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Animal Spirits, Confidence and Monetary Policy ♠

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1 Introduction

Since 2001 Fed's policy has been aiming at supporting output growth and price stability. It has been implementing an accommodative policy whenever prices tended to fall too much like in 2003, and it removed accommodation when prices tended to rise. The Fed has conducted monetary policy privileging the action on the short run federal fund as a policy instrument. As a result, in a context of recession and deflation, short run interest rates dropped from 6% to 1% between 2000 and mid-2004 but, after several years of decrease, a tightening in monetary policy was decided in June 2004. Because of an increase in inflation in 2004, rates would raise from 1% to 3% in 2004 in order to curb inflationary pressures. Beyond technical aspects of policymaking, the way Fed has been addressing to markets is of primary interest. It largely communicates its strategy to markets and it prefers gradualism in interest rate adjustment in order to manage economy's expectations. Nevertheless, the door is left open to incremental changes in stabilization plans in the case indicators like the current values of profits, labor productivity or the rate of capacity utilization capsize. Fed's objective is to be able to judge the impact of its intervention "in real time" instead of being constrained to make that judgement in advance. As a consequence, monetary policy is defined in a flexible way, that avoids monetary surprises.

At the same time, the young and independent ECB whose mission has been stated in few lines in the art.105b of the Maastricht Treatise has rapidly announced a two pillars policy, based on the strict achievement of a target estimated at 2% inflation incremented by a quantitative control. To the majority of commentators, the ECB has acted in the direct line of the very orthodox Bundesbank whose aversion for inflation was widely acknowledged. On the analytical ground, the ECB's action has been supported by many contributions that aim at showing that independence and commitment are key factors of a Central Bank success. Committed to maintain the target inflation below 2% and the M3 growth under a maximum of 4.5%, ECB lost almost all its degrees of freedom in conducting monetary policy. Quite immediately, the intermediate target of 4.5% of M3 progression had proven to be irrelevant and totally uncorrelated, even with a lag, with the subsequent level of inflation. Abandoning this secondary reference, ECB gained flexibility in its contra cyclical initiatives. The other reference has however been maintained, without any consideration of real performances of the European economies. This attitude was undoubtedly linked with an implicit adhesion of ECB economists to the validity of the Lucas-Kydland and Prescott propositions: in a world of forward-looking rational agents, no long term gain can be expected from current inflation and time inconsistent monetary policies.

Paradoxically enough, the Banks that benefited in the last decades from the highest credibility, for instance the Bundesbank or the Federal Reserve Bank were neither the ones which had adopted a transparent behaviour; nor the ones which never deviated from their commitments. On the contrary, it seemed that both Banks succeeded in adopting a pragmatic approach of monetary policy, therefore addressing the credibility pattern. One may think that it cannot last long if agents perceive that the constraints surrounding policy making are too strong and will ultimately induce the Bank to deviate. This kind of "rational pragmatism" could be considered in a more general perspective when the different ways of learning between the Bank and agents are considered. One may indeed presume that the more the Bank has succeeded in managing a fair trade-off between inflation and growth, the more it will generate confidence in its ongoing capacity to maintain inflation at a level compatible with growth.

Rationalizing this conjecture supposes few hypotheses. First, it is necessary to define the transmission channels of such persuasive influence from the Bank to agents. Then, the rational objective of the Bank has to be delineated. Our specific point in that paper is that such an objective has to be developed in a world where agents are heterogeneous. We characterise those agents supposing that they do not benefit from a complete information set neither about their environment nor about monetary policy efficiency. Information is generated by time interactions between the Bank and the agents. We consider that they can reveal their preferences concerning the rate of inflation, learn from the previous actions of the Bank, and make expectations on its future ones.

