THE SOCIAL FUNCTION OF DERIVATIVES MARKETS

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I. INTRODUCTION: WHAT DERIVATIVES ARE

The first question to answer is of course “what are derivatives?” The straightforward answer is the conventional definition, what derivatives are used to designate. Such a definition will be entirely sufficient for our present purpose. The word “derivatives” is normally used to designate three categories of contracts, “forwards/futures”, “options” and “swaps”, plus some more complicated combinations of these labeled “exotic” derivatives.

Forward/future contracts are the most simple to understand. In forward contracts, two people agree to exchange specified quantities of their assets at a specified future date and at a price agreed upon at the inception of the contract. No asset needs to be transferred before maturity. This is a future good vs future good exchange. Futures are basically the same products than forwards except that they are standardized in order to be traded on a futures exchange. Since the exchange's clearing house acts a counterparty on all contracts, it sets “margin requirements” in order to manage the participants' risks of default and to have interim partial settlements during the life of the contract. Therefore, some cash needs to be spent initially by participants. As a consequence, though the basic nature of the contract remains a future good vs future good trade, it also has a feature of “traditional” investments, namely the exchange of present cash for future cash.

An option contract is an agreement in which the buyer acquires the possibility but not the obligation to buy or sell a quantity of an underlying asset to the seller at a specified future date or during a specified time frame at a price agreed upon at the inception of the contract. Since the seller or originator of the option collects a premium from the buyer at inception, there is always an explicit investment involved in the transaction, an exchange of present versus future goods that is.

In a swap contract, parties to the exchange trade the income flows related to some assets they hold. For example, in a swap involving underlying loans, the two parties can trade the interest payments of their debt titles. Fundamentally, they do not require any expense of cash at inception and are therefore future versus future goods exchanges, unless they are traded on organized
exchanges in which case margin requirements might be required as with futures.

All these products are called derivatives because their existence and prices are said to be derived from the existence and prices of the so-called underlying products they are associated with, say the value of oil futures as dependent or derived from oil prices in the spot market.

Our goal here is to show what are the required conditions for derivatives to emerge in the first place and to explain which role derivatives can have in the social fabric from the point of view of economic theory. We will show the importance of uncertainty and entrepreneurship as Ludwig von Mises understood them in order to grasp what is at stake and point out the errors that the mainstream approach toward uncertainty and the entrepreneur leads to as far as derivatives are concerned. Finally, we will explain how the use of derivatives can improve the overall division of labor process via the transfer of uncertainty-bearing.

I. CONDITIONS REQUIRED FOR DERIVATIVES TO EMERGE: 1. UNCERTAINTY

a. Uncertainty in regard to future prices

Let’s consider the simple example in typical textbook fashion treatment, which will help us sorting out the relevant issues from the point of view of economic theory. A and B sign a forward contract today, which means that they commit themselves to transact at some future date at a price which is agreed on today. A is the buyer and B is the seller of, say some quantity of corn for the futures price $f_0$. What happens at maturity $T$? There are three possibilities. Either the spot price $p_T$ is the same than the futures price $f_0$ previously agreed upon or it is higher or it is lower. If $p_T$ is higher than $f_0$ then A earns a monetary profit of $p_T-f_0$ per unit bought since he can sell the just acquired corn at $p_T$. As a counterpart, B makes the equivalent loss in the sense of having abandoned the opportunity of this monetary profit. If $f_0=p_T$, neither A nor B are able to earn a profit from a discrepancy in prices. If $f_0$ is higher than $p_T$, then B earns a profit of $f_0-p_T$. Both positions are
symmetrical and at least from an accounting point of view, this is a zero-sum game.

