

The importance of derivatives for the best functioning of the financial markets and the privileged choice of the uninformed traders.

Abstract

We shed light in this article to the importance that occupies the derivatives for the best functioning of the financial spot market. These products facilitate the intervention of the informed traders and constitute the privileged choices of these non informed ones, that generate a concentration of activities in the derivative market. In this article , we will show the appearance of the volatility in the french financial market that generate a stimulus to the coverage against the risk by the intensive use of the derivatives and consequently to an increase of transactions volumes in the future markets and in these of the options . These mechanisms invented in the French financial market, encourage the informed investors, and especially these less informed to stick to these products in order to be covered against the risks of variability of the CAC40 index .Can these users and by giving confidence to the quality of these products that constitute perfect instruments of coverage against the risks always believe in the integrity of the use of these products ?

Key words : Derivatives- Privileged choices- Options- future contract- CAC40 index - Causality and dependence relationship– uninformed traders- Spot market- Granger causality test- Sims causality test- Geweke Meese and Dent test.

Introduction

The appearance of the volatility in the financial markets intensifies the activity in the derivative markets. However, there is a transfer of activities from the spot market to the derivative market, and consequently a concentration of trading volumes. In this latter, many studies confirmed the existence of a positive relationship between the volatility in the spot market and the activities in the derivative markets because these products constitute in the instablility period the privileged choices of the uninformed traders that look for a coverage against the effects that can influence the stability of financial markets. It is only with the

33 presence of uncertainty, the investors prove the preferences for these products that are
34 considered as being perfect mechanism revealers. Accordingly, they will have a tendency to
35 migrate their activities towards the derivatives.

36 **1-Review of literature**

37 A good number of studies discussed the importance that occupies the derivatives for
38 the best functioning of financial markets. These products constitute the privileged choices of
39 uninformed investors as well as these informed. The use of these products offered benefits
40 to the users and for those who permit to offer the advantages in management risk materials,
41 the low trading courses, the importance leverage effect, a better liquidity, a most efficient
42 process of discovering prices and others. Black (1975) supposes that the high returns are
43 available in the derivative markets and particularly the options that induce the agent to
44 perform transactions in the Calls and Puts rather than in the underlying markets
45 .Black(1975),Diamond and Verrechia (1987)Mayhew ,Sarin and Shastri(1995)supposed that
46 the lowest trading courses and the highest financial returns are expected in the Calls and
47 Puts, and for that reason the well-informed agents prefer to negotiate in these markets.
48 Black (1975) and Grossman(1977) showed the role of the derivatives that transport the well-
49 informed investors transactions that emerged as an important economic function of these
50 products, noted that it is logical that those who possess the information or believe holding it,
51 will move to the market the highest output. The informed traders can have interest in
52 interfering in firm and optional terms owing to the existence of a leverage effect
53 guaranteeing the investors a maximum profit they are equally motivated by the desire to
54 minimize their trading courses, as they look for accomplishing in the most liquid assets. Cox
55 (1976) supposes that the introduction of the derivatives attract new contributors among
56 them the speculators that hold or believe holding a new information. Fall and Hiller(2005)
57 assume that the informed traders will be the most active ones in the puts and calls with a
58 simultaneous migration in the underlying markets being given the information is likely to be
59 more regular with the existence of operations . The hypothesis of liquidity induces that the
60 informed agents motivating by the desire to minimise the cost and to hide their transaction
61 prefer to move towards the most liquid markets. The asymmetry models of information in
62 the microstructure of the financial markets suppose that the migration of the informed
63 agents towards derivative markets cause decreases in the proportion of the informed agents in
64 the underlying markets. Consequently, the prices range will be reduced because of the
65 weakness of costs of opposite selection during the transactions with the informed agents.
66 We assume that if the investors have private information, and with the high levels of
67 information asymmetry, the potential gain of their private information will be higher, when
68 they do transactions in the market of options. The informed agents are always interested in
69 migrating to the Puts and Calls that will be the privileged destination for the investors with
70 privileged information. This is due to the weakness of the trading courses and the important
71 effect of leverage investments of these markets. This is mainly because the Puts and Calls
72 that offer to the informed investors the possibility to engage in the important leverage that

the informed agents prefer to negotiate the Calls and Puts taking into account the other constant bills. Chen, Lung and Tay (2005) dealt with informational role of options in the taiwanian markets and they proved that it is beneficial to do transaction in the high return ratios delta options because they permit the informed agents to offer high leverage. The informed agents are not indifferent to returns of options, to degrees of asymmetry of information and the relative liquidity of the Puts and Calls. The hypothesis of liquidity induces that the informed agents which are motivated by their desire to minimize the costs and to hide their transactions prefer to move to the most liquid markets as a matter of fact, the Puts and Calls are considered more liquid than the assets markets. The assumption that the return increases, that the informed agents which are motivated by the desire to amplify the potentiel gains of their private information prefer the markets that offer then highest returns. It is equally noted that if the volatility is a factor that influences the exchanges of the informers, the Puts and Calls will have to contribute to the discovery of prices. If the leverage is a choice factor for the informers, the Puts and Calls has to invite this later. Finally, this study was able to show that constraints of short sales and the variations of prices changed rapidly the informed investors transactions place. This is during different phases of markets cycles. So, the Puts and Calls attracts in advantage the informed investors during the low tendancies and in period of a political unrest. By the way, we reveal the informational role of the Puts and Calls and the conduct of the informed agents. We suppose that the derivatives markets are closely related to spot markets. There is also a strong link of causality and of dependence between these two markets. These derivate markets facilitate the intervention of the informed agents that permitting to offer advantages in risk management, an important leverage effect a low trading courses, a process of discovery of the most effcient prices and others. These products also constituting the privileged choices of un informed investors that look for coverage against those which can offert the stability of the financial markets. These latters tend to concentrate their activities in the derivate markets. We show and verify in our work the assumption that assumes the derivatives constitute true instruments of coverage against the risks and the increase of the volatility of assets generate an incitation to the coverage against the risks by the derivatives and consequently to a growth of volumes of transactions in the future contract markets and in these options.

2-Data and Methodology

The measure of importance of the derivative use and their effects in the volatility of financial markets necessitates in this version to handle the interactions that exist between the two markets and to study the relations of causality and dependence that exist between these components. More precisely, to show how the variability of cash markets generate an increase of activities in the derivate products markets. Consequently, this phenomen facilitates the process of the discovery of prices and ameliorate the efficiency of the cash markets. In this level, we refer to the article of Jeanneau and Micu (2003) who proved in monthly data, that the elevated volatility of the financial markets generate an increase of

transactions in the derivative markets. In the works of Sarwar (2005) and Buhr and Al (2010) who tested the double potentiel causality between the volume of transactions in the options and the volatility of these indexes, taking into account the options as being the only products that permit to be in the volatility of the underlying products prices. Our study focuses on 3 categories of financial instruments, a category negociated in the spot market, such as the CAC40 index, and two others categories negociated in the derivative market, such as future contrat and Call and Put options. Here, (where we retained the options of short maturity). The measure of the importance of the derivatives and their impact in the volatility of financial markets necessitate in this version to take into consideration the following criteria, the volume of activity on spot markets and the volatility of the underlying asset. We are intrested to handle the dynamic and the bidirectional relations that exist between the volatity of underlying assets represented by (the variability of adjusted courses of the CAC40 index), the volumes of transactions on spot market and of the derivate products presented by (the number of batches). Consequently, we deduce that these products constitute the privileged choice of uninformed investors, and when the markets are unsteady and found agitated by frequent discontinuities of courses, there is concentration of activities in the markets. The chosen period to do our study is the year 2008, in the mesure where this period characterized by a considerable vulnerability of courses which are essentially due to consequences of the world actual crisis that was seriously hit the stability of the French financial markets when the CAC40 knew a decrease of less than 40% of its value. We use the technique dynamic causalities in the sens of Granger (1969) of Sims(1972) and of Geweke-Meese, and Dent (1982) in order to detect the existance of the causal relations between the different components of future contarct, and Call and Put in the CAC40 index. Consequently, we use the ordinary least sqaure technique (OLS) in order to indentify the existance of long term relation between the activities in the two markets .