In the model we present in *section 2*, we propose both a simplified presentation of the transmission channels of the agents' learning process from the Bank to agents, and of the style of monetary policy the Bank is able to implement. Agents react according to the tangible fundamentals (related to real and financial development of the economy and to the distribution of wealth) and the intangible ones (related to the beliefs, expectations and preferences of agents concerning inflation and growth) of the economy. The transmission channel integrates two main elements: the differentiated inflation-expectations of agents and their heterogeneous inflation-aversion (or preference); both components of heterogeneity could be iterated and transformed according the nominal performances of the Bank and the observed real sacrifice. Monetary policy would consist in exploiting one of the possible trade-offs between inflation

and growth that are induced by both sources of heterogeneity. The trade-off can be of a *Lucasian* style: in this case, the Bank through its actions has to convince agents that there exists an inverse relation between inflation and growth. Another trade-off may be seen as a renewed *Phillips'* style: in this case, agents consider that, even in a world where time-inconsistencies are not costless, an adequate level of inflation does not preclude growth. In our model, these two kinds of trade-offs and the related monetary policies they suppose, are not limited by a typical form of agents' rationality but rather more by differences on tangible fundamentals or intangible ones. Usually, the Phillips' style trade-off is the result of a world where agents are not so rational, financial markets not so developed, governments not so interested in re-election. The Lucasian would be associated to a world integrating the opposite specifications. This paper aims at challenging this partition among, from one hand, a non-rational Keynesian world and, from another hand a fully rational Lucasian approaches. In our approach, monetary policy design is built on the confidence generated by the past performances of Central Bank as it concerns the pair growth/inflation on the future behaviours and actions of agents. *Section 3* provides and comments some results of the model obtained from a first set of numerical simulations.

2. The model

We present a simplified closed economy where the Government delegates monetary policy to an independent Central Bank. The mandate of the Central Banker is submitted to periodic control and its revocability acts for him as an incentive to do his best to reach the delegated objective. Agents are heterogeneous and react to the actions of Central Bank in consuming, producing and investing, according their expected levels or inflation and output.

2.1. The Central Bank and the Supranational Political Authority

The supranational authority is defined as the product of a democratic delegation. Its objective is characterized by a function reflecting the preference of the nation as a whole concerning the relative importance of the stabilization of nominal magnitudes related to the trend (or stabilization) of real output. The supranational authority delegates monetary policy to the Council of Governors of an independent Central Bank which operates without intermediate control during two periods. At the end of the second period, the Council is renewed or not, according to its observed realizations during the two years of exercise, *i.e.* its capacity to cope with the public preferences relative to macroeconomic performances.

The content of the explicit mandate of the Central Bank can bear different forms. One of the components of the mandate is to control inflation. The other component is expressed in real terms. It consists in promoting growth or in stabilizing output. Those two objectives can be combined in different ways. The instrumental variable of action is not specified, but the short term interest rate is the most natural (but implicit) candidate. The effect of this instrumental variable is supposed being twofold. It has a short run direct effect both on the prices and output. This direct effect does not pass trough changes of agents' behaviors and beliefs. The long run indirect effect depends on the changes in expectations and animal spirits and has an initial impact on output, then on prices. We could identify two relevant cases. In the first case, in which we will limit here, the Bank considers that there is a way to boost growth by an adequate combination of monetary policy measures coping with Agents actions and reactions. In the second case, the option integrates the standard results of the NEC relative to the potential growth while the first is related to a more Keynesian world of structural under-employment, where the "natural rate of output" is more the result of a convention that of the existence of short-term limited capacities.

During the two periods, the sequence of the Central Bank's decisions can be described as follows:

i) in the beginning of period 0, it chooses its effective level of conservatism noted by α, *i.e.* the weight of nominal stabilization (*versus* real one) inside its lost function; it chooses simultaneously to communicate its official (effective or not) rate of conservatism. In this simplified form of the model, we neutralise the decision by supposing that the Bank announces and applies the weight of conservatism of the Political Authority and of Agents[1],

[1] See Dal-Pont, Torre, Tosi, 2005 for a different assumption in a case of an ambiguous announce of the Central Bank.

ii) then, still during period 0, the Bank chooses an inflation target for the period 0, given the current state of confidence (expectations, behaviors and actions of agents),

iii) during period 1, the Bank observes the new state of confidence as resulting both from the influence of the initial level of confidence of Agents, of its own previous actions and interactions with agents behaviors, and of the demand and transmission shocks occurred since its previous decision: the Bank then chooses a new inflation target.