Now the question is why A and B would like to engage in such a transaction in the first place. The answers to be found in any financial textbooks are “hedging” and “speculation”. The hedger wants to protect himself against the prospect of a lower price of the goods he will sell in the future or of a higher price of goods he plans to buy. The speculator instead wants to profit from some price changes. In the above example, B might want to protect himself against the prospect of corn price falling in the future under the present spot price. If he can agree with A on a future price \( f_0 \) equal to the present price and if A does not default, this is what he will get. B hedges himself. Why could A agree on such a price? If he is pretty sure that the price will actually rise, he might want to profit from the change thanks to a lower future price agreed on now than the expected future spot price. Then certainly there is room for an ex ante mutually beneficial future transaction. If \( p_T \) ends up being actually higher than the present spot price, A will have succeeded. At the same time, B will not have profited from the rise in price, this is his loss, but he will have hedged himself.

With this being said, one can immediately see that from the point of view of economic theory, the distinction between the hedger and the speculator is not entirely satisfying. Regardless of their motives, both are speculators insofar as they deal with uncertainty regarding future prices and that as a consequence they can earn monetary profits or bear losses, at the very least as a lost opportunity to benefit from a favorable price change. This consideration brings us to the first absolutely necessary condition for the forward transaction to occur (or any derivative trade, as a matter of fact). This condition is the prevalence of uncertainty regarding some future events. In the example above, the condition is at the very least that \( p_T \) is unknown to A and B. Indeed, it was already implicit in our previous discussion that the demand and supply schedules for these contracts are based on some expectations of the future spot prices. These schedules are fundamentally based on or derived from the expected exchange value of the underlying asset. In other words, these are essentially speculative schedules. And of course there is no such thing as speculation without uncertainty. Since derivatives appear here as tools for speculation in the largest sense, there is no
use for them in a world of certainty.

The point might seem trivial but one can hardly underestimate its analytical significance once one recognizes the relationship between uncertainty, the possibility of errors and equilibrium concepts and analysis which are traditionally at the forefront of modern economics. Though there exists many variations in the economic literature about the meaning and content of equilibrium concepts, some common ground can be found. Equilibrium always denotes some absence of error (Hulsmann 2000). As Hayek (1948, p. 42) puts it, “Correct foresight is then the defining characteristic of a state of equilibrium”. Error is absent either because successful actors had a correct judgment in anticipating future conditions and prices, or because they were simply lucky, or because there is no room for error in the first place, no uncertainty in the model under scrutiny (perfect foresight). In the latter case, that would mean we are in the presence of an equilibrium model. In the case of Ludwig von Mises (1998), for example, the admittedly unrealistic model of the “evenly rotating economy” -Mises' general equilibrium- appears when changes have disappeared from the picture and uncertainty has disappeared as well as a consequence. In other words, analytically, general equilibrium models go hand in hand with the condition of no uncertainty where errors cannot occur.

Now, if A and B must live in a world of uncertainty in order to be able to engage in a derivative contract, it means that we can discard in advance some ways to deal analytically with the economics of derivatives as dead ends. Whatever can be their merits otherwise, pure and perfect competition or various general equilibrium models cannot be useful in any way. Attempts at building an economics of derivatives markets on such foundations would have to be rejected as an absurd endeavor. It would make no more sense than “the economics of uncertainty in a world of certainty” which it would actually amount to.

\[b. \text{On the Nature of Uncertainty: True Uncertainty and Risk}\]
Mises (1998) provided us with a compelling argument why there are two fundamentally different kinds of uncertainties that the actor can face and shed some light on their natures. Uncertainty regarding future prices and the use of derivatives has essentially to do with one of them. In order to grasp this insight, an epistemological *détour* is required.

According to Mises and its followers, sound economics has to be structured as statements logically derived from and implied in the so-called axiom of action. Action has to be understood as purposeful behavior, and implies the necessity of choice regarding the use of some scarce means to arrive at some ends. All the categories of goods, value, cost, profit and loss, etc. are implied in this insight which is considered by Mises as valid knowledge derived a priori from experience, via discursive reasoning. It is self evident in the sense that one cannot deny it without performative contradiction since any attempt would have to be an action itself.

One implication of the axiom is that action in general and therefore any production process takes time and must deal with uncertainties. In the most fundamental sense, there is no way to get rid of uncertainty entirely for any actor. There would be no choice to take if future courses of events were known in advance in a world of complete certainty (Mises 1998, p. 105). Therefore, if A and B above are not simply identified with agents in an unrealistic model but as real actors in the real world, they must lack perfect foresight.

