FORECASTS, ETHICS AND FINANCIAL BEHAVIOUR: ANOTHER READING OF ECONOMIC CRISES

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Abstract

The forecasts of economic agents are not without influence on financial markets' fluctuations. The recent subprime crisis has shown that incorrect use of information available on the markets added to the creation of complex financial instruments can have major consequences, not only in financial terms, but also on the real economy. Based on a study of three European countries, France, Germany and the UK, the goal of this paper is to assess how more ethical practices among economic agents can reduce the volatility of financial markets and stabilise the business cycles. This should lead to greater stability for European economies. After discussing the various possible forms that the forecasts of economic agents can take, we will study their correlation with business cycles. The final section will be dedicated to formulating various hypotheses and scenarios for explaining speculative cycles and how to control them with more ethical practices.

Keywords: Forecasts, expectations, cycles, financial markets, asset prices, ethical practices, economic stability

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Introduction

The forecasts of economic agents are not without influence on the fluctuations of the financial markets. The recent subprime crisis has shown that incorrect use of information available on the markets added to the creation of complex financial instruments can have major consequences, not only in financial terms, but also on the real economy. Based on a study of three European countries, France, Germany and the UK, the goal of this paper is to assess whether more ethical practices among economic agents would reduce the volatility of financial markets and stabilise business cycles. This should lead to greater stability for European economies. The choice of these countries is justified for two reasons: their different degrees of stock-market capitalisation and the relative importance of their financial markets in corporate financing. While British firms have always followed the tradition of using the financial market for their productive investments, the same does not apply for France and Germany. This will clearly influence our conclusions regarding the behaviour of economic agents as regards the business cycle and forecasts on the evolution of asset prices. After discussing the various possible forms that economic agents' expectations can take, we will study their correlation with business cycles. The final section will be dedicated to formulating various hypotheses and scenarios for explaining speculative cycles and how to control them with more ethical practices.

1. A lack of theoretic alternatives to the traditional assumption of rationality

Financial players' expectations are generally considered rational, despite the fact that strategic choices are made in an environment of incomplete information. However, when the expectations only relate to inflation, this hypothesis of rationality has very often been questioned. When studying inflation forecasts made by economists at the time (1947-1979) in the United States, J. Caskey (1985) remarked that the undervaluation of specialists are due to incorrect treatment of the information actually at their disposal. This is explained above all by the vision they held of the inflationist process: their expectations were proven to be incorrect, since their own analysis of the process was influenced. T. Urich and P. Wachtel (1984) furthermore demonstrated that there was nothing rational about inflation forecasts during the 1970s in the United States. Individual reactions, but also the joint reactions of financial players actually turned out to come from their experience.

According to D. Croushore (1993), expectations play a crucial role in the economy. And, since information management is not straightforward, basing strategic choices on prospective studies conducted by specialists should enable a reduction in the number of mistakes. His analysis of various prospective studies (mainly relating to inflation, real GDP, interest rates or business cycles) conducted in the United States in the period 1968-1993 led him

however to the conclusion that the hypothesis of rationality is not relevant. In fact, many biases can be found in these studies: when uncertainty has a greater influence on inflation, when the economy is on the way to enter a point of economic reversal, and because every specialist relies on a personal interpretation of the phenomena he/she is studying. For J. Jeong and G.S. Maddala (1996), it is therefore not possible to verify the hypothesis of rationality considering such measurement errors. Consequently, regardless of whether or not we use studies conducted by specialists, can we still consider expectations to be rational? And more importantly, is this really useful for analysis?

The rationality hypothesis, currently used in the literature, since the fundamental work of J.F. Muth and R.E. Lucas, responds to a need for simplification: thus characterised, decision-making processes are more easily integrated in theoretical and empirical models.

Therefore, according to C.F. Manski (2004), even if this hypothesis is plausible, it in itself does not specify the nature of the expectations made. It simply allows us to assume that individuals objectively make correct expectations, and do so conditionally to the information they hold. But economists do not have the option of extrapolating the nature of the underlying forecasts based on strategic data (investment, indebtedness and consumption choices, among others). To solve this problem, we can decide to infer the evaluation of expectations based on the maximising behaviour of the players in the financial and economic world. The latter draw up a certain number of probabilities based on this information they hold, thus maximising its utility. In this context, the observation of choices can depend on various types of preferences and thus of forecasts. However, according to C.F. Manski (2004), this bypasses the difficulty without solving it. The true nature of preferences, the creation as well as the nature of the forecasts underlying the choices of individuals are avoided. It is a mistake to base ourselves merely on the final choices made by the players; we need to work on measuring the probabilities they form. And these probabilities are subjective because they depend on the personal perceptions of the individuals: here he is referring to "revealed" preferences.