We express inflation π_i and output y_i as indexes in normalized values around the "normal "references"[2]. The objective from which the Bank extracts its targeted levels of inflation for period 0 and period 1 is respectively given by expression (1)[3] for the first case and by expression (2)[4] in the second case

(π_0^*, π_1^*) maximises $\quad L_b = \frac{1}{2}\left[(y_0 + y_1) - \alpha\left(\pi_0^{\,2} + \pi_1^{\,2}\right)\right]$ (1)

(π_0^*, π_1^*) minimises $\quad L_b = \frac{1}{2}\left[\left(y_1^{\,2} + y_2^{\,2}\right) + \alpha\left(\pi_1^{\,2} + \pi_2^{\,2}\right)\right]$ (2)

The monetary policy is supposed incurring a real cost. This cost depends on the domestic transmission channels, on the technical choices available to the Bank in order to contain nominal values or accommodate economic activity. This real cost $y_i^{s*}, (i = 1, 2)$ is inside the period the result of a relation between planned inflation and the "sacrifice" in terms of output. This relation is given by (3):

$$y_i^{s*} = \gamma \pi_i^*, \quad i = 1, 2 \tag{3}$$

Effective inflation differs from the planned one by the amount of an additive shock on the financial transmission channels. This shock takes the form of a white noise $\varepsilon_i, (i = 1, 2)$, in such a way that the effective level of inflation π_i is equal to the planned one incremented by the amount of the noise:

$$\pi_i = \pi_i^* + \varepsilon_i, \quad i = 1, 2 \tag{4}$$

Last, the effective output sacrifice y_i^s also integrates the effect of the shock on transmission channels:

$$y_i^s = \gamma \pi_i^* + \gamma \varepsilon_i \quad i = 1, 2 \tag{5}$$

2.2. Agents

Agents are indistinctly consumers and firms. They consume, invest or produce for selling, according their prevision on the level of activity (or the level of effective demand) and the level of prices. The origin of their heterogeneity lies for one hand in objective components as their age, profession, their position in the economic circuit (creditor or debtor) and their level of wealth. It relies from another hand on other more subjective and semi-rational attributes. Those elements may be gathered under the label of "animal spirits". As a consequence of these distinctions and as far as monetary policy is concerned, agents split in each period in two groups according to two criteria:

[2] For calibrating the subsequent numerical experiments and without loss of generality, we choose to normalize the variables between -1 and 1. This normalization amounts to substitute to $x, (x \in \quad)$, a variable $y = \tanh x,\ y \in]-1, 1[$.

[3] This case could be considered as a stylised gain function representative of the reference of the Fed.

[4] This case could be considered as a stylised gain function representative of the reference of the ECB.

- The first discriminating criterion is related to the proportions of Over-Inflationists and Under-Inflationists within the whole population. Let m_0 and $m_1(\pi_0)$ be the respective proportions of Over-Inflationists at time $t = 0$ and $t = 1$, *i.e.* the proportions of Agents expecting for the related period a rate of inflation smaller than the publicly targeted rate 0. From period 0 to period 1, the proportion of Over-Inflationists varies according the difference between the observed rate of inflation at period 0 and the normal one.

Let $m_0 = \overline{m}_0$; then,

$$m_1 = \overline{m}_0 + m(\pi_0) \tag{6}$$

with $m_1'(\pi_0) > 0$, $m(0) = 0$, $\lim_{\pi_0 \to +1} m(\cdot) = 1 - \overline{m}_0$, $\lim_{\pi_0 \to -1} m(\cdot) = -\overline{m}_0$.