Now another relevant implication for our topic is, to use Hans-Hermann Hoppe's words (Hoppe 1995), that “Action presupposes a causally structured observational reality but the reality of action which we can understand as requiring such structure, is not itself causally structured.” Action itself is not causally structured since it is purpose-directed. The actor chooses to use scarce means in some ways instead of some other ways to arrive at some ends and by necessity, chooses to abandon or postpone the fulfillment of other ends. On the other hand, action presupposes the “constancy principle”, “time invariant operating causes” in the actor's environment, or a “causally structured” physical reality in which action takes place. In Mises' words, “causality is a category of action”. The reason is that the very idea of action implies an interference in the actor's environment in order to
produce a preferred state of affairs compared to the course of events without such an action. Success and errors must be ever present possibilities as long as there is action, and being able to conceive of a natural course of events and its successful deviation initiated by an actor means he can grasp some relationships between thing which stay constant over time. There cannot be any meaningful concept of success and error, planning and therefore action under complete randomness or indeterminacy. The range of applicability of teleology and causality must therefore be clear and are determined a priori. Action has to be categorized teleologically, as purpose-directed, and the non-acting entities in the actor's environment must be categorized causally.

Now apart from providing scientists with the fundamental insight that there are two categorically different realms of phenomena and that different methods are required to deal with them accordingly (there is no way one could identify fundamental laws of action by treating it as some causally structured movements of bodies that one has to experiment with to find the cause and effect relationships a posteriori, and there cannot be a priori knowledge of specific causal relations apart from the fact that they are causally structured), this insight also allows us to understand that the actor faces two distinct kinds of uncertainties. On the one hand, the actor will have a less than complete knowledge of causally structured natural phenomena. On the other hand, he will lack knowledge of his own and other people future actions at least as long as they do not become part of past history.

Though the actor will only be able to predict both kinds of events with some degrees of probability, in a sense, he is in a more fortunate position vis-à-vis uncertainties about natural phenomena. In this realm, the constancy principle allows him to project past observations regarding peculiar cause and effect relationships into the future. In other words, actors can hypothesize some specific time invariant causes at work and test their views thanks to experiments. The more tests are made, the more the relationships can be confirmed or discarded. That is how natural science works of course. At some point, it becomes known with practical certainty that combining two atoms of hydrogen and one atom of oxygen produces a molecule of water for example and some people
know how to build and operate high speed train networks without any major technical incident. Sometimes, observations of some natural phenomena do not shed light on all the relevant cause and effect relations but still allow actors to discover some regularity that can be expressed in terms of numerical probability. That's what Mises (1998) called “frequency” or “class probability”:

Class probability means: We know or assume to know, with regard to the problem concerned, everything about the behavior of a whole class of events or phenomena; but about the actual singular events or phenomena we know nothing but that they are elements of this class.

I throw a dice and the chance that I get a six is 1/6 under normal conditions. Or, a straightforward example used by Mises is a fruit dealer who knows based on past experience that one of every fifty apples will rot in his stock but he has no idea which one. In business, this kind of uncertainty can be and is typically dealt with by converting the loss in a cost accounting entry. Or, when several people face the same risks, they can pool risks and each one of them can then be insured. To come back to our corn producer, say that B’s corn in the example above could be destroyed in the future because of some extreme weather conditions. Now if the possible events involved can be identified as elements of a whole class of events, class about which one can know the behavior, then this risk is in principle insurable.

The important consideration here is that the very possibility of being able to identify a class and the related frequency of some event presupposes that it is ruled by causality. No quantitative constant can be expected as a rule from an acting entity. That is why frequency or class probability can strictly be applied only in the field of natural sciences and to events ruled by causality (Mises 1998, pp. 107-09).