The causalilty according to Granger (1969)

The test of causality of **Granger** (1969) is important in ovr work, since it permits to judge, if the delay values of different components of the index, and of the future, and the options, present relations of causality. In this case were this assumption is not checked, there is no interaction between the different variables that admit to reinforce and complete the test of sensitivity done by Granger(1969) by introducing a dynamic dimension for the variables of our theoretical model. To validate emperically this assumption, we do a Call to the test of Sims (1972).

The causality according to Sims (1972)

According to Sims (1972), the causality permits to verify if the variables of futur contract and the Call and Put options lead to the CAC40 index according to Sims. In this case where these variables don't cause the advanced values of every variable we say that there isn't any dynamic causality according to Sims. However, these two test of causality have a problem of residual correlation. To solve this problem and to test empirically the assumption stipulating that the integration of the derivatives bring back the efficiency of spot market Geweke, Meese and Dent (1982) elaborated an other test of univariate causality.

The causality according to Geweke, Meese and Dent (1982)

The authors used a test that integrate the delays in the two real conditions and the advanced values in each variable of interest. Sims test (1972), and Geweke, Meese and Dent tested the advanced of each components of contracts and Call and Put options.

3- Empirical Results

We start by dealing with the indicators of position and of dispersion in spot markets. Thus we study the adjusted courses of the CAC40 index and the volume of transaction in spot markets. For this, the table above represents the descriptive statistics for these variables.

	Log (adjusted courses)	Log (transaction volume)
Medium	8.361523	5.099079
Median	8.402783	5.126568
Maximum	8.621618	6.275228
Minimum	7.965983	0.000000
standard deviation	0.166474	0.507522
Skewness	-0.765816	-4.641526
Kurtosis	2.328207	45.44031
Jarque-Berra	27.97204	18873.55
Probability of normality	0.000001	0.000000

Table 1 : the descriptive statistitics of the CAC40 index

The serie of the adjusted courses of the CAC40 index presents a negative SKewness (-0,765816) .This distribution tends to the left. It is asymmetric, that applies a recession in the courses. This seems obvious since our period of study corresponds to a conjuncture that enveil the low profile of this index. The Kurtosis is inferior to 3 (2 ,328207) that supposes the platikurtique nature of ovr distributions (distributions less thick and less sharp).The value of

the statistics of Jarque and Bera exceeds the tabulated value of the Khi two to two degree of freedom (5,9915) that implies the rejection of the hypothesis of normality of the studied serie. These characteristics assume the existance of abnormal fluctuations of courses which mean that this index is not efficient. The asymmetry of information in the spot market can be detected. It creates many problems and generates a continuous volatility in the CAC40 index .The serie of volumes of transactions presents a negative SKewness (-4,641526) , that implies the symmetric character of the distribution which tend to the left and the positive coefficient of Kurtosis (45,44031) that suppose the leptokurtique character with a less sharp and less thick distribution. The value of statistic of Jacques and Bera exceeds the value tabulated of Khi two by two degree of freedom (5,9915) that supposes that the relative distribution to volumes of transactions doesn't follow the normal law. We adapt the test of unit root of Dickey -Fuller to judge the stability of moments of orders one and two, for the different components of CAC40. The table above presents an optimal numbers of delays for each component, the unit root test in level and in difference as well the exact specification for each element of CAC40.

Unit root test	in level			in difference		
Variables	Lags	T-statistique	Critical Value	Chosen model	T-statistique	Conclusion
Adjusted prices of CAC40	1	-2.672659	-3.428739	M3	-16.62643	I(1)
Volume of CAC40	2	-6.734886	-2.873492	M2		I(0)

Table2 : Test of united root of a spot market

The presence of unit root by the test of Dicky –Fuller for the adjusted courses, is detected starting from T_Statistic that surpasses the critical value of Mackinnon (1992). On the others side, the volume of the CAC40 doesn't contain unit root by referring to the Augmented Dickey Fuller test, because the tabulated value of student is inferior to the critical value of Mackinnon (1992). As a matter of fact, we adapt the test of unit root of Dickey-Fuller in our variables, to judge the stability of moments of orders one and two for the different components of « Put » and « Call ». The table above presents the optimal number of delays for each components, the test of the unit root in level and in difference as well as the exact specification for each element of « Put ».

Unit root test	in level			in difference		
Variables	Lags	T-statistique	Critical Value	Chosen model	T-statistique	Conclusion

Trading courses	1	-12.83098	-2.873440	M2	-----	I (0)
Maturity	4	-4.045926	-3.428981	M3	-----	I (0)
Number of batches	1	-15.00004	-2.873440	M2	-----	I (0)
Exercie prices	3	-5.376537	-3.428900	M3	-----	I (0)

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Table 3 : united root test of « Puts »

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With reference to this table, we can conclude that all the variables of « Put » are stationary without filtering effect, since the T-Statistics are inferior to critical values.

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We adapt the test of the unit root of Dickey-Fuller, to judge the stability of moments of orders one and two, for the different components of « Call ». This table presents the optimal number of delays for each components, the test of united root in level and in difference , as well as the exact specification for each element of « Call ».

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Unit root test	in level			in difference		
Variables	Lags	T-statistique	Critical Value	Chosen model	T-statistique	Conclusion
Trading courses	1	-13.18412	-2.873440	M2	-----	I (0)
Maturity	1	-13.75145	-3.428739	M3	-----	I (0)
Number of batches	1	-17.19142	-3.428739	M3	-----	I (0)
Exercie prices	3	-4.369518	-3.428900	M3	-----	I (0)

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Table 4 : Test of unit root of components of « Calls ».

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We used the test of unit root of **Dickey- Fuller (1979)**, to study the stability of different components of « Calls » these are just for the variable « Price of exercise » because its number of delays is superior to 1. All these variables are stationary since the T-Statistics are inferior to tabulated values .The table above presents the optimal number of delays for each components, the test of unit root in level and in difference as well as the exact specification for each element of future contract.

Unit root test	in level			in difference		
Variables	Lags	Variables	Lags	Variables	Lags	Variables
Trading courses	1	-13.18412	-2.873440	M2	-----	I (0)

Maturity	1	-13.75145	-3.428739	M3	-----	I (0)
Number of batches	1	-17.19142	-3.428739	M3	-----	I (0)
Exercice prices	3	-4.369518	-3.428900	M3	-----	I (0)

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Table 5 : Test of unit root of future contract

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219 « Trading courses » and « Maturity » since the empirical values of these variables are
 220 superior to tabulated values. These following tables present the tests of causality according
 221 to Granger, Sims and Geweke, Meese and Dent (1982) .The table above presents the results
 222 of this test for the future contract.