- The second discriminating criterion is related to individual and collective behaviours with respect to inflation. Agents are inflation-averse if they consider that the recessionary effects of inflation (on portfolio returns, on indexation, on future taxes…) overcome its stimulating effects on economic activity (reducing the cost of credit, generating additional private expenses and public receipts). They are inflation-lovers in the opposite case. Let $k_0 = \overline{k}_0$ and $k_1 = (k_0, y_0, \pi_0)$ be the respective proportions of inflation-averse agents in period 0 and 1. From period 0 to period 1, the change in the proportion of inflation-averse agents depends on the observed levels of inflation and of output. Agents are more numerous to infer that there is a negative trade-off between output (and employment) and inflation when inflation is at a high level and output at a low one, or when inflation at a low level and output at a high one, while they are more numerous to infer that there is a positive trade-off between output (and employment) and inflation when output and inflation are together high or low. In other words, there is an increasing number of agents who consider that the Phillips curve is decreasing when current observations related to nominal and real magnitudes are consistent with such a downward slope and they are more to believe that this curve has a positive slope when current observations are consistent with such an "inversion" of the Phillips curve. In formal terms, $k_1 = (k_0, y_0, \pi_0)$ expresses as follows:

$$k_1 = k_0 + f(y_0, \pi_0) \tag{7}$$

with, $f(0, \pi_0) = f(y_0, 0) = -k_0$, $\lim_{\substack{y_0 \to -1, \\ \pi_0 \to -1}} f(y_0, \pi_0) = \lim_{\substack{y_0 \to +1, \\ \pi_0 \to +1}} f(y_0, \pi_0) = -k_0$,

$\lim_{\substack{y_0 \to -1, \\ \pi_0 \to +1}} f(y_0, \pi_0) = \lim_{\substack{y_0 \to +1, \\ \pi_0 \to -1}} f(y_0, \pi_0) = 1 - k_0$ and $f(0,0) = f(0, \pi_0) = f(y_0, 0) = 0$.

Inflation-averse agents generate an excess of output when they are under-inflationist and inflation-lovers do the same when they are over-inflationist. These two sub-populations constitute the bullish share of the whole population. The complement constitutes the bearish sub-population and generates an output deficit. If we suppose that the global effect is proportionate to the size of the bullish and bearish sub-populations incremented by a demand shock u_i [5], the autonomous short term output will be given by

$$y_i^a = \delta\left[(k_i + m_i - 2m_i k_i) - (1 - k_i - m_i + 2m_i k_i) + u_i\right] = \delta\left[2(k_i + m_i - 2m_i k_i) - 1 + u_i\right] \tag{8}$$

at time *i,* where $\delta, \delta \geq 0$ is an index related to the size of the individual impulse (higher is δ , larger is the effect of positive or negative autonomous impulses on output) (see figure 1).

[5] This shock is assimilated to a white noise such that $E(u_i) = 0,$ and $-1 \leq u^{\inf} \leq u_i \leq u^{\sup} \leq 1$.

table 1: bulls and bears

	Over-inflationist agents m_i	Under-inflationist agents $1-m_i$
Inflation-avers k_i	$m_i k_i$	$(1-m_i)k_i$
Inflation-lovers $1-k_i$	$m_i(1-k_i)$	$(1-m_i)(1-k_i)$

bullish proportion of agents $k_i + m_i - 2m_i k_i$

bearish proportion of agents $(1-k_i-m_i)+2m_i k_i$

The short term real output y_i of period *i* is given by (9) which is the resulting amount of the autonomous output (8) and of the sacrifice (5):

$$y_i = \delta\left[2\left(k_i + m_i - 2m_i k_i\right) - 1 + u_i\right] + \gamma\pi_i{}^* + \gamma\varepsilon_i \qquad (9)$$

2.3. The sequence of events

The sequence of events is the following:

Period 0

1. At the beginning of period 0, agents' deterministic impulse on output results from the proportion of bulls and bears (in relation with inflationary expectations and the proportion of inflation-averse); simultaneously the stochastic demand shock applies.
2. Central bank observes this autonomous output and determines the planned rate of inflation and the planned sacrifice resulting from the monetary policy
3. Shocks on transmission channels occur and complete the determination of inflation and real output