Now, uncertainty can hardly be reduced to instances of class probability. As explained above, not every event can fit the “ruled by causality” category. People act, people choose that is,
and choices cannot be predicted on the basis of time-invariant causal laws. A particular action is not the automatic answer to an external stimulus but the deliberate employment of chosen means to reach chosen ends. Different actors or even the same facing same situation at different times can make different choices. Therefore, there can be no question of grouping some acts in a class of supposedly homogeneous events (Mises 1998, pp. 110-13). Each action is a class of its own, so to speak. This is the realm of “case probability”:

Case probability means: We know, with regard to a particular event, some of the factors which determine its outcome; but there are other determining factors about which we know nothing.

Case probability has nothing in common with class probability but the incompleteness of our knowledge. In every other regard the two are entirely different.

As a practical consequence, there is no question one could be insured against one's failures to predict other people's actions and act successfully. No one can really be insured against failure to predict what will be the demand for corn next year. In so far as corn producers such as B have to deal with such “true uncertainty” instead of “risks” (class probability), as Knight (1921) labeled them, they are “entrepreneurs” using their judgment about future conditions to direct the resources they own toward their goals. Or, they are, as everyone else is, “speculators” since they are under the necessity of adjusting their actions to other people's actions in the future. They reap profits or suffer losses depending on their ability to anticipate future developments and consumers' priorities (Rothbard 2004, pp. 509-16).

To be more specific, it should be clear that the uncertainty we are talking about as far as derivatives are mostly concerned with, is the one that the knightian/misesian entrepreneur or speculator faces. True, it is often claimed that a hedger actually gets an insurance product from his partner in exchange. Indeed, professionals pretend to sell insurance products to their clients against
the risk of default from their counterparts in exchange, such as credit default swaps for example. One can of course call things however one wants but for our analytical purposes here, the distinction between risk and uncertainty must be kept in mind and reflected in our terminology. And since the “risk” typically “insured” by derivatives is the occurrence of events defined as unfavorable price conditions or related business failures, and that prices or bankruptcies are social phenomena or outcomes of human action, they cannot be treated as instances of a class of homogeneous events to which class probability would apply.

If Knight and Mises are right regarding the distinction between risk and true uncertainty, derivatives cannot be considered as insurance products allowing insured people to hedge against risks. Actors dealing with derivatives act as speculators or entrepreneurs. The importance of this insight from an analytical point of view is that it helps us identify which branch of economics and tools we have to use. It is not about the economics of risk or insurance, it is about uncertainty, speculation or entrepreneurship. And the income obtained from this futures transactions are therefore residual profits and losses in the misesian sense (Mises 1998).

It is of course true that in modern neoclassical economics pure and perfect competition models characterized by all around equilibrium and no uncertainty are often only a way station toward an attempt at building more complex models. Some kind of uncertainty is introduced in the models under the so called “imperfect competition” hypothesis. However, as Israel Kirzner (1997, p. 64) noticed, the general tendency is for economists to ignore true uncertainty and the entrepreneurial function as understood by Knight and Mises:

Even though standard neoclassical theory certainly deals extensively with decision making under (Knightian) risk, this is entirely consistent with absence of scope for the qualities of imagination and boldness, because such decision making is seen as being made in the context of known probability functions. In the neoclassical world, decision makers know what they are ignorant about. One is never surprised. For Austrians, however, to abstract from
these qualities of imagination, boldness, and surprise is to denature human choice entirely.

(emphasis added)

In other words, imperfect competition is typically represented as what Knight and Mises called insurable risks and introduces as Kirzner also noticed “a new "production" cost, that of producing or searching for missing information”, the cost of identifying a class of homogeneous events. Hoppe (1997, p. 56) described the same tendency in the following way:

Rational expectation theorists only replace the model of man as a never-failing automaton with that of a machine subject to random errors and breakdowns of known types and characteristics. Rather than possessing perfect knowledge of all singular (individual) actions, man is assumed to possess merely perfect knowledge of the probability distribution of all future classes of actions.

There is no trace of true uncertainty in this world. As a consequence, the entrepreneur remains conspicuously absent of the picture and if derivatives might well find their place in the edifice, they can only be treated as insurance products providing some protection against events belonging to a class.

