting and importing countries. The former group restricted and even banned exports, while the

<sup>9</sup> Cf. the analyses by Trostle (2008), Headey/Fan (2010), Meijerink et al. (2011), Tangermann (2011) and Trostle et al. (2011). For a short overview, cf. Pies et al. (2013).

<sup>10</sup> Source: Own graph utilizing the FAO Food Price Index as well as data from Lagi et al. (2011).

latter group increased their demand. This political coordination failure further exacerbated the price hikes which made poor people suffer.

- The tremendous increase in commodity prices was halted by two simultaneous events: (a) the global bumper crop of 2008 that was triggered by high price expectations, and (b), the bankruptcy of Lehmann Brothers in the USA and the following global recession.
- In 2010, history repeated itself: weather-related bad harvests caused adverse supply shocks (cf. Trostle et al. 2011; Table 2, p. 18), and markets experienced enormous price rises. Stock inventories decreased. Many exporting countries again reacted with protectionist policies, and importing countries countered by tightening supplies even further.

In order to fully understand the implications of these events, one must appreciate the central role of agricultural stocks in influencing price formation in agricultural commodity markets.

Figure 3 illustrates the fact that identical supply shocks can have extremely different effects depending on the level of stock inventories. If inventories are full, the effects of shocks are mitigated. If inventories are empty, shocks instead have a strong impact on the inelastic part of the demand curve, and cause non-linear and extreme price surges.

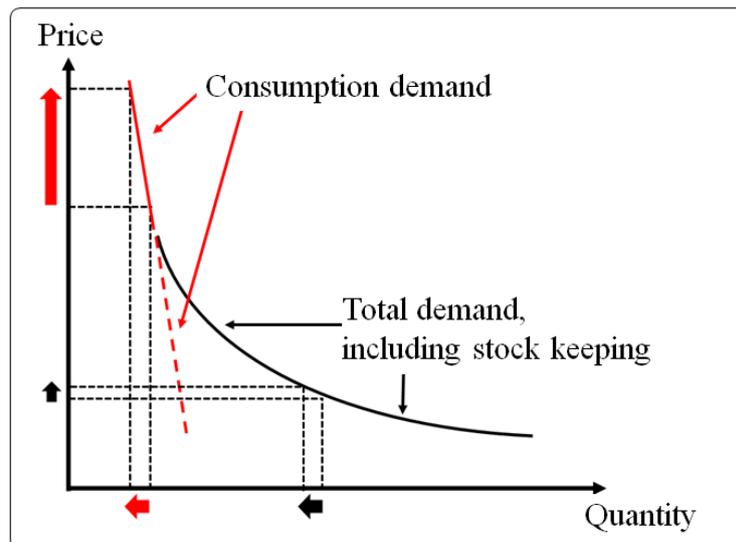


Figure 3: Non-linear price effects on the market for agricultural commodities<sup>11</sup>

((2)) Despite these numerous factors, whose dynamic interplay fully explains the surges in agricultural commodity prices, there was a popular suspicion as early as 2008 that the significant price increases might have their root not in the real economy, but instead in the financial economy. Many assumed that the futures market activities of index funds had exerted an alarming effect on spot market prices for agricultural commodities.

However, such suspicions, although popular, are not well-founded. To start with, they ignore the theoretical insight that due to their passive and mean reverting strategy, index funds tend to stabilize futures prices (cf. Prehn et al. 2013). Furthermore, there are

<sup>11</sup> Source: adapted from Wright (2009; Figure 12, p. 20).

three empirical findings that immediately cast serious doubt on the idea that index fund speculation could have caused explosions in agricultural prices.

- Figure 4 highlights the time lag observable in the futures market for wheat between the increase in the volumes of index funds' passive investments and the increase in futures prices. This graph illustrates that the increase of investment volume considerably preceded the price increases. Similar patterns can be found for corn and soy beans.<sup>12</sup>
- If it were true that the financialization of commodity markets led to an excessive increase in futures prices, these increases could have spread to the spot markets only through growing stocks. However, during the relevant time periods, stocks were not rising but falling to a minimum level. Even if current statistics on global stock levels are quite unreliable, the available data on *changes* in global stock levels are nevertheless an important piece of evidence. These data show that episodes of strong increases in grain prices coincide with low stock levels.<sup>13</sup> In this respect, the crisis in 2008 followed a historically familiar pattern.