The so-called analysis of "revealed preferences" was introduced by P. Samuelson (1938, 1948). It was studied in depth by D. McFadden (1984): all decisions taken by individuals (mixed individuals taken from a random sample) depend on a choice made in a discrete space. When it comes to studying behaviour on the stock markets more specifically, it is inevitable to use the beauty contest comparison made by J.M. Keynes. Here also, investment decisions are based on individual perceptions of the value of financial assets, and not on their intrinsic value. Financial players take an interest in the forecasts made by other players in their presence, and their expectations become iterative. These forecasts rely on a set of financial conventions, and everyone imagines everyone else refers to them. To check the relevance of this hypothesis for the appreciation of asset prices, F. Allen, S. Morris and H. S. Shin (2006) assumed that the evaluation of these iterative expectations is based on an average of a set of past asset prices. This average is supposed to represent the general opinion. However, the presence of incomplete information considerably disrupts the analysis. Indeed, in such a context, the use of an average calculated on assets' expected returns does not work.

Here again, the authors illustrate to what extent investment decisions are unstable and, as J.M. Keynes already stressed, to what extent investor confidence is the keystone of the system. However, if it is not possible to verify the existence of mimetic behaviour (also called herd behaviour) in a situation with incomplete information, how can we understand the expectations of players?

The model put forward by F. Allen, S. Morris and H.S. Shin (2006) offers another interesting alternative. They initially prove the existence of a certain form of inertia[1] in asset prices, and then they note that the expectations of financial players are no longer based exclusively on the idea that they represent the general opinion. In actual fact, as J.M. Keynes had already stated, it seems that the players have passed to a considerably higher degree of abstraction. Thus, by not only taking into consideration the expectations of investors, the forecasts drawn from an average of past asset price values, bust also the forecasts of the public (the general opinion), the authors show that incomplete information precludes the formation of iterative expectations.

In such a situation, the abstraction degree[2] among financial players rises, and the true value of asset prices gradually loses importance. Here we find all the elements required for a speculative bubble. This leaves only experimental economics to help us better understand how individuals continue to make strategic choices in this very specific type of situation. The usefulness of this approach lies in studying the creation of forecasts within a controlled environment. This "control" is exerted above all on the quantity and the nature of the information made available to the individuals. It is possible in this case to determine how individual strategic decisions are made, or even the precise nature of a coordination when this takes place within a task force. The participants in a task force in fact tend to coordinate to make their decisions jointly. However, they are wrong at the end, and their strategic decisions are actually relatively similar. Another interesting result

1 This inertia relates to expectations made for a term of 1 to 12 months.

2 The authors speak of "the order of beliefs".

we can draw from this type of studies is that individuals tend to form very simple expectations[3]: naïve according to inflation and past expectations, adaptive according to a cost-benefit arbitration[4] or even auto-regressive. It is precisely the interaction between these various forms of forecasts and asset price levels that we will discuss using as our basis a sample of three European countries: France, Germany and the United Kingdom.

2. A reading of economic and financial crises based on asset prices and expectations

Under an uncertain environment, economic and financial players' expectations make investment decisions based on their forecasts of future profit. As seen previously, the highly financialised context in which they operate continues to have effects on the nature of their expectations. And yet, these forecasts today are at the very core of the crisis dynamic. The resulting strategic decisions actually drive a systematic escalation in the markets.

The study of business cycles in three large European countries (France, Germany and the United Kingdom) for the period 1999-2009 highlights the key role played not only by assets' prices appreciation, but also by the individual forecasts drawn up in relation to these asset prices.

While inflation continues to fulfil its role as an indicator of economic overheating, it is actually the speculative practices of economic players that lead long-term business fluctuations.

Using a database of real asset prices (adjusted for current inflation) supplied by the Bank for International Settlements[5] we have comprehended the evolution of long-term business cycles. The consideration of different types of forecasts, relating to asset prices as well as to inflation levels, constitutes a first method for illustrating the impact of speculative activities.

2.1 Dating the French, German and British cycles

After a preliminary work to extract long cycles[6], trough-to-trough dating was carried out using the Markov chain created by Artis & al (2003). This dating process delimits the raising and falling phases of the cycles. It is then easier to verify the impact the strategic decisions of players have on business fluctuations during every phase of the cycle.