This is the error that must follow from considering only one kind of uncertainty. It is of course consistent with the mainstream popperian/friedmanian epistemology which can ultimately be considered as the source of this kind of errors (Friedman 1953). According to the prevalent view, economics is supposed to be grasped with the same method than the natural science, must produce falsifiable hypothesis. Now, inevitably this procedure must rule out genuine action and true uncertainty since by construction, it is intended to find and only to find time invariant operating cause and effect relationships. Relating past observations to new ones can be thought as
confirmation or falsification only by assuming the constancy principle to begin with (which cannot be discovered by the same procedure and must instead be thought as a necessary prerequisite, though falsificationists claim that only their method can help discover anything in any field). Otherwise, the events are simply unrelated.

If human behavior must be studied in such a way, this must assume that it is not self-determined in anyway or purposeful. There cannot be any specific uncertainty related to predicting one's and other people's actions since there are no actions. Man would face only one kind of uncertainty that can in principle be grasped through probability functions. It should be clear that one cannot claim such a thesis to be valid without contradicting himself but the point here is that only frequency probability can conceivably remain in such a world view, which explains why true uncertainty and entrepreneurship are not seriously considered by the mainstream and, as a consequence, that derivatives as tools to deal with “uncertainty” can hardly be conceived otherwise than insurance products.

II. CONDITIONS REQUIRED FOR DERIVATIVES TO EMERGE: 2. EXPECTATIONS AND VALUATIONS

If true uncertainty is then a necessary condition, it is not a sufficient one. What is also required is as in any voluntary transaction that actors benefit ex ante. In order for such a condition to emerge, there must be either divergent expectations regarding future prices (as in our example above) and/or a different degree of confidence regarding the case probability of the event and/or different valuations (A and B might have the same expectations or assessment of uncertainty and differing preferences regarding “uncertainty-bearing”)

III. CONDITIONS REQUIRED FOR DERIVATIVES TO EMERGE: 3. CAPITAL REQUIRED?
The reader might have noticed that in our typical derivative transaction between A and B above, no resource is transferred when they commit to the forward exchange. And the buyer of a future might pocket the difference between the spot price at maturity date and the future price if the first is higher, without having invested any money. Given that we are claiming the field of study here is uncertainty and speculation or entrepreneurship, it might appear that the Kirznerian interpretation of Mises’s entrepreneurial function as separated from the ownership function is vindicated. In fact, the following passage from Human Action (Mises 1998) can lead to this interpretation:

We may construct the image of an economy in which the conditions required for the establishment of futures markets are realized for all kinds of goods and services. In such an imaginary construction the entrepreneurial function is fully separated from all other functions. There emerges a class of pure entrepreneurs. The prices determined on the futures markets direct the whole apparatus of production. The dealers in futures alone make profits and suffer losses. All other people are insured, as it were, against the possible adverse effects of the uncertainty of the future. They enjoy security in this regard. The heads of the various business units are employees, as it were, with a fixed income.

It is not our ambition to settle this dispute here¹. However, one cannot win the debate on Kirzner's side (and Mises's as far as the above quote is concerned) by pointing out such an extreme example where the functional separation would become somehow empirically visible because it would be personal too. The reason is that even there the division is illusory. Even in this extreme case, there must be some money invested. For B the seller of the future, that is pretty obvious of course, since he needs to invest in the production of the corn he sells in advance. But A must also

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¹ For representative statements on both sides of the debate, see Kirzner (1973, p. 47) and Rothbard (1974). See also Salerno (2008) for an overview of this debate and related issues.
invest. That is, at the very least he must get the corn at maturity date in order to be able to sell it since one cannot sell what one does not own first. True, in the futures markets, things will happen differently, or so it seems. However, the only reason why the dealer is able to only pocket the difference in prices (if he is successful in his speculation), is that he paid for this clearing service, which definitely represents an investment. In other words, another condition for the forward/future transaction to occur is to have some capital invested in these projects (it is obvious in the case of options since as explained above there is a traditional present versus future goods involved to begin with).