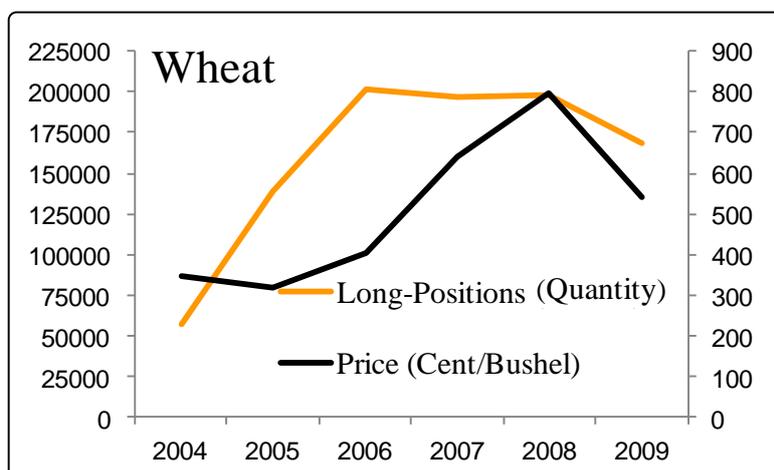


Figure 4: Index Volume (left scale) and Futures Price (right scale) in the Futures Market (CBOT) for Wheat, 2004-2009<sup>14</sup>

- Between January 2006 and April 2008, prices of different agricultural commodities evolved rather differently.<sup>15</sup> This empirical finding is hard to reconcile with the suspicion, noted above, voiced by critics of index funds:
  - Futures markets in which index funds are strongly engaged show a great diversity of price movements: corn +175%, soy +120%, soy oil +172%, wheat (CBOT) +159%, wheat (KBOT) +136%, cotton +36%, whereas the prices for cattle declined by 9%.
  - Index funds are not engaged in the futures market for rice. However, rice prices grew by 168%.
  - One can find relatively strong price increases for goods that are not traded on future markets, and that are therefore not included in index funds investments: apples +58%, beans +78%.

<sup>12</sup> Cf. Sanders/Irwin (2011; table 1, p. 525).

<sup>13</sup> Cf. Wright (2009; pp. 17 ff., 42 et passim).

<sup>14</sup> Source: Own graph, utilizing data from Sanders/Irwin (2011; table 1, p. 525).

<sup>15</sup> Cf. Irwin/Sanders/Merrin (2009; table 2, p. 383).

In spite of these theoretical and empirical arguments, the public vigorously debated whether index fund speculation might have had a negative impact on global food security. As a consequence, this question has attracted a lot of academic research effort. A comprehensive review of the empirical literature on this topic is summarized here. It comprises 35 academic articles, published between 2010 and 2012, which represent the current state of academic knowledge (Figure 5):<sup>16</sup>

- The majority of econometric studies indicate that futures market speculation by passive index funds had *no* significant impact on the price volatility of agricultural commodities.
- The majority of econometric studies indicate that futures market speculation by passive index funds had *no* significant impact on the price levels of agricultural commodities.
- The majority of econometric studies that are explicitly focused on the political implications of their empirical findings *warn* against over- or mis-regulating futures markets. The consensus within the literature is to caution against acquiescing to popular demands for strict regulation or even prohibition of index funds, because any such political reform may inhibit the functioning of futures markets. This would be neither in the interest of farmers nor in the interest of starving people.