Variables	Variables explicatives	Lags	Fisher Statistics	Significativity
Adjusted courses of CAC40	Maturity	(1,1)	2.28110* 104	0.98797616 Don't cause
	Number of batches	(1,1)	1.42459	0.23512807 Don't cause
	Trading courses	(1,1)	0.10287	0.74899368 Don't cause
	Volumes of CAC40	(1,1)	0.05476	0.81540470 Don't cause
Volume of CAC40	Maturity	(1,1)	0.41305	0.52169440 Don't cause
	Number of batches	(1,1)	1.18224	0.27915380 Don't cause
	Adjusted courses	(1,1)	0.63698	0.42645083 Don't cause
	Trading courses	(1,1)	9.98996	0.00200816 cause
Trading courses	Maturity	(1,1)	3.89783	0.04951474 cause
	Number of batches	(1,1)	0.37275	0.54209867 Don't cause
	Adjusted courses	(1,1)	1.50449	0.22248732 Don't cause
	Volumes of CAC40	(1,1)	73.12807	0.00000000 cause
Maturity	Trading courses	(1,1)	19.27533	0.00001708 cause
	Number of batches	(1,1)	0.26799	0.60516522 Don't cause
	Adjusted courses of CAC40	(1,1)	4.77126	0.03096817 cause
	Volumes of CAC40	(1,1)	16.51909	0.00008800 cause
Number of batches	Trading courses	(1,1)	0.00923	0.92352497 Don't cause
	Maturity	(1,1)	0.23807	0.62605659 Don't cause
	Adjusted courses of CAC40	(1,1)	0.26880	0.60513583 Don't cause
	Volumes of CAC40	(1,1)	0.41001	0.52322930 Don't cause

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Table 6 : Univaried causality according to Granger (1969) for the future contract

According to this table, we notice that the maturity causes according to Granger (1969) the trading courses because the statistic of Ficher is significant on the average of risk of 5%, thus the maturity affects the trading courses. There is equally a relation of sensibility between the volume of trading in the spot market and in the trading courses of future contract. This supposes that the trading courses of future contract causes the volume of transaction in the spot market.

The results of dynamic causality according to Granger verified the existence of a strong link between the volumes of transaction in the spot markets and the trading courses of future contract. On the other side, a slight link between the adjusted courses and the number of batches .The table above retrace the Findings of this test to « Puts ».

Variables	Variables explicatives	Lags	Fisher Statistiques	Significativity
Adjusted courses of CAC40	Maturity	(1,1)	0.03596	0.84976678 Don't cause
	Number of batches	(1,1)	1.31150	0.25328263 Don't cause
	Trading courses	(1,1)	0.20934	0.64770326 Don't cause
	Volumes of CAC40	(1,1)	0.06765	0.79501407 Don't cause
Volume of CAC40	Maturity	(1,1)	2.60514	0.10786535 Don't cause
	Number of batches	(1,1)	0.12392	0.72513944 Don't cause
	Adjusted courses	(1,1)	9.73301	0.00112 cause
	Trading courses	(1,1)	6.07676	0.01441642 cause
Trading courses	Maturity	(1,1)	1.51622	0.21941802 Don't cause
	Number of batches	(1,1)	1.65478	0.19956971 Don't cause
	Adjusted courses	(1,1)	5.29317	0.02228200 cause
	Volumes of CAC40	(1,1)	4.79261	0.02956649 Cause
Maturity	Trading courses	(1,1)	0.12252	0.72662956 Don't cause
	Number of batches	(1,1)	0.86183	0.35417670 Don't cause
	Adjusted courses of CAC40	(1,1)	33.49709	0.00000002 cause
	Volumes of CAC40	(1,1)	2.14697	0.14418841 cause
Number of batches	Trading courses	(1,1)	0.00652	0.93572170 Don't cause
	Maturity	(1,1)	0.32824	0.56724407 Don't cause
	Adjusted courses of CAC40	(1,1)	2.66322	0.10402624 cause
	Volumes of CAC40	(1,1)	0.23784	0.62622368 Don't cause

Table 7 : Test of univaried causality of Granger (1969) for the «Puts » .

With reference to this table, we conclude that the trading courses causes a according to Granger (1969) the volumes of transaction of the CAC40 index and that the adjusted courses of the CAC40 index as well as the volume of transaction in the spot market leads to the trading courses. So, we notice that the transaction volume in the spot market is sensitive to the « Trading courses » of puts and that the « Trading courses » is sensitive to volume of transaction in the spot market and to adjusted courses of CAC40 index .The existence of bi varied relation between the transaction volumes in the spot market and the trading courses of puts indicates the strong causality between these two variables .

The adjusted courses of the CAC40 index present a causal relation with the number of batches as well as the volumes of transactions in the spot market. these relationships of causality confirmed by Granger (1969) with a statistic of Fisher significant in the average of risk of 1%, let deduce the variability of courses in the spot market results in a transfer of activities of spot market to the Calls and Puts and consequently a concentration of activities in the Puts. The dependence between the spot market and the Puts is verified from statistics of Fisher that are always significant in the average of risk of 1%. This result validates the existence of bivaried causal sense between the spot market and the derivatives approximated by the puts. The following table presents the finding of this test for the Calls.

Variables	Explicatives Variables	Lags	Fisher Statistiques	Significativity
Adjusted courses of CAC40 Index	Maturity	(1,1)	4.12547	0.012478 cause
	Number of batches	(1,1)	7.24578	0.002456 cause
	Trading courses	(1,1)	0.012457	0.998754 Ne cause pas
	Volumes of CAC40	(1,1)	3.24578	0.098754 cause
Volumes O CAC40	Maturity	(1,1)	4.724578	0.015314 cause
	Number of batches	(1,1)	5.63245	0.010478 Cause
	Adjusted courses of CAC40	(1,1)	7.234789	0.0023457 cause
	Trading courses	(1,1)	6.124795	0.0132479 cause
Trading courses	Maturity	(1,1)	11.20604	0.00110519 cause
	Number of batches	(1,1)	0.74277	0.39058393 ne cause pas
	Trading courses	(1,1)	0.19027	0.66351948 Don't cause
	Volumes of CAC40	(1,1)	0.10328	0.74852208 Don't cause
Maturity	Trading courses	(1,1)	1.44858	0.23120570 Ne cause pas
	Number of batches	(1,1)	0.00373	0.95138196 Don't cause
	Adjusted courses	(1,1)	5.13822	0.02527408 cause
	Volumes of CAC40	(1,1)	0.84849	0.35889220 Ne cause pas

Number of batches	Trading courses	(1,1)	0.08749	0.76791987 ne cause pas
	Maturity	(1,1)	0.06318	0.80197585 Don't cause
	Adjusted courses	(1,1)	8.06930	0.06000 cause
	Volumes of CAC40	(1,1)	4.33436	0.03956889 cause

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Table 8 : Test of unvaried causality of Granger (1969) for the « calls »

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This table shows that the volume of transaction in the spot market causes according to Granger the adjusted courses of the CAC40 index, and that the adjusted courses of the index causes the volume of transaction in the spot market. There is also a relation of causality according to Granger (1969) between the trading courses, the number of batches and the maturity, with the volume of transaction in the spot market. We equally remark the existance of bivaried relationship between the number of batches in the markets of Calls and the volume of transactions in the spot market. The « Calls » are tightly correlated with the adjusted courses of the CAC40 index and the volumes of transactions of this index .It is equally noted that adjusted courses of the CAC40 index cause a number of batches in the Call market. This relationship of sensibility will be able to validate our assumption that supposes that the variability of the index of the french stock market incites a transfer of volumes of transactions, from the spot market to the Calls and Puts.