IV. CONSEQUENCES OF DERIVATIVES MARKETS: 1. DISTRIBUTION OF INCOME

The basic example above with B and A engaged in forward trading has shown that in a sense, one trader’s profit is his partner loss. This is the obvious ex post consequence as far as monetary income is concerned. In this sense, this is a zero-sum game. The immediate implication is of course that the distribution of income is therefore altered by the very existence of the derivatives markets.

However, the zero-sum game idea overlooks an essential feature of the whole process, namely that a further degree of specialization and division of labor has occurred (as contrasted with what would happen without derivatives markets).

V. CONSEQUENCES OF DERIVATIVES MARKETS: 2. THE DIVISION OF LABOR EXTENDED

a. The Law of Association

The law of association is a cornerstone of economics. Little can be said by economists
without using it, at least implicitly. The basic facts are the following (Rothbard 2004, pp. 95-102). First, for two people to engage in a voluntary exchange, they must think they will benefit from it. The two goods must be different goods in the eyes of the parties and they must have reverse valuations on their respective value scales. We saw above that this rule applies to derivatives as well. Second, in order to give up some goods, parties to the exchange must own them first and they must possess a different proportion of the two goods under consideration in relation to their wants. And since goods do not appear out of thin air in their possession, they first must have specialized in the acquisition of the kind of goods they are ready to give up.

In order for such a specialization to occur, there must be differences between people regarding the suitability and yield of capital goods, consumer goods and ultimately nature-given factors they have come to own as well as in human skills and desirability of different tasks. Otherwise, each individual would give up the same amount of good in order to acquire other goods in isolation than in interpersonal exchanges. There would be no interest to specialize in the production of goods one does not consume oneself-no interpersonal division of labor- and no point to participate in exchanges.

Therefore, whenever and to the extent that variety exists between men and in their environment, there is room for increased productivity for everybody through division of labor and exchanges compared to isolation. And this is true, not only when each party has an absolute superiority in productivity in regard to one of the goods exchanged (the “law of absolute advantages”) but even when one party would be more productive in all fields and that each one specializes in the field where he has the greatest relative superiority. This is the “law of comparative advantage” or, since it actually includes the special case of absolute advantages and since comparative advantages are usually associated with a special case first analyzed by David Ricardo, it can be considered as the more universal law of association (Mises 1998 pp. 157-64). Nothing except the economy of a hypothetically isolated Robinson Crusoe can be discussed if one overlooks this fundamental insight.
b. Division of Labor: First Stages

For the aforementioned reasons, people will have an incentive to specialize in the production, say of corn, while others will produce violin lessons, meat, security services, etc. But there is no reason division of labor should only be “horizontal”. Comparative advantages will exist between different people regarding different tasks, no matter if they belong to the same production process or not. Then, to the extent that men recognize its productivity, “vertical” division of labor will emerge too. Instead of producing corn all along the way from providing the land for such a use to the sale of the final product to consumers, some people will only perform some specific tasks at each stage of the process.

For example, some specialists of transportation will take care of carrying corn from one place where it is cultivated to the other where it is sold. Thanks to financial intermediation, people could also invest in various stages of the process without being involved in any other way. They would then allow people who have a particular knowledge about corn production to use their talent to their full extent while they would not have done so if they had to finance the project themselves (because they would not have the resources or because they would not like to risk all their money into such a venture, which brings us to uncertainty).

c. Division of Labor and Uncertainty Bearing: Insurance and Entrepreneurship

Again, action in general and therefore any production process takes time and must deal with uncertainties. However, in the real world some people might be better at handling uncertainty than others and act accordingly.

For example, if corn could be destroyed in the future because of some extreme weather conditions and that these events can be considered as elements of an identifiable whole class of
events, instead of bearing the risk themselves, corn producers might contract with a genuine insurer who specializes in getting the relevant information about different risks and possess the financial resources that make him a better candidate to deal with the consequences of disaster.