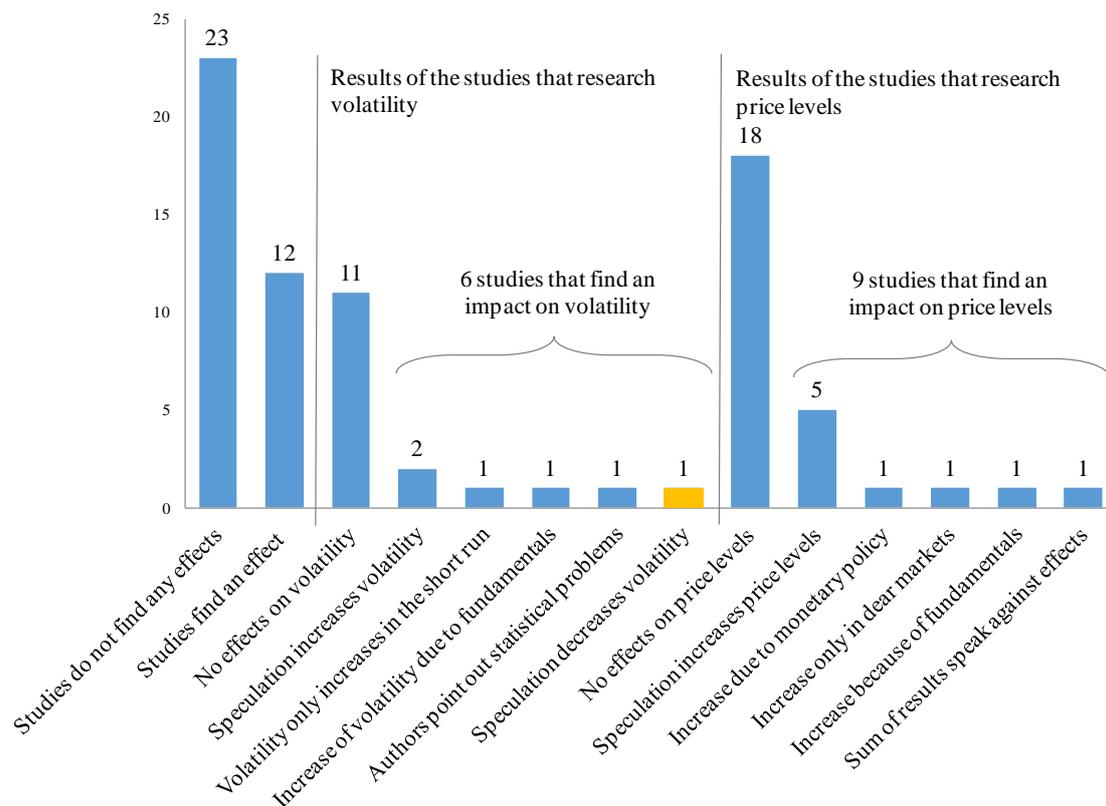


Figure 5: Empirical Evidence by 35 Econometric Studies<sup>17</sup>

<sup>16</sup> Cf. the literature review by Will et al. (2012), which was inspired by the earlier study of Shutes et al. (2012). For a very short overview of the results cf. Glauben et al. (2012).

<sup>17</sup> Source: Own graph, utilizing data from Will et al. (2012; tables 1 and 2, p. 10 and p. 11).

((3)) Based on these empirical findings, there is reasonable ground to contradict Sutton (2012) who offers an alternative "ethics of financial speculation". He remains skeptical of the analyses provided by academic economic research and thus calls for a precautionary approach. Sutton argues to shift the burden of proof and to reduce index fund activity in commodity futures markets until academia has reached conclusive evidence that such activity does not cause social harm.

"Although economic models provide a useful way of understanding a complex environment, they are only theoretical, and may not capture the real world ... Difficulty in quantifying the impact of financial investment, then, does not constitute proof that there is no impact. ... [P]olicy approaches that await conclusive proof prior to action may not provide an adequate response to this issue." (p. 5)

"Given the very real human suffering at stake, ... adopting a more precautionary approach and limiting the extent of speculation is the prudent action to take." (p. 2)

In contrast to Sutton's (2012) assumption, we contend that conclusive evidence has already been established. A proper application of the precautionary principle thus serves as a warning against inhibiting an activity which provides social benefits to society at large. It is not prudent to believe and support popular accusations that have so clearly been proven to be unjust(ified).<sup>18</sup>

#### *4.4 A moral assessment of index funds: lessons (to be) learned*

So far, this section has established three propositions: (a) Index funds are a financial innovation that helps capital investors, e.g. pension funds, to hedge inflation risk. (b) Index funds help farmers to be more productive. (c) Index funds have been wrongly accused of being "hungermakers" who have caused famine.

The following list helps to clarify some popular misunderstandings. It points out that it can be mistaken to draw oversimplified analogies between traditional speculators in futures markets, e.g. hedge funds, and index funds.

- Unlike hedge funds, who are active speculators and try to outperform market development, index funds follow a passive investment strategy that simply tracks the market development.
- Unlike hedge funds, who try to anticipate price trends, index funds are not interested in price movements per se. Instead, they are interested in price risks.
- Unlike hedge funds, who often work partly collateralized in order to leverage their speculation, index funds work fully collateralized in order to purify their target risk profiles.
- Unlike hedge funds, index funds do not speculate on rising prices. They exclusively concentrate on long positions just because the risk of long positions has a clear boundary and thus is easier to calculate than the risk of short positions.

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<sup>18</sup> In this respect, it is important to notice that the empirical investigations of the effect of financial speculation on agricultural commodities, which has been surveyed here, comes to very similar conclusions as the recent literature on the effect of financial speculation on commodities—especially oil. Cf. Fattouh et al. (2013) as well as Knittel/Pindyck (2013).