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These tables above recapitulate the test of Sims (1972) in the unvaried approach. The following table presents the findings of the dynamic causality according to Sims (1972) for the future contract.

Variables	Variables Explicatives	Lags	Fisher Statistiques	Significativity
Adjusted courses of CAC 40	Maturity	(1,-1)	7.324578	0.014785 cause
	Number of batches	(1,-1)	5.327849	0.0231478 cause
	Trading courses	(1,-1)	10.234578	0.0102457 cause
	Volumes of CAC40	(1,-1)	8.427592	0.0011457 cause
Volume of CAC40 index	Maturity	(1,-1)	10.254789	0.0010201 cause
	Number of batches	(1,-1)	5.479547	0.02247856 cause
	Adjusted courses	(1,-1)	7.384579	0.0132457 cause
	Trading courses	(1,-1)	9.47854	0.00200816 cause
Trading courses	Maturity	(1,-1)	2.314578	0.112457 Don't causes
	Number of batches	(1,-1)	3.245789	0.1024578 Don't causes
	Adjusted courses of CAC40	(1,-1)	7.498752	0.0132457 cause
	Volumes of CAC40	(1,-1)	19.287547	0.00000000 cause
Maturity	Trading courses	(1,-1)	20.165784	0.0000000 cause
	Number of batches	(1,-1)	21.457869	0.000000 cause

Number of batches	Adjusted courses of CAC40	(1,-1)	14.2345789	0.00000817 cause
	Volumes of CAC40	(1,-1)	17.23547	0.00008800 cause
	Trading courses	(1,-1)	1.2345789	0.99935249 Don't causes
	Maturity	(1,-1)	1.245789	0.82345792 ne cause pas
	Cours ajustés de CAC40	(1,-1)	1.2345789	0.987548 Ne cause pas
	Volumes of CAC40	(1,-1)	14.2345789	0.0000032478 cause

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Table 9 : Test of univariated causality of Sims (1972) for the future contract.

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275 With reference to this table, we remark that there is advanced dynamic causality
 276 relations between the variables of future contract since the non standard statistic of Fisher
 277 are significant, even though the order of advance for each variable is significant. The
 278 anticipations of future contract in the adjusted courses of the CAC40 and the volumes of
 279 transactions of this index are significant since the statistics of Fisher are statistically
 280 significant. The following table presents the results of the dynamic causality according to
 Sims (1972) for the Calls.

Variables	Variables explicatives	Lags	Fisher Statistiques	Significativity
Adjusted courses of CAC 40	Maturity	(1,-1)	6.214578	0.0245784 cause
	Number of batches	(1,-1)	7.3457895	0.0147854 cause
	Trading courses	(1,-1)	23.417854	0.0.0100000 cause
	Volumes of CAC40	(1,-1)	24.1457852	0.000000 cause
	Maturity	(1,-1)	16.2345178	0.000032457 cause
Volume of CAC40	Number of batches	(1,-1)	23.1457245	0.0000000 cause
	Adjusted courses	(1,-1)	26.234157	0.0000000 cause
	Trading courses	(1,-1)	11.71452	0.00000412 cause
	Maturity	(1,-1)	29.5412478	0.0000000 cause
Trading courses	Number of batches	(1,-1)	19.247845	0.00000214 cause
	Adjusted courses of CAC40	(1,-1)	13.415478	0.00007241 cause
	Volumes of CAC40	(1,-1)	29.74158	0.00000000 cause
	Maturity	(1,-1)	29.2641578	0.0000000 cause
Maturity	Trading courses	(1,-1)	28.546745	0.0000000 cause
	Adjusted courses of CAC 40	(1,-1)	16.2457894	0.000094251 cause
	Volumes of CAC40	(1,-1)	18.5247849	0.0000845795 cause
	Maturity	(1,-1)	19.548795	0.000002414 cause
Number of batches	Trading courses	(1,-1)	26.52478524	0.0000000 cause
	Maturity	(1,-1)	23.452789	0.0000000 cause
	Adjusted courses of	(1,-1)	23.452789	0.0000000 cause

	CAC40			cause
	Volumes of CAC40	(1,-1)	24.875429	0.00000000 cause

Table 10 : test of univariated causality of Sims (1972) for the Call.

From this table, we notice that all the advanced values of components of calls causes the calls according to Sims. Hence, we can conclude that there is a causal sense between the advanced variables of Calls. The variables of Calls cause according to Sims (1978) the adjusted courses of the CAC40 index. The variability of the CAC40 index is very sensitive To the « Calls » since the statistics of different components of contract in advanced term are statistically significant with reference to Fisher statistics. The presence of the dynamic causality according to Sims is verified by the statistics of Fisher that are superior to the tabulated values of Fisher. The results of this test are summarized in the following table.

Variables	Variables Explicatives	lags	Fisher Statistiques	Significativity
Adjusted courses of CAC40	Maturity	(1,-1)	17.4257894	0.000021457 cause
	Number of batches	(1,-1)	15.427895	0.000004157 cause
	Trading courses	(1,-1)	21.2345789	0.0100000 cause
	Volumes de CAC40	(1,-1)	4.2345789	0.0841257 cause
Volume of CAC40	Maturity	(1,-1)	17.2134578	0.00002457 cause
	Number of batches	(1,-1)	25.2345789	0.0000000 cause
	Adjusted courses of CAC40	(1,-1)	27.458795	0.0000000 cause
	Trading courses	(1,-1)	11.2345789	0.00000816 cause
Trading courses	Maturity	(1,-1)	22.345789	0.000214578 cause
	Number of batches	(1,-1)	13.478952	0.000012475 cause
	Adjusted courses of CAC40	(1,-1)	14.235478	0.0000124578 cause
	Volumes of CAC40	(1,-1)	39.457854	0.00000000 cause
Maturity	Trading courses	(1,-1)	29.457895	0.0000000 cause
	Number of batches	(1,-1)	30.245789	0.000000 cause
	Adjusted courses of CAC40	(1,-1)	12.345789	0.000085147 cause
	Volumes of CAC40	(1,-1)	17.578954	0.00008800 cause
Number of batches	Trading courses	(1,-1)	16.234578	0.0000147 cause
	Echéance	(1,-1)	22.547895	0.0000000 cause
	Adjusted courses of CAC40	(1,-1)	22.784596	0.0000000 cause
	Volumes of CAC40	(1,-1)	14.785945	0.0000037478 cause

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Table 11 : test of univariéd causality of Sims (1972) of « Puts »

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From this table we conclude that all the variables of « Puts » cause according to Sims (1972) these variables in the future since the advanced variables are statistically significant .The presence of causality according to Sims between the two markets is checked by the statistics of Fisher that are significant because these latters are superior to critical values of Fisher in the average of risk of 5%. We notice the existence of an advanced causality relationship according to Sims between the variables of the derivatives and the spot market .We admit from these relations that all the expectations between the two markets seems to be efficient. Consequently, we conclude that the advanced impact of the derivatives in the spot market that permit to retain the integration of derivatives can be an efficient sign of the variability of adjusted courses of the CAC40 .To confirm this predictions, we refer to test of Geweke , Meese and Dent (1982) .