3 See Hommes, Sonnemans, van de Velden and Tuinstra (2003).

4 Individuals update their past forecasts by giving different weighting to the potential costs and benefits drawn from a specific forecasting technique.

5 Database previously processed by S.V. Arthur, C. Borio and P. Lowe.

6 For more information on this subject, see Parnaudeau (2007), (2009). The long cycle in this case is a growth cycle, defined by GDP deviation from its long-term trend (obtained using a Hodrick-Prescott filter), deviation from which short-term disruptions (also obtained using a Hodrick- Prescott filter) will have previously been extracted. The data are expressed at a constant price, in millions of euros. Source: Eurostat.

Table 1. Long term Business Cycles Datation (1999 – 2009)

France			
Period covered	**Phases**		**Duration of the complete cycle**
2002 – 2008	Growth	Peak at 12.35 points of growth	**29 quarters**
2008 – 2009	Recession	Trough at -3.46 points	
Germany			
2003 – 2008	Growth	Peak at 10.07 points of growth	**24 quarters**
2008 – 2009	Recession	Trough at -6.82 points	
United Kingdom			
2002 – 2003	Growth	Peak at 17.86 points of growth	**10 quarters**
2004	Recession	Trough at –2.94 points	
2004 - 2006	Growth	Peak at 7.99 points	**12 quarters**
2006	Recession	Trough at -0.85 points	
2007 - 2008	Growth	Peak at 19.91 points	
2008 - 2009	No recession recorded (= *two consecutive quarters of negative growth*) Two single-quarter recessionary episodes, with –0.45 points in 2008 and –3.91 points in 2009.		

As can be seen in Table 1, for the period 1999-2009, one complete cycle can be identified in France, with a duration of 29 quarters. The German long cycle, relatively well synchronised, is slightly shorter, since it only lasts 24 quarters. In the case of the United Kingdom, it was difficult to apply the Markov chain[7].

The cycles thus dated cover 10 to 12 quarters and, in the absence of two consecutive quarters of negative growth, it is not possible to delimit with certainty the downward phase of the last cycle in 2009.

2.2 The impact of speculation activities on the cycles

To measure the impact speculation activities of agents have on the business cycles, it is possible to use an indicator that includes both a measurement of the monetary market rate, a measurement of the real interest rate, as well as a measurement of the appreciation (or depreciation) of real asset prices. Although this indicator has a considerable impact on long-term fluctuations such as those delimited in the previous section, the true role played by inflation and asset prices in cycle propagation is still up for discussion. These two variables actually depend directly on the strategic decisions made by economic agents. It is therefore essential to take expectations into account. The expected impetus for the European business cycles used in this project is as follows[8]:

$$I_t = (i_t - r_t) + a_t \quad \textbf{(1)}$$

Where *i* is the money market rate; *r* is the real interest rate; *a* the growth rate of real asset prices.

European business cycles, on the other hand, are characterised by the following expression:

$$C_t = \alpha C_{t-1} + \beta I_t + \varepsilon_t \quad \textbf{(2)}$$

Where C_t is the growth cycle defined by the GDP deviation from its long-term trend, corrected for short-term disruptions; ε_t is an error term.

Adding speculation to this expression leads to the following:

$$C_t = \alpha C_{t-1} + \beta_z I_{at} + \varepsilon_t \quad \textbf{(3)}$$

When expectations are naive:

$$C_t = \alpha C_{t-1} + \beta_z [\pi_{t-1} + a_{t-1}] + \varepsilon_t \quad (3.1)$$

When expectations are self-fulfilling:

$$C_t = \alpha C_{t-1} + \beta_z [\pi_t + a_t] + \varepsilon_t \quad (3.2)$$

Where I_{at} is the impetus including inflation expectations and expectations on the price of real assets; π_t is inflation in t; *z=1.2*.

7 Given that the chain was designed to study growth cycles in Eurozone countries, this result is not hardly surprising. The British long cycle has a much more unstable behaviour: the euro protects Germany and France from excessive business fluctuations, which is not the case with the United Kingdom. Its short duration should legitimately allow more room for speculative behaviour, which is precisely the subject of the following discussion.

8 Artus (2006) used a similar expression. For European data, see Parnaudeau (2009). The nominal interest rate is 3 month money market rate. Source: Eurostat.