- Unlike hedge funds, who arbitrage temporal price differences, index funds arbitrage risk-return profiles. Strictly speaking, index funds are not speculators at all. Instead, they are specialists in risk management, similar to insurance companies.
- Unlike hedge funds, who invest in information in order to better assess market fundamentals, index funds fulfill only two of the three classic functions fulfilled by financial speculators: (a) they do *not* improve the price discovery process in futures markets, but they (b) improve the insurance function of futures markets and (c) provide these markets with better liquidity.
- Unlike hedge funds, who do not take long positions when they expect prices to decrease, index funds continue to take long positions. They thus provide liquidity to futures markets even in times when other insurance providers are reluctant to do so (Prehn et al. 2013).

Perhaps the best way to understand the impact of index funds entering the futures markets for (agricultural) commodities is with the help of the following analogy:

(a) Assume that industry production involves a by-product (= waste), which is expensive to dispose of. (b) Now assume further that another industry innovates and suddenly finds a meaningful way to make use of this hitherto unwelcome by-product, thus changing its nature from an economic bad to an economic good. (c) In general, this is welfare-enhancing because the innovation has invented a new valuable resource and has in effect enlarged the cosmos of mutually beneficial exchange.

With regard to index funds, one can draw the following analogies: (a) Agricultural production involves volatility in prices and thus price uncertainty. This is an economic bad. And farmers are willing to pay a price to get rid of it. (b) Index funds have invented a way to make use of this risk, at least up to a certain degree. They use it as a protection against inflation. Thus, they have changed its nature from an economic bad to an economic good. (c) In general, this is welfare-enhancing because the innovation has invented a new valuable resource and has in effect enlarged the cosmos of mutually beneficial exchange.

Against this background, the ethics of (financial) speculation warns against the moral condemnation of index funds that has been popular in public discourse. Such condemnation rests on a poor understanding of the beneficial effects index funds provide both to their clients and to their contract partners in futures markets, and it often simply takes for granted that index funds cause famine. Yet judged by sound theoretical arguments as well as by the best empirical evidence available today, such alarms have to be qualified as false alarms.

As such, they can be criticized from a moral point of view. Wrong accusations run the danger of leading public policy discourse astray. This can be counterproductive in two ways. On the one hand, politicians might refrain from taking measures that would certainly improve global food security—e.g. from reforming subsidization programs for bioenergy. On the other hand, politicians might feel pressured to take measures that finally impair the conditions of agricultural production—e.g. strictly regulate or even prohibit index fund activity in futures markets.

Against this background, the ethics of (financial) speculation seizes the opportunity to criticize moral criticisms on moral grounds. In the case at hand, some erroneous arguments are not only wrong from an economic point of view. What is more, they are

morally deficient because they tend to undermine an effective fight against global hunger, i.e. they are dysfunctional to reaching a goal which is in itself a top moral priority.

### 5. Summary and outlook: the interplay between ethics and economics

Section 1 has shown that academic contributions to the ethics of (financial) speculation have experienced a drastic development: from simply incorporating the moral criticisms of speculation, which have been prevalent in public discourse for centuries, to critically correcting such criticisms where they are erroneous.

Section 2 has documented the surprising experience that in recent years public discourse suddenly jumped from accusing to defending traditional financial speculators in futures markets in order to heavily criticize new actors, namely long-only index funds.

Section 3 has explained why this simple transmission of arguments, traditionally directed against speculators, is quite inappropriate for criticizing index funds, since their activity is far removed from being speculative in the traditional sense.

So far, the line of argumentation provides ample evidence that ethics needs economics: without a proper understanding of index funds, their market strategy and their social impact, provided by theoretical reasoning and empirical investigation firmly rooted in economic analysis, moral theory cannot properly fulfill its task to critically evaluate the moral criticisms of speculation.

Section 4 completes this line of argumentation by changing perspective. It asks and answers the complementary question whether it might be possible that economics needs ethics in order to fulfill its tasks.

((1)) Economics is interested in understanding—and improving—market systems. A core insight that has stimulated economics as a research program is that competitive markets can lead private action to promote public welfare. Yet another insight that has gained prominence in the development of economics during the 20th century is that competitive markets sometimes fail in fostering the common good. Environmental pollution is a case in point. Markets coordinate the non-intended consequences of intentional action, and in doing so they can produce both good or bad results.

In scrutinizing the potential sources of malfunctions in the business sector, economists have become aware that the institutional framework plays a decisive role in shaping competitive forces towards good or bad results. Functioning markets require property rights. Deficiencies in this respect lead to negative externalities because business actors are tempted—and due to competitive pressure, they are even forced—to disregard some social cost in their private business plans. This explains phenomena such as environmental pollution.

