The bubble of ideologies

"It is said that all Cambridge scholars call zero "aught"
and all Oxford scholars call it "naught."
Apud **John D. Barrow**

"The fact that I am here is a low probability effect,
and I have the tendency to forget this."
Nicholas Taleb

The strangest thing brought about by the global crisis is the resuscitation of ideological perspectives. There is little doubt that peculiarity is a derivative of the lack of understanding. In this case, the opacity of causes and the inefficiency of solutions to the crisis have generated the massive recourse to the sufficiency of ideologies.

The fact that capitalism and socialism are being brought forth shows how tough it is to tolerate ignorance in the phase of the powerlessness of making things function normally. Instead of becoming an object of study in order for its determinants to become understood, the crisis has turned into the test field of doctrinaire rhetoric. That now a camp – that of the romantics – sees again the sprouts of revolution and the other – the camp of the attached – hopes for the market to level its failures, there seems to take place that which has been going on since Plato: a dispute for the assumption that ideas generate reality!

Unfortunately, the dispute has lately been taking aggressive forms. It is fueled by the winning experience of intolerance mixed with the majority's ideologically motivated exaltation. The crisis offers a chance to both bellicose camps of getting excited at the thought that the perfect disaster is linked to the other side's victory. The battle is still being waged on the barricades erected with the furniture that's been brought out from the offices of the internationals. This is why after the sounding of the horn for the fall of Sodom the next line is whispered to its biblical pair. Instead of distinguishing the causes of the crisis there is recourse to sounding the horn for the final solution to the capitalist Gomorrah.

What is unusual is that everyone expects their prophecy to come true. Only that, geographically, we find ourselves in a different place, where biblical inspiration is no substitute for reality. Beyond the ideologies the sense for a new global space is being traced, of which we must take notice in order to make understanding possible.

Sodom and Gomorrah are the relics of ideologies which appear different in form, but are identical in their consequences. Both have built themselves as systems of hierarchical control, one focusing the ambition on the control of power, the other on the control of wealth. At the limit, power and wealth were proven to be interchangeable, therefrom the resemblance between the two systems. They overbid on the control mechanisms until failure – in the case of Sodom, and until collapse – in the case of Gomorrah. Sodom's planning and Gomorrah's market were proven to be formulas for excess: plan, evermore plan! /market, more and more market! Both have followed the obsessive path of the final frontier, up to the point of removing from consideration – in order to succeed – the rule of human nature of not taking leaps, otherwise it risks falling into the abyss.

The plan – a rational instrument used irrationally – and the market – a natural instrument used abusively – lead without exception to collapse. What provides the impulse towards collapse are the ideological perspectives in which the two instruments are interwoven.

Under this determinism it is certain the fact that neither the state nor the market will save us from the crisis. Because both the plundering state and the deregulated market have the tendency of being more than what they would manage to be as instruments of control. They both end up devouring everything.

The consequences are not, in the end, different: the state stifles private initiative in the name of social good, the market centrifugates the non-productive society in the name of individual prosperity. The plan turns the mass-scale into a benefit for the clan which holds on to power through ideology, the market distributes wealth for the benefit of the elite which legitimizes its power.

Both social good and individual prosperity have been, are and will remain ideological chimaeras under whose folds the generational experiments for the control of rights and responsibilities happen again and again.

Claiming the danger of going back to communism is equivalent to shouting the eternity of capitalism. Frankly speaking we are nowadays deafened by the noise of political preferences whose fate depends exclusively on seizing the mechanisms through which mankind insures its comfort.

It must be said that the ideological sequestration of the components of the engine of prosperity or wealth alters the reversed link, both the positive and negative ones, in any social system of a spontaneous nature. Thus the system is corrupted either towards the natural, or towards the artificial, which means that it gets to adhere to the logic of ideologies.

If this crisis has something good in it, that something is related to the sensitizing of the consciesness for a critical mass of people which would consolidate the evolutionary trends beyond the empires of the ideologies.

Humanitas fluctuat nec mergitur!

Marin Dinu

Contents

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International Road Freight Transport in France: Experiences from Germany, the Netherlands and Driver Costs Analysis

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Abstract. *These last few years, French international road freight transport has been undergoing a loss of influence within Europe while traffic has increased and great manoeuvres are taking place since the opening of the European Union towards East. Some of the French transporters are then focusing back on the French market showing a worrying loss in competitiveness. On the contrary, German and Dutch companies are increasing their shares in the French market and have reorganized themselves within Europe to face Eastern Europe competition: follow-up on customers delocalizing in the East, networking, hyperproductivity, markets segmentation between high quality transport in the West, specific markets and low cost segment in Eastern Germany and East Europe (Poland, Romania,…), intensive geographical closeness to a great harbour (Rotterdam)… What should France learn from German and Dutch experiences?*

On the basis of a comparison of our neighbours' driving costs and road freight transport structure, our contribution – a synthesis of two recent studies ordered by the Comité National Routier (CNR, studies free to be downloaded by www.cnr.fr) – will first propose a cooperation with German or Dutch companies in order to propose a winner-winner model based on exchange of competencies: North Africa (Morocco for instance) and Southern Europe for French partners (specialization Storage - Logistics) and transport business model and opening towards the East for the German and Dutch partners.

Keywords: international road freight transport; Germany; the Netherlands; driver costs.

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JEL Codes: L92, R42.
REL Codes: 10A, 16A.

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The year 2007 and 2008 have been in France a full one in terms of studies, debates and propositions, in order to understand, accompany and relaunch international road freight transport in France, in particular as far as its engagement towards international markets is concerned, one that has been undergoing a downfall these last few years. Within the framework of the actions undertaken by the Conseil d'Analyse Stratégique (www.strategie.gouv.fr), many reports have been published (9 reports at all that is to say 875 pages!): they offer a full analysis of road freight transport in France but also internationally. The synthesis presented by Claude Abraham and his team – "For an ongoing regulation of road freight transport(1)" – and the reports of the different working groups(2) have been going through a wide consultation of all actors and show the need to compare the French situation with that of our European partners(3) in order to learn a lesson for the French transporters.

Within the framework of market intelligence missions and prospective analysis of the sector led by the Comité National Routier (CNR) some investigations have been undertaken in 2007-2008 on road freight transport and driving costs in Germany and Holland by the author, directed by Alexis Giret (CNR). This article proposes a synthesis of those two studies.

Methodology and French situation

The study's methodology relies on a series of meetings/discussion led among road freight transport professionals (around 10 companies by country in more than three different regions for every country) but also among professional organizations, trade unions, the university community and public institutions (Ministry of Transport). Statistics have been obtained among appropriate organizations, public ones in