Table 2. GMM Estimations – [1999 – 2009]

France	$C_t = \alpha C_{t-1} + \beta_z[\pi_{t-1} + a_{t-1}] + \varepsilon_t$ **(3.1)**					
Number of instruments	α	β_1	β_2	R^{2c}	**DW**	**Granger Causality (1 delay)**
6	s	Ns	ns	0.9927	1.55	$I_{at} \Leftrightarrow C_t$
4	s	$\beta_1 = 0$	ns	0.9936	1.74	*Non-significant results*
$C_t = \alpha C_{t-1} + \beta_z[\pi_t + a_t] + \varepsilon_t$ **(3.2)**						
6	s	S	s	0.9909	1.47	$I_{at} \Leftrightarrow C_t$
4	s	$\beta_1 = 0$	s	0.9884	1.13	I_{at} **causes** C_t
Germany	$C_t = \alpha C_{t-1} + \beta_z[\pi_{t-1} + a_{t-1}] + \varepsilon_t$ **(3.1)**					
Number of instruments	α	β_1	β_2	R^{2c}	**DW**	**Granger Causality (1 delay)**
6	s	S	s	0.9769	1.35	$I_{at} \Leftrightarrow C_t$
4	s	$\beta_1 = 0$	ns	0.9740	1.17	*Non-significant results*
$C_t = \alpha C_{t-1} + \beta_z[\pi_t + a_t] + \varepsilon_t$ **(3.2)**						
6	s	Ns	ns	0.9744	1.11	$I_{at} \Leftrightarrow C_t$
4	s	$\beta_1 = 0$	s	0.9690	0.92	I_{at} **causes** C_t
United Kingdom	$C_t = \alpha C_{t-1} + \beta_z[\pi_{t-1} + a_{t-1}] + \varepsilon_t$ **(3.1)**					
Number of instruments	α	β_1	β_2	R^{2c}	**DW**	**Granger Causality (1 delay)**
6	s	S	s at 11%	0.9126	1.28	$I_{at} \Leftrightarrow C_t$
4	s	$\beta_1 = 0$	ns	0.9618	1.15	C_t **causes** I_{at}
$C_t = \alpha C_{t-1} + \beta_z[\pi_t + a_t] + \varepsilon_t$ **(3.2)**						
6	s	S	s	0.9225	1.90	$I_{at} \Leftrightarrow C_t$
4	s	$\beta_1 = 0$	s	0.9631	1.43	C_t **causes** I_{at}

The tests performed (table 2) aim to verify the suitability of models 3.1 and 3.2 for characterising long-term business fluctuations in France, Germany and the United Kingdom, when speculation on inflation and real asset prices is either naive or self-fulfilling. Estimates seem to indicate, apart from the British case[9], that the hypothesis of self-fulfilling expectations is preferable. Furthermore, inflation in this period actually plays its role as an indicator of economic overheating: removing it (by adding $\beta_1 = 0$) from the estimates does not improve the results. A similar study, conducted on a period prior to the subprime crisis[10] did not allow the usefulness of inflation in the expansion of business cycles to be verified. As can be seen through Granger causality tests, here is where the latter is of most importance.

Expected inflation, like all forecasts of asset prices, is not only useful for characterising long-term business cycles in France and Germany: these two variables also constitute a key causal impetus for the cycle in these countries. In the United Kingdom, this result needs to be put into perspective. Indeed, if inflation and asset prices continue to provide a role of explaining the cycle, causality is inverted. In this country, the long cycle seems to dictate speculative activities. Overall, we can state that purely speculative practices, leading to forecasts that become self-fulfilling, are the basis for the long cycle measured in the period 99-09. In other words, these practices are an essential factor in explaining the subprime crisis. However, in the United Kingdom, this situation is not quite true. As seen in the dating processes above, the British cycle is much shorter and, for this reason, it seems to dictate greater speculation (the cycle causes the forecasts, even when the cycle is properly explained by the latter in models 31 and 32). Our final challenge is to interpret this result and to appreciate in the long term whether the introduction of ethical criteria would change the naive or self-fulfilling nature of the expectations and lead to greater stability in the financial markets. This

9 The two types of forecasts can work, although self-fulfilling forecasts yield better results.
10 Parnaudeau (2009)

is the discussion we are presenting in the following section.