Thus, economists came to the conclusion that many market problems have their origin in political problems, especially where politics is responsible for deficits in the institutional framework of competitive markets. The core insight here is that market failure might result from political failure, e.g. in establishing property rights.

In scrutinizing the potential sources of malfunctions in the political sector, economists have concentrated their analysis on identifying conflicts of interest that prevent politics from providing markets with an adequate institutional infrastructure which is required for promoting the common good. Thus, economists identified numerous principal-agent problems. For example, they found out that the self-interest of politicians

might be poorly aligned with the public interest or that the self-interest of bureaucrats might substantially deviate from what citizens would desire. In likewise fashion, small interest groups might have a political interest in creating privileges at the expense of large majorities—e.g. by exemptions from competitive pressure in markets (cartels, protectionism, subsidies, etc.).

Economists thus came to the conclusion that many political problems have their origin in the institutional—or constitutional—framework that canalizes individual action in the political sector. In this respect, the economic analysis of political failure simply duplicates the economic analysis of market failure.

((2)) Against this background, ethics can help by pointing to a quite different source of political failure. While standard economic approaches assume that market failure often results from political failure because citizens do not get what they want, ethics draws attention to the possibility that market failure might result from political failure because citizens indeed do get what they (erroneously) want. If false beliefs dominate the public perception of a problem or the perception of possible solutions, this might lead to a "discourse failure" (Pincione/Tesón 2006) that pressures political actors to take certain measures even if these in fact defy the common good. The age-old propensity to condemn speculation is just a case in point. It is easy to imagine how public rage against conjectured "hungermakers" might lead to market mis-regulation. Claims by civil society organizations to drastically reduce or even prohibit index fund activity in commodity futures markets, intended to protect agricultural production against shocks, might instead—un-intentionally and even strictly counter-intentionally!—be detrimental to the moral aim of improving global food security.

Two further points deserve consideration.

First, it is important to distinguish between the economic sector and the political sector. In general, people are well-informed with regard to the costs and benefits of private goods they buy in markets, while they tend to be badly informed with regard to the costs and benefits of public goods provided by the political process (cf. Caplan 2007). The underlying reason is a distortion of incentives to acquire (or generate) information. Hence, the potential "false beliefs" ethics draws attention to are a phenomenon that can be understood as "rational ignorance": for many people it simply does not pay to invest in being informed about the relevant political alternatives for promoting public interest, e.g. about the details of institutional reforms for curing market failures, and furthermore many people lack a feedback mechanism that would enable and incentivize them to identify and correct false beliefs.

Second, an economics of "rational ignorance" is not the same as—and therefore not a perfect substitute for—an ethics of "false beliefs". The underlying reason is straightforward. Faced with the immense—and still growing—complexity of social processes, especially in the economic or political sphere, many citizens reduce complexity by employing normative heuristics. They pass moral judgments, categorizing complex phenomena as well as the according actions and actors as good or evil, i.e. as right or wrong from a moral point of view. Whenever these judgments are intellectually biased, their correction requires normative criticism. In this respect, ethics has a comparative advantage. Therefore ethics, specialized in criticizing (erroneous) moral criticisms on moral grounds, can complement economics. Ethics can provide arguments that guard against "discourse failures" which—ideologically—cause political failures and thus

might lead —via mis-regulation—to market failures. In this respect, there is ample scope for interdisciplinary cooperation between ethics and economics.

((3)) Concluding, a final hint seems in order. Many ideas elaborated here can already be found in Adam Smith, in particular in his "digression concerning the corn trade and corn laws" at the end of chapter 5 in book IV in the "Wealth of Nations".<sup>19</sup> Here, Smith (1776, 1981) is explicitly concerned with moral prejudice and public bias against agricultural speculation by corn traders.

"In years of scarcity the inferior ranks of people impute their distress to the avarice of the corn merchant, who becomes the object of their hatred and indignation. Instead of making profit upon such occasions, therefore, he is often in danger of being utterly ruined, and of having his magazines plundered and destroyed by their violence. ... The ancient policy of Europe, instead of discountenancing this popular odium against a trade so beneficial to the public, seems, on the contrary, to have authorized and encouraged it." (pp. 527 and 528)

For Smith it was an important task to fight false beliefs and their potentially detrimental consequences for the political process and the ensuing mis-regulation of markets. This task of marshalling appropriate counter-arguments is still important today. Following the footsteps of Adam Smith, ethics and economics can work together and fulfill this task of public enlightenment hand in hand.

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<sup>19</sup> Cf. Smith (1776, 1981; pp. 524 ff.).

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