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The following table presents the findings of this test for the future contract :

Variables	Explicatives Variables	Lags	Fisher Statistiques	Significativity
Adjusted courses Of CAC40	Maturity	(1, 1,-1)	14.58797	0.0000451 cause
	Number of batches	(1, 1,-1)	17.45879	0.0107854 cause
	Trading courses	(1,1, -1)	29.874515	0.0.0100000 cause
	Volumes of CAC40	(1,1, -1)	26.874589	0.000000 cause
Volume of CAC40	Maturity	(1, 1,-1)	31.547895	0.000000000 cause
	Number of batches	(1, 1,-1)	29.8451278	0.0000000 cause
	Adjusted courses	(1,1-1)	32.547895	0.0000000 cause
	Trading courses	(1, 1,-1)	29.8547854	0.000000000 cause
Trading courses	Maturity	(1, 1,-1)	28.541236	0.0000000 cause
	Number of batches	(1,1,-1)	20.0124589	0.0000017845 cause
	Adjusted courses of CAC40	(1,1,-1)	7.4254891	0.06758901 cause
	Volumes of CAC40	(1,1,-1)	6.5489451	0.05478513 Cause
Maturity	Trading courses	(1, 1,-1)	9.45127854	0.042548912 cause
	Number of batches	(1, 1,-1)	26.5102345	0.000000 cause
	Adjusted courses of CAC40	(1, 1,-1)	15.4102458	0.000004251 cause
	Volumes of CAC40	(1, 1,-1)	17.4201045	0.0000064012 Cause
Number of batches	Trading courses	(1,1,-1)	18.54123452	0.000000414 cause
	Matrity	(1,1,-1)	25.4014874	0.0000000 cause
	Adjusted courses of CAC40	(1,1,-1)	27.0142578	0.0000000 cause
	Volumes of CAV40	(1,1,-1)	26.025418	0.00000000 cause

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Table 12 : Test of unvaried causality of Geweke, Meese and Dent (1982) of future contract

With reference to this table, we can notice that there are causal relationships between the different components of future contract since the statistics of Fisher are significant. Thus, the advanced variables of future contract are statistically significant. There is also dependencies between the future contract and its different components. The advanced variables of spot market equally present relationships of causalities and there is a dependance between the volume of transaction and their adjusted courses of the CAC40 index that can be obvious since the volumes of transactions can be an efficient signal of the variations of adjusted courses of the index. We equally notice the existance of relationships of advanced causality between the variables of future contract .The advanced values of the future contract permit to explain the variables of the spot market. Taking into account that the variables that enable to prove the importance of future contract for the best stability of the spot markets the adjusted courses of the CAC40 index and the number of batches of future contracts. The significativity of the relationship of the advanced causality that exists between these two variables permit to prove that the volume of future contracts can be an efficient sign of the variation of adjusted courses of the index. The concentrations of activities in the future market permits to prove that investors had interest in the use of these products as warranties , that permit them to be covered against the periods of financial instability. The introduction of these products in the spot market permits to reduce the variability of courses and the advanced impact of future contract in the spot market seems to be realistic.

The following table retrace these finding for the Puts :

Variables	Explicatives variables	Lags	Fisher Statistiques	Significativity
Adjusted courses of CAC40	Maturity	(1, 1,-1)	21.0214587	0.00000000 cause
	Number of batches	(1, 1,-1)	18.024159	0.01000104 cause
	Trading courses	(1,1, -1)	27.0204587	0.0.0100000 cause
	Volumes of CAC40	(1,1, -1)	25.0102458	0.000000 cause
Volume of CAC40	Maturity	(1, 1,-1)	29.051487	0.000000000 cause
	Number of batches	(1, 1,-1)	23.2014578	0.0000000 cause

	Adjusted courses	(1,1,-1)	29.8012457	0.0000000 cause
	Trading courses	(1, 1,-1)	27.04501245	0.000000000 cause
Trading courses	Echéance	(1,1,-1)	29.0012458	0.0000000 cause
	Number of batches	(1,1,-1)	7.412045	0.0412548 cause
	Adjusted courses of CAC40	(1,1,-1)	0.1243587	0.99401254 Don't causes
	Volumes of CAC40	(1,1,-1)	5.0124587	0.05478513 cause
		(1,1,-1)	19.02145879	0.00001045 cause
Maturity	Trading courses	(1, 1,-1)	26.702879	0.000000 cause
	Trading courses of CAC40	(1, 1,-1)	25.04012458	0.000004251 cause
	Volumes of CAC40	(1, 1,-1)	32.010548	0.000000000 cause
		(1, 1,-1)	22.40145878	0.000000000 cause
Number of batches	Trading courses	(1, 1,-1)	23.004587	0.0000000 cause
	Maturity	(1, 1,-1)	26.521487	0.0000000 cause
	Trading courses of CAC 40	(1, 1,-1)	27.520418	0.0000000 cause
	Volumes of CAC40	(1, 1,-1)		0.00000000 cause

Table 13 : Test of unvaried causality of Geweke, Meese and Dent (1982) of « Puts »

From this table, we notice that the null hypothesis of absence of significativity of advanced values is rejected, for the different variables of « Puts » and for those of the spot market .The different variables of Puts cause according to Geweke , Meese and Dent (1982) the puts since the statistics of Fisher are significant. Hence , the anticipations of different components of « Put » seem to be efficient in the puts market .The spot markets seem to be significant . So, it is obvious to evoke the advanced causality relationship between the volumes of transactions and the adjusted courses of the index .These volumes seem to be an efficient sign of the variation of the adjusted courses of the index.

The existance of the advanced causalities relationship between the two markets permits to confirm that the advanced impact of the Calls in the spot market seems to be realistic and that the market of the Puts allows to explain the variations of the underlying markets .This validates to some extent, our hypothesis ,that assumes that the integration of the Puts is an efficient signal of the variation of courses in the spot market.

We retain based on the hypothesis that stipulates that the Puts constitue the privileged choices of uninformed investors and that their introduction permits them to ameliorate the efficiency of the spot markets, the existance of a causality relationship between the advanced variable of the number of batches (volume of transaction in Puts markets) and

these of the adjusted courses of the CAC40 index. This relationship that seems to be significant, shows that the volumes of Puts can be an efficient sign of the variation of courses of CAC40 .The impact of the Puts in the spot market comes from the accumulation of the variations of courses in the spot market where the significativity of the delayed values, the adjusted courses and the number of batches according to the test of Granger (1969) .

The findings of the test for the puts are the following :

Variables	Explicatives Variables	Lags	Fisher Statistiques	Significativity
Adjusted courses of CAC40	Maturity	(1, 1,-1)	18.4204875	0.0000002104 cause
	Number of batches	(1, 1,-1)	26.0214587	0.01000100 cause
	Trading courses	(1,1, -1)	27.0145879	0.0.0100000 cause
	Volumes of CAC40	(1,1, -1)	28.048751	0.000000 cause
Volume of CAC40 index	Maturity	(1, 1,-1)	29.0124587	0.000000000 cause
	Number of batches	(1, 1,-1)	33.021450	0.0000000 cause
	Adjusted courses	(1,1,-1)	29.8012457	0.0000000 cause
	Trading courses	(1, 1,-1)	26.041875	0.000000000 cause
Trading courses	Maturity	(1, 1,-1)	28.0214578	0.0000000 cause
	Number of batches	(1,1,-1)	0.01245879	0.99924875 Don't cause
	Adjusted courses of CAC40	(1,1,-1)	11.02145879	0.00125875 Don't causes
	Volumes of CAC40	(1,1,-1)	26.0245879	0.05478513 cause
Maturity	Trading courses	(1,1,-1)	24.0587946	0.000000000 cause
	Number of batches	(1, 1,-1)	25.98457845	0.0000000 cause
	Adjusted courses of CAC40	(1,1,-1)	29.4785421	0.000000000 cause
	Volumes of CAC40	(1,1,-1)	34.1245987	0.000000000 Cause
Number of batches	Trading courses	(1,1,-1)	35.4879542	0.000000000 cause
	Maturity	(1,1,-1)	6.0478954	0.07045879 cause
	Adjusted courses of CAC40	(1,1,-1)	23.6245789	0.0000000 cause
	Volumes of CAC40	(1,1,-1)	24.245789	0.000000000 cause

Table 14 : Test of univariéd causality of Geweke, Meese and Dent (1982) « Calls » :

The test finding validated the significativity between the different variables either in the market of Calls which is with the spot market or between the two markets and it shows that the advanced values of the « Calls » permit to explain the variables of the spot market. Hence, the anticipations of different components of « Calls » seems to be efficient in the spot market.