3. Does the introduction of ethical factors lead to a new analysis of forecasts, economic and financial crises?

Thus far, the basic hypothesis is that information is imperfect, with the following main consequence: information acquisition deadlines and costs are greater than zero. On the financial markets, operators do not necessarily have all the same information at the same time and will create forecasts regarding the evolution of economic essentials. Since there is no absolute rationality, markets are not efficient. However, as stressed by P. A. Samuelson (1994), if there is efficiency, it can only be *micro-efficiency*. Interdependency and interactions are such on a global level that *macro-efficiency* is not possible in the markets. Moreover, the Grossman paradox shows that if there is efficiency of information, this should logically save the operators from having to search for the relevant information, thereby preventing the market from being efficient. A dilemma therefore exists between microeconomic efficiency and macroeconomic stability. Is there any way to make these two notions compatible by introducing criteria of ethical behaviour for economic agents?

The results obtained show that the expectations of economic agents are not without influence on the evolution of the long cycle, with certain nuances for the British case, in which speculative practices overcome the logics of long-term investment. What are the factors behind these economic attitudes? As Keynes mentioned in his Treatise on money, agents are more inclined to adopt short-term positions than long-term positions: they give priority to the search for immediate profit over guaranteeing a stable level of profitability in the long term. If we refer to this type of argument to make long-term projections of the future outcome of the current crisis in view of our results, we will definitely be forced to note that new risky practices are to be feared. Contrary to the assertions of certain financial experts, the evolution of the crisis will not be limited to a V, but instead would be better described as a W (which is not the simple result of a mechanical effect), with European economies only having passed the first part of the contour, namely the V. It remains to be known whether the second part can be avoided by imposing ethical practices on our economic agents. This is the issue we will now discuss in relation to our statistical observations.

Although it is difficult to measure this type of behaviour and to consider it when creating individual expectations, the various public interventions are marked by a desire to increase the morality of financial logics. The problem, however, resides in the fact that these remedies always come a posteriori, contributing to reinforce the trend due to their pro-cyclic nature. The question here is to rationalise a priori with a view to showing that a more ethical attitude can lead to more favourable outcomes, contrary to that defended in the Keynesian position regarding animal spirits[11]. To do so, the capitalist system must redefine the limits of its competencies. In recent years, financial matters have prevailed over the real economy, leading to the recessionary episodes mentioned above. Short-term strategies took precedence over long-term investments. While demands for greater transparency and protection are invariant in every crisis, it is a safe bet that they only last for the turbulent period. Once calm returns, the forecasts of agents follow the rising trend and contribute to the creation of a new business cycle. The problem, and the main point of this paper, is that these cycles are increasingly short and crises are increasingly frequent, not to mention the fact that they are also increasingly severe. It is true that our European economies benefit from effective mechanisms for restoring the upset balance. However, the most recent crisis has shown how fragile these mechanisms actually are: the joint intervention of Europe and the USA was required to avoid the failure of the banking system and global financial panic. The importance of the self-fulfilling forecasts and speculative practices that caused the subprime crisis should become warning signals for our governments, ushering in a new age for capitalism. While the concept of profit should not be up for discussion, its use is rather more troublesome. In such a context, the transformation of forecasts and the behaviour of economic agents should be the result of a collective will rather than an external intervention involving regulation or the imposition of new rules on the financial markets. It will only be measurable a posteriori by considering, for example, longer, more stable real cycles for our European economies.

Conclusion

It has been proven that the economic forecasting among agents can result in instability phenomena and contribute greatly to shortening the business cycle. The complexity and suddenness of the most recent crisis have also led us to wonder not only about how to resolve it, but also about how to prevent such events in the future. It has been shown for a long time that it is impossible to control bias in expectations and their consequences: the existence of speculative bubbles. The goal is therefore to promote more efficient market operation, contributing to greater transparency and facilitating the transmission of

11 [Our decisions] to do something positive…can only be taken as a result of animal spirits…and not as the outcome of a weighted average of quantitative benefits multiplied by quantitative probabilities'.
John Maynard Keynes, A General Theory of Employment, Interest and money, 131, (1936)

information among the various operators. However, beyond this statement, we need to take one step further, changing individual practices and including them in a more collective approach aimed at achieving greater permanence of the real economy. The most recent crisis has drawn our attention to two points. While our developed economies have proven their ability to withstand financial crashes, they have also been restricted to assuming the limits of these crashes: individual action is pointless unless it is part of a more global process. The second point is that an imbalance in a partner country, even if it is smaller than us, can have considerable effects on countries considered to be more developed (e.g. Eastern European countries and the lingering difficulties of countries such as the United Kingdom). Ethical practices must therefore overcome 'fashionable' phenomena and become new economic realities.

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