Period 1

1. Given output and inflation of period 0, agents revise their expectations on inflation and behaviors. The proportion of bulls and bears varies.
2. Agents' deterministic impulse on output is determined and completed by a stochastic demand shock
3. Central bank observes the autonomous output and determines the planned rate of inflation and the planned sacrifice resulting from the monetary policy
4. Shocks on transmission channels occur and complete the determination of inflation and real output

2.4. The analytical solution of the model

During the two periods, the completely (but imperfectly) informed Central Bank interacts with incompletely (and imperfectly) informed agents. Agents have the first move at the period 0, step 1. Observing their first action at the period 0, step 2 and given (9), the Bank can infer in expected values (given the future shocks on demand u_1 and the present and future shocks on transmission channels ε_0 and ε_1) the present output y_0 resulting from its current targeted inflation $\pi_0{}^*$. Given $\pi_0{}^*$ and y_0, applying (6), (7), (8) and again (9) in expected values, the Bank can also infer, still

in expected values, the autonomous output of the period 1, the future targeted level of inflation π_1* and the future output y_1. Considering these expected sequences, the Bank determines its targeted current rate π_0* by a backward induction process in the following way. First, the future optimal planned rate of inflation π_1* is determined together with the expected output sacrifice of period 1 y_1^s*. Then, these values are re-injected in the gain function (1) which, after the substitution of the real components of periods 0 and 1 using (6), (7), (8), (9) and (5) in expected values, gives π_0* and the expected value of y_1^a.

The analytical properties of the model depend on the form of functions $f(\cdot,\cdot)$ and $m(\cdot)$. When these functions are always defined, continuous and derivable, the existence of an analytical solution is established, except for some singular values of the parameters. The general form of the analytical solutions is however too complex to discuss the different influences exerted by the main operating mechanisms (expectations, inflation-aversion, size of autonomous impact, degree of conservatism, output sacrifice, shocks). Therefore, we have chosen to specify simple forms of functions $f(\cdot,\cdot)$ and $m(\cdot)$. With the help of numerical experiments, we are able to exhibit different strategies the Central Bank can use to reach its mix objective to control inflation and to promote growth.

3. Illustrative patterns of monetary policy.

The reduced form of the model has been analyzed by the use of specifications of functions $f(y_i,\pi_i)$ and $m(\pi_i)$. The expressions $f(\pi_i,y_i)=\left(\frac{1}{2}-k_i\right)\left[(\pi_i)^2(y_i)^2\right]^{\frac{1}{2}}-\frac{1}{2}\pi_i y_i$ and $m(\pi_i)=\frac{1}{2}(\pi_i)$ have been selected. The parameters have been calibrated in adequate ranges of variations, except for the initial inflationary expectations that are always supposed initially equal to 0,5[6]. Inflation and output have been normalized and expressed between -1 and 1. Numerical experiments have been applied to this specification of the analytical model. We have solved the model as indicated in section 2.4. We have verified the existence, uniqueness and continuity of the solutions. The inflation and output we found as solutions of the simulations are expected magnitudes that express more the planned strategies of the Central Bank than the effective magnitudes affected by demand and transmission shocks. At this early stage of our analysis, we have chosen to present representative patterns of monetary policy, associated with different values of the tangible and non tangible fundamentals. Since only the function of gain (1) has been considered, the optimal levels of inflation and output selected by the Bank are generally above the norms. The optimal path of the economy differs however with respect to the level of conservatism of the Bank, the output sacrifice of an anti-inflationary policy, the initial inflation aversion of agents and their inflationary expectations.

Five relevant monetary policy strategies have been pointed out. Strategies I and II are of the Lucas's style. Strategies III and IV are of the Phillips style. Strategy V is a sort of inverse Phillips style.