However, according to our assumption stipulating that the Puts and Calls constitute the privileged choices of the uninformed investors, and that in period of variations of courses, these products permit to establish the balance of the market. We retain the relationships of the advanced causality between the variable number of batches (representing the volume of transaction in the market of calls) and the adjusted variable course of the index. We notice the existence of a relationship of advanced causality according to Geweke, Meese and Dent (1982) that assumes that the number of batches can be an efficient sign of the variation of courses in the spot market. This variable permit to explain the variations of the underlying market. It is equally noted that the importance of Calls in the spot market comes from the accumulation of the variation of courses in the market where the joint significativity of the delayed values between the adjusted courses and the number of Batches of Calls according to Granger (1965) test. The anticipation in the french financial market are efficient especially for the « Calls » since the statistics of Fisher are significant. So, we accept a relationship of causality according to Geweke, Meese and Dent (1982) between the different components of « Calls » and these of the spot markets. We are especially interested in the relationship of causality between the adjusted courses of the CAC40 index and the volumes of transactions in the derivate markets and these of the spot markets in order to justify the importance of these products for the best functioning of the market and the concentration of these activities in the derivative markets.

Then, we use the ordinary least square technique (OLS) to identify the existence of relationship between the CAC40 index and the derivatives in the French financial market and this by taking into consideration their different components .

For this reason, we specify our model of reference that links the CAC40 index to different components of future contract and the Calls and Puts.

Our model of reference can be represented by the following linear equation :

$$LCAC40 = \alpha + \beta L(\text{Trading courses})_t + \delta L(\text{Maturity})_t + \gamma L(\text{Number of batches})_t + \lambda L(\text{Volume of CAC40}) + \varepsilon_t$$

Our model of base covers a period of study ranging from the first month of the year 2008 untill the end of the same year. So, the number of observations is equally to 240 observations. In this model, the endogenous variable is measured by the adjusted courses of the CAC40 index, the explanatory variables are : the maturity, the number of batches, the

trading courses and the volume of transaction of the CAC40 index. We notice in the paragraphe above that explanatory variables of our model of base are integreted of order zero, that is to say are stationary without a filtering effect. On the other hand, the endogenous variable contains a united root. In this model, we use the neperian logarithm to approach our Data. The estimation by (OLS) of the lineair relationships that describe the CAC40 index in function of components of future contract and the Calls and Puts presented in the two following tables above :

Variables	Coefficients	Standard deviation	T-statistique	Significativity
LVOLUME	-0.018510	0.006577	-2.814471	0.0053
LTRADINGCORSES	0.974046	0.016904	57.62219	0.0000
LMATURITY	-0.246203	0.135943	-1.811069	0.0714
LNUMOF BATCHES	0.001727	0.003430	0.503432	0.6151
C	-2.530979	1.058977	-2.390022	0.0176
R ² =0.954077, DW= 1.110306 F= 1220.575 (0.000000)				

Table 15 : Estimation of the relationship between the spot market and the future contract.

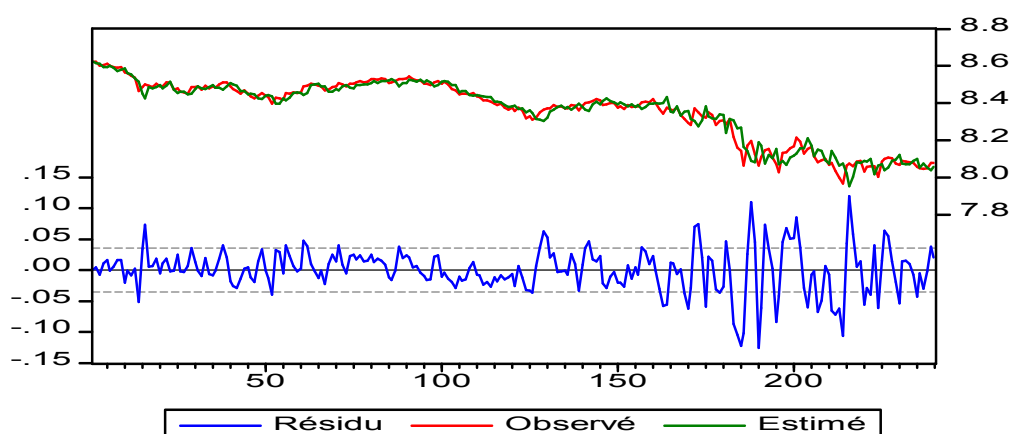
The estimation by the method of the ordinary least square (OLS), leads to expected and significant results in logarithmic term. We notice the existance of a positive and statistically significant relationship on the averge of risk of 1% between the trading courses of future contract and the courses of the CAC40 index. This relationship means that the developement of courses of future contract positively follows the development of the underling courses. There is a strong correlation between these two variables and consequently this trading courses has a strong predictive and significant effect will in the variability of prices of the underlying.

We equally notice the existance of a negative and statistically significant relationship between the maturity and adjusted courses of the CAC40 index. This seems to be obvious in parallel with the maturity, the price of the option converge to the spot price. The introduction of the future contract permits to reduce the volatility in the spot market, the arrival of the maturity of the future contract giving place to a regain of volaility .The findings equally bring out a negative and statistically significant relationship between the courses of the CAC40 index and the volume of activities in this spot market. Consequently, these latters are a decreasing function of the course variation of the CAC40 index. This negative relation indicates a slow of the activity of the spot market that can be explained by the will of speculators to reduce their exposition to different risks when the markets are unexpected. The periods of intensifications, turbulences and the depletion of liquidity in the spot market, seem to be associated to a slow of the activities of these latters. The introduction of the future contract in the CAC40 index seems to be response to a negative relationship that exists between the volume of transactions and the variability of trading courses of the CAC40 index. But, we notice in this level, the number of batches positively follows the

adjusted courses of the CAC40 index and that this relationship isn't significant in the average of risk 1%. The height of the volatility and consequently accompanied by the slight increase of the volume of future contract.

This findings enable us to deduce that during this period and following the variability of the index, the investors don't have confidence to future contracts, since the developement of the volume of activities following the variation of the index reamins trivial. However,we admit that the volumes of transactions registrated since the begining of the year 2008 in the future contract, were in recession in comparison with the preVIOUS years .This decrease is due to the year 2008 which was exceptional and during which the market following recession phase and the investors are in waiting and observing situation. All the people are conscious that nothing is regulated and that all the people remain suspicious.

The average effect of the ommitted variables is negative and significant, that is to say that the non explanatory variables have strong influences in the relationship between the adjusted courses of the CAC40 index and the different components of the future contract.The explanatory will of this model is very elevated, the coefficient of determination is elevated .So , there a good non linear adjustment in comparison with the average. Besides, there is a problem of autocorelation of order one, since the statistics of Durbin Watson is very low. As a matter of fact, the impact of chock of the future contract is very persistant in the CAC40 index. Our model is entirely significant because the statistsitics of Fisher is statistically significant on the average of risk 1%. We can represent the graphic of this relationship as follows :



Graphic 1 : Estimation of the relationship between the spot market and the future contrac by OLS :

With reference to this graphic, we notice the existance of shift between the estimated value of the CAC40 index in function of components of future contract of its observed value . So

,there is an increase in residuel term and in a bad specification of contract in function of the CAC40 index .

Our estimation gave unexpected significant results but the increase of residue detected through the autocorrelation of order 1(Durbin Watson) and the graphic below. Let's detect that the specification of the CAC40 index in function of future contract don't change the volatility in a remarkable way and that the asymmetry still in the market spot following the introduction of the future contract. We are equally interested in the estimation of the relationship that describes the adjusted courses of the CAC40 index in functions of volumes of transactions, of the maturity, of the number of batches and of the trading courses of Calls by the ordinary least squares (OLS). The findings are presented in the following table :

Variables	Coefficient	Std. Error	t-Statistic	Prob.
LVOLUME	-0.082008	0.024804	-3.306257	0.0011
Ltrading courses	-0.003952	0.006863	-0.575816	0.5653
Maturity	-2.112950	0.256127	-8.249617	0.0000
Lnumber of batches	0.020067	0.004857	4.131862	0.0001
C	22.93179	1.733014	13.23232	0.0000
R2=0.277654, DW= 0.522756, F= 22.58227 (0.000000)				

Table 16 : Estimation of the relationship between the spot markets and the Calls :

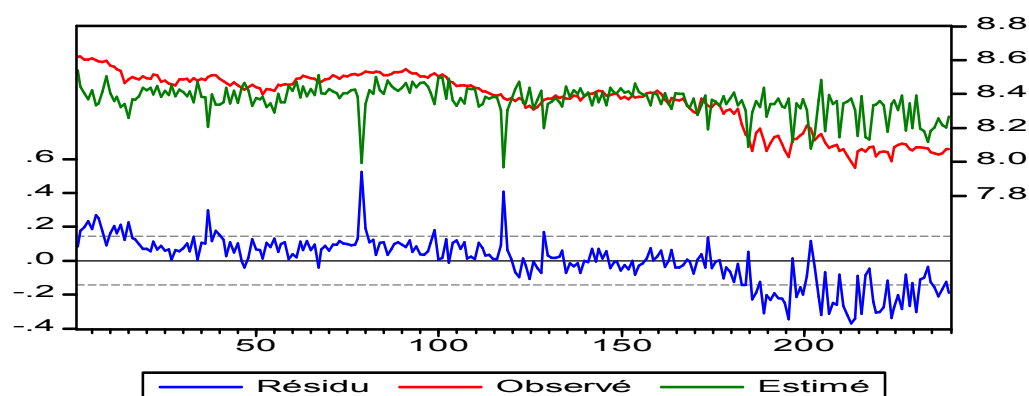
The estimation by the ordinary least square (OLS) technique, the relation ship between the spot market and the Calls, gives unexpected significant results except for the variable of trading courses. This latter with the volume of the transaction of the CAC40 index and the maturity exert negative effects on the adjusted courses of the CAC40 index. On the other hand, the number of batches is positively and significantly affect the CAC40 index. The introduction of the Calls, in the spot market brings about a negative and statistically significant relationship between the volume of transaction in the spot market and the courses of the CAC40 index, and a positive and a statistically significant relationship between the number of batches and the adjusted courses of the CAC40 index. This assumes that the investors and during this period prove preferences for the Calls. The introduction of this latter in period of variation of courses constitutes an advantage to prevent against the increase of courses.

Consequently, there is a concentration of activities in the Calls options. An intensification of activities in these latters, assumes that the speculators being covered against the eventuel increases of courses prove preferences to the calls. The activity in the market of « Calls », has a predictive and significant will in the variation of courses of

underlings. When the investors anticipate a huge and a quick increase of the underlings, the purchase of « calls » constitute for them an excellent strategy, noted that the maximum gain is realised with an option out of money. Our backgrounds present calls out of money since the underlying courses are inferior to exercise price. These calls are the most speculative. Their prices contain only the time value that is to say the time spent is an agent that plays against the investor where the options lose the value to measure that approach the date of maturity. The more the maturity approaches, the more the uncertainty diminishes and consequently the value time diminishes till it becomes negative because the maturity approaches, the uncertainty of the price of the option disappears, and subsequently the hope disappears too. That's why it is recommended to buy the option without waiting the maturity

There is equally a negative and statistically non significant relationship between the trading courses and the courses of the CAC40 index That permit to assume that the trading courses in the markets of « Calls » have only a weakness without having any predictive will in the variability of the underlying prices.

We remind that the more the options are out of money, the more the delta (the variation of options following the variation of its underlying) is low. This delta varies till the maturity moves towards 0 where the options that move towards a Delta 0 are sensitive to fluctuations of underlyings. This explain the negative and the statistically significant relation between the adjusted courses of CAC40, and the maturity. We can deduce that when the investors anticipate a sensitive and quick increase of the underlying, we choose « Calls » out of money with short duration where we must take into account of timing because we lose the time value daily. We can represent graphically this relation in the following figure



Graphic 2 : Estimation of the relationship between the spot market and the « Calls » by the OLS :

With reference to this graphic, we deduce the existence of a shift between the estimated value of the CAC40 index in function of components of « Calls » and its observed value. So, there is an increase of residual term and a bad specification of Call in CAC40 index.

Our estimation gave expected and significant findings but the increase of residue, detected from an order autocorrelation problem (Durbin Watson), and the graphic below. Let's deduce that the specification of the CAC40 index in function of « Calls » doesn't modify the volatility of a remarkable manner and the asymetry remains in the spot market following the introduction of Calls.

Finally, we estimate the relation between the CAC40 index in function of its volumes of transactions and different components of « Puts » by the ordinary least square (OLS) technique in order to detect the importance of these options during the variability of this index in the french stock market. This relationship of long term is presented in the following table above :

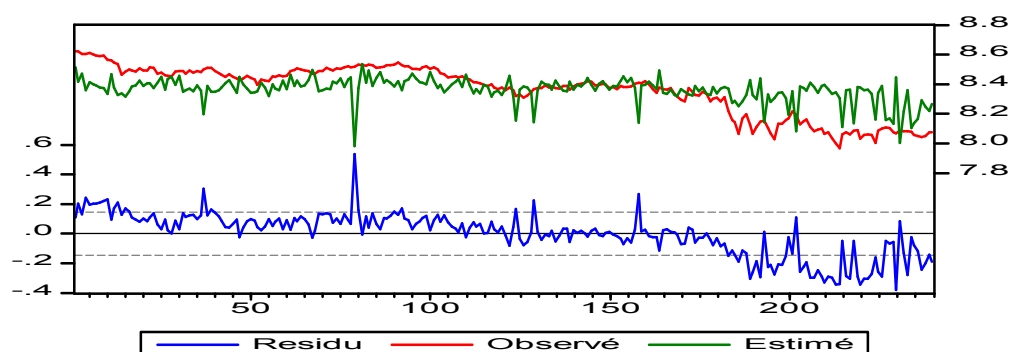
Variables	Coefficient	Std. Error	t-Statistic	Prob.
LVOLUME	-0.076279	0.025717	-2.966080	0.0033
LTrading courses	-0.003771	0.007199	-0.523853	0.6009
Maturity	-2.106219	0.274329	-7.677715	0.0000
Lnumber of batches	0.016314	0.004574	3.566780	0.0004
C	22.86800	1.856331	12.31892	0.0000
R2=0.250136, DW= 0.50124, F= 22.58227 (0.000000)				

Table 17 : Estimation of the relation of long term between the spot markets and the « Puts » :

With reference to this table, we can deduce that the estimation by the ordinary least square (OLS) methods gives discount and significant results except for the variable trading courses. The volumes of the CAC40 index, the trading courses and the maturity follow negatively and significantly the adjusted courses of the CAC40 index. On the other hand, the number of batches follow positively the adjusted courses of the index.

We notice the existence of a negatively and statistically significant relationship between the maturity and the adjusted courses of the CAC40 index, the previous reasoning for the « Calls » apply equally here. There is equally a negative and statistically non significant relationship between the trading courses of Puts and Calls of the CAC40 index. We remind you that the more the option are out of the money, the more the delta (the variation of the option following its underlying variation is slow. This delta varies till the maturity and moves consequently to zero, and here the option that moves to delta 0 are sensitive to fluctuations of underlyings and the use of puts following the volatility in the underlying market diminishes the trading courses in the market of Puts that let us to assume the course in the market of puts out of money have only a weakness in the variability of the underlying courses. The introduction of puts in the spot market brings about a negative and statistically significant relationship between the volume of the transaction in the spot market and the courses of the index, and a positive and statistically significant relation between the number of batches and the courses of the index. This assumes that the

investors prove preferences for the options of puts, and there is a concentration of activities in the market. The intensification of activities in this market, assume that the speculators aiming at covering against the eventual decrease of courses prove preferences for the options of puts when the investors anticipate a strong and quick decrease of the underlying, the purchase of puts constitutes them an excellent strategy known that maximum gain is realised with an option out of money and strong decrease of underlying courses . Despite the decrease tendency that characerised our study, we notice an increase of activities in the Puts option, this seems to confirm the proposal of Buffet that assumes and during this period that we are usually ready to exchange the most important volatility in our study in a short term in exchange of the most important gain in the long term. Buffet bet in the long term and assumed that for being a winner the sale of Puts. It is sufficient that in maturity the index develops in comparison with its initial level. Like any other strategy of Puts, Buffet is indirectly sales man of value time and the volatility, and even Buffet doesn't communicate about the sale done the bet doesn't seem to be in risk. The coefficeint of determenation is very low and the explained will of this model is very bad. Besides, there is a problem of auto correlation of order1. Our model is completely significant because the statistic of Fisher is generally significant on the verge of the risk of 1% .This relationship of long term between the market of option of sales and the spot market can be presented as the following form :



Graphic 3 : estimation of the relationship of the long term between the spot market and the Puts by OLS.

With reference to this graphic, we can notice that the residue is very elevated and there are also peacks of this residual term. We notice the existance of a shift between the estimated value of the CAC40 index in function of components of Calls and the observed values of these latters. So, there is an increase of residual term and a bad specification of Calls in the CAC40 index.

Our assumption gave expected and significant findings, but the increase of residue detected from a problem of auto correlation of order 1(Durbin Watson) and the graphic below let deduce that the specification of the CAC40 index in function of puts doesn't modify the volatility in a remarkable way and the asymmetry remains in the spot market following the introduction of Puts. We can deduce the importance occupied by the derivatives for better flexibility of prices of spot market and this through the links and the relations that exist

between the different variables. We notice through the links of causality that the derivatives are tightly linked to the spot market and that there is a strong link of causality between the variability of courses of underlyings and volumes of transactions in the spot market and in derivative market. So, we deduce that the volatility or the variations of courses of the cash index causes according to Granger 1969 the volume of the derivatives. We equally notice and through the relationship in long term that describes the adjusted courses of the index in function of variables of derivatives and the volume of transactions in the spot market and the coefficient of number of batches is positive and statistically significant for our products and especially the Puts and Calls where the volume of transaction in the spot market is very low. We observe that the volume of transaction in the spot market, negatively follow the variability of adjusted courses of the CAC40 index where the number of batches (volumes of transactions of calls and puts) follows positively this variability. Consequently, we can admit and when the courses vary in the spot market, the investors will be more tied to calls and puts. The elevated variability of courses incites the investors to cover their position with the derivatives. These investors privileged to speculate in the market of options that the underlying activities. The dominance of coverage operations in the spot market assume that the elevated volatility in the market incites the investors to cover their position by the derivatives. We equally deduce and by the estimation of the relationship in long term that exist between the adjusted courses of the CAC40 and the different components of future contract, and the calls and puts that the number of batches where the volume of transactions of the derivatives exert a crucial effect in the variability of courses of the index of the french stock market. This product also give a reliable information in the future volatility of the spot market and the effect of volumes of transactions of derivatives in the adjusted courses of CAC40 index is very important. This product leads to according to Geweke ,Meese and Dent(1982) the advanced explanation of the variability of the spot market by bringing relatively its stability they constitute an efficient signal of the variability of the spot market. These findings enable us to deduce that the elevated volatility incite the investors to cover their position by the derivatives and these products influence positively the variability of the spot market by bringing relatively stability for it. Consequently, they constitute an efficient signal of the variability of the spot market.

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Conclusion

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634 We are interested and after examining with details, the different components of the
635 derivatives markets, if these future contracts and the « Puts » and « Calls » to prove the
636 highest of the volatility of activities generate an incitation to the coverage against the risk by
637 the derivatives and consequently to an increase of volumes of transactions in the markets of
638 future contracts and these options .We examined the dynamic relation that exist between
639 the volatility of the underlying activities represented by the variability of the adjusted
640 courses of the CAC40 index , the volumes of transaction in the spot market ,and the volumes
641 of transaction of the derivative products presented by (the number of batches) ,we focused on
642 the existence of a bidirectional relation between these variables. We noticed from our
643 finding , a strong link of causality and the dependence between the two markets , and that
644 relation that exists between the volumes of transaction in the spot market and the adjusted
645 courses of the index is negative,whereas those that exists between the number of batches of
646 the derivatives and the courses of the index CAC40 is positive .As we noticed that the
647 variables of the courses of the index cause according to Granger (1969) the volumes of the
648 derivatives and that these later cause according to Geweke ,Meese and Dent (1982)the
649 advanced explanation of the variability of adjusted courses .

650 These finding permit us to observe a concentrations of activities in the derivatives that
651 courses from the accumulation of courses in the spot markets ,and that these volumes of

transaction of the derivative markets offer an informational content in the volatility of the underlying markets and that seems to be a response to a negative relation that exists between the volume of transaction and the variability of courses of the index. The intensification of transaction in the market of options assuming that the investors prove preferences to the options that offer more gains and security. Consequently, we conclude that the volatility incites the investors to cover their positions with the help of the derivate products, and these products positively offer the variability of the spot market by relatively bringing its stability, they constitute consequently an efficient signal of the variability of the spot market.

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