Now, in the realm of “true” uncertainty or case probability, there can be specialization to some extent too. Instead of having corn producers working together in a cooperative firm as co-owners of their products, waiting for their prediction in regard to the monetary value of their product to turn out right or wrong, the bearing of uncertainty can be concentrated upon one or several investors while workers are paid in advance for their future production (Harrod 1952). As a consequence, capitalists-investors are in this regard entrepreneurs who will therefore reap profits or bear losses according to the quality of their judgment regarding future demand for the product while laborers are paid even if their production turns out to be valueless. This another example of a “vertical” division of labor. The capital/labor separation is among other things a way to transfer uncertainty bearing to the most eager and possibly the most capable of bearing it while workers can concentrate on what they do best and expand their output. While the “boss” at the top direction of the firm could be the main uncertainty-bearer, specialization could be carried further with a group of investors that do nothing else but finance the company through financial markets (Harrod 1952, p. 189).

**d. Derivatives: Uncertainty Bearing “Outsourced”**

Could uncertainty-bearing be broken up and transferred even further? We contend that the answer is yes and that this is derivatives instruments’ function. Given the uncertainty regarding the price of corn next year, producers would be in serious trouble if buyer's spending would not cover expenses engaged in the meantime. If some speculator A is eager to enter into a forward contract today stipulating in advance that today's price will be paid to B in one year for the corn, say because he thinks prices will rise, B will be able to hedge himself against the possibility of lower prices for
his product. The “risk” of a declining price will now be shifted onto the speculator's shoulders outside of the corn firm. As Mises put it in Human Action:

The futures market can relieve an entrepreneur of a part of his entrepreneurial function. As far as an entrepreneur has "insured" himself through suitable forward transactions against losses he may possibly suffer, he ceases to be an entrepreneur and the entrepreneurial function devolves on the other party to the contract. The cotton spinner who when buying raw cotton for his mill sells the same quantity forward has abandoned a part of his entrepreneurial function. He will neither profit nor lose from changes in the cotton price occurring in the period concerned.

Now, again this is not simply a zero sum game, one partner in the exchange profiting from a price change while the other loses. As in the case of capitalists and laborers, The forward contract (or an option), by placing the risk on those who want to bear it, made possible for our corn producers to concentrate on what they do best and not spend their time at mobilizing resources to exert judgment on possible future prices. This is the specialty of the speculator who could not exert his talents to the same extent if he also had to care about the specific knowledge required to produce corn. Investment with the possibility of hedging oneself becomes more attractive, which implies a higher overall output in the economy. Plus, to the extent that the quality of entrepreneurial judgement is thereby improved, speculators who are best able to make correct forecasts outcompeting others, the resource allocation process through between the different production processes is improved to the benefit of people as consumers. Derivative instruments use then appears as the ultimate step toward specialization in uncertainty-bearing and full scale division of labor.

CONCLUSION
The aim of this article was to show what the fundamental requirements are in order for derivatives trading to emerge and to explain the basic function that they can fulfill in a market economy. We have shown that a *sine qua non* condition is the prevalence of uncertainty regarding people's actions. More specifically, we have defended Frank Knight and Ludwig von Mises' thesis according to which actors face two distinct kinds of uncertainty, and outlined the importance of this insight for the analysis of derivatives. We have explained that actors face risks that can be subsumed under the heading of class probability and can be dealt with through insurance, applicable to natural events outside of man's control, and true uncertainty regarding their and other people's future acts, which is born by people insofar as they are entrepreneurs. It has been shown that its is in their quality of entrepreneurs that people deal with derivatives, which should therefore not be considered as insurance products. Other conditions required for their very existence are different preferences regarding uncertainty bearing, and/or divergent expectations or degrees of confidence regarding the same expectations on the part of partners in derivatives trading, and some capital investment. Finally we have shown that in their normal use in the context of a market economy, derivatives fulfill the function of transferring uncertainty bearing to the most eager to bear it and can therefore enhance the social division of labor, increase global production and potentially enhancing the allocation between different production processes insofar as speculations involved by the new uncertainty bearers are successful.

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