	α	γ	u_0	δ	k	m	π	y	$L(\cdot)$
t_0	21	32/101	-28/51	47/2001	3/34	0.5	0.00800402	-0.0103596	-0.00260077
t_1					0.0883109	0.504002	0.00754361	0.0076984	

Table 1: Lucasian sequence I

[6] This limitation has been introduced for technical reasons (it allows to choose a linear specification of m_t under the form $m_t = 0.5(1+\pi_0)$ and corresponds to an initial neutrality of the agents expectations). We plan to generalize in future and more general experiments.

In the case of strategy I (table 1), inflation slightly decreases from period 0 to period 1 while output more significantly increases. In period 0, negative shock occurs. This shock generates a current output above the norm. The bank reacts choosing a level of inflation above the norm which, given the substantial sacrifice ratio (γ=32/101), limits the output loss at period 0. Agents change their inflation expectations and increase their inflation aversion. However, inflation aversion is initially very small ($k = \frac{3}{34}$): despite the sign of inflation and output are opposite, agents do not react by cutting drastically their deterministic output impulse during period 1. Since the effect of behaviors has a low propagation ($\delta = \frac{47}{2001}$) and given that the expected shock vanishes for period 1, the Bank plans to reach an increased level of output with a lower inflation rate. As the expected demand shock for period 1 is equal to 0, expected real output becomes positive and validates a trade-off between inflation and output. This scenario can be in fine interpreted as a typical lucasian sequence.

	α	γ	u_0	δ	k	m	π	y	$L(\cdot)$
t_0	7	39/202	0	1044/1667	3/34	0.5	0.0507521	0.00979866	0.0152096
t_1					0.0881914	0.525376	0.0137907	0.0399821	

Table 2: Lucasian sequence II

Strategy II (table 2) is also Lucasian. In this case, the effects on inflation and output are more symmetric and enhanced. Three factors explain this more orthodox strategy. The amount of deterministic impulse is larger ($\delta = \frac{1044}{1667}$), explaining that inflation and deterministic output have larger variations. Inflation and output have initially the same positive sign, cutting down the inflation aversion and increasing the inflationary expectations. These two combined moves increase the weight of bullish between period 0 and 1 and create a substantial output impulse during period 1. In that case, the Bank has no incentive to create an excessive inflation at period 1 to avoid any utility loss caused by a deviation from the targeted inflation to the norm.

	α	γ	u_0	δ	k	m	π	y	$L(\cdot)$
t_0	3	35/101	0	962/15001	101/102	0.5	0.0472744	0.0163822	0.0272277
t_1					0.989429	0.523637	0.0577558	0.054785	

Table 3: Phillips sequence I

Strategy III (table 3) reveals a Phillips sequence. The Bank is weakly conservative that explains that inflation is not so low, in period 0. In this period the Bank deliberately chooses to boost output by over-inflating. This initial boost decreases inflation aversion of agents while the slightly high level of inflation increases the weight of inflationary expectations. The result is a subsequent deterministic bullish impulse in period 1, while the Bank, definitively non conservative, increases once more the planned inflation.

	α	γ	u_0	δ	k	m	π	y	$L(\cdot)$
t_0	7	97/202	-4/51	14/1500	23/34	0.5	0.034053	0.0155821	0.0167057
t_1					0.676112	0.517027	0.0342999	0.034182	

Table 4: Phillips sequence II

Strategy IV (table 4) is rather close to Strategy III. The differences are the following. There is an initial negative shock which decreases output during period 0. The bank is more conservative and chooses initially a more contained inflation. During the second period, the effect of conservatism is more pronounced than in case 3. The output increases at period 1 as a consequence of the vanishing expected shock and the increase of the bullish proportion of agents.

	α	γ	u_0	δ	k	m	π	y	$L(\cdot)$
t_0	25	600/202	0	679/1000	43/102	0.5	0.0620754	0.184382	0.0331612
t_1					0.416744	0.531038	0.0594059	0.0665005	

Table 5: reverse Phillips sequence

Strategy V (table 5) is also of a Phillips sequence but the strategy of the Bank is to reduce inflation, cutting clearly output which was initially largely above norms. This recessionary policy is a consequence of the intertemporal objective of the Bank. If the Bank would have chosen a low level of inflation and of output at the period 0, the consecutive effects on the variation of inflation aversion and inflationary expectations would have not been sufficient to generate a level of output in period 1 compatible with the maximization of the function of gain.

In other numerical experiments, we tested in a more advanced way the influence of the parameters. These series illustrate the contingency of the monetary policy strategies. A consequent increase or decrease of relevant parameters like conservatism or inflation-aversion is frequently sufficient to involve progressively the monetary policy strategy to switch from Lucas to Phillips and *vice versa*.

4. Comments and Conclusion

The model presented in section 2 analyses monetary policy strategies of an independent Central Bank committed by a political authority to the respect of a mixed objective. We chose as objective a function of gain to be maximized, including growth as positive term and deviation of inflation from the nominal norm as negative term. The fully informed Bank interacts with incompletely informed heterogeneous agents who split between under/over – inflationists and inflation averse/lovers. We have experimented diverse values of relevant parameters like the degree of conservatism, the output sacrifice, initial conditions relative to average inflation aversion, completed by the influence of initial demand shocks. In section 3, with the help of numerical simulations, we pointed out that the relevant monetary policy responds to initial signals and evolves along with macroeconomic interactions between the Bank and agents. The animal spirits that create the deterministic part of the impulse are also influenced by the results of monetary policy. If the relative size of bullish behaviours increases between period 0 and period 1, the level of deterministic autonomous impulse is higher during period 1 and, for a given output sacrifice, Central Bank can improve its inflation/output trade-off. Successful monetary policies are more founded on a relationship of confidence between Bank and agents, than on the implementation of the logic transparency – commitment – credibility. Confidence is not given but it can increase over time by the observation of initial real and nominal results of monetary strategies.

A "confidence regime" ceases to oppose agents to central monetary authorities, and then to present both side as playing a strategic game. It depends on the learning process that agents are experimenting in a context of incomplete information. This confidence regime is not so far from the state of coordination referred to by Aglietta and Orléan in their 1998 book (Aglietta, Orléan and *alii*, 1998, p.24). Hierarchical confidence, methodical confidence and ethical confidence correspond to three levels of acceptation of the monetary and the financial regulations by the agents of the economy. First, Central Bank's mission consists in instituting and protecting a certain "monetary order". This order subordinates the exercise of monetary policy, as it is possible to assimilate the notion of order with the principle of value preservation (Aglietta and Orléan, 2002, p.104). If the issuing institution enjoys now an ethical confidence, it is useless for it to choose monetary policy transparency. In fact, it just has to promise the maintaining of a monetary order, to provide certain continuity for the agents who believe in it. If they are convinced by that Bank's action is well-founded, and that its sole objective is the achievement of the greatest number of agents' satisfaction, they have no reason (and interest) to sanction it. The persistence of the confidence regime is then the best proof of the satisfaction it

generates.

The confidence relationship develops and becomes durable through experience and in that sense, it can be considered as the direct results from a learning process. Maybe has such a process greater chances to be successful for all participants if the Central Bank has a margin of *manœuvre*, if it is not trapped in the transparency requirement and if it is not submitted to the strict respect of a monetary target.

The success of a monetary policy logically depends on the combination of a small number of macroeconomic indices and on the way agents appreciate monetary authority's actions. When information is not complete, agents are not anymore able to decide ex ante if the policy is well-founded: they have to postpone their evaluation to the moment the macroeconomic effects of the intervention appear. In the same context, monetary authorities dispose of a considerable degree of freedom which is independent from opportunist behaviour and from political authorities' objectives. The Central Bank should therefore exploit this variability in agents' perception, concerning the optimal inflation rate (whether growth is high or low). Economy's confidence in Central Bank is not exclusively linked with an intangible norm in terms of nominal objective; it depends on Bank's capacity to make inflation match with the pace of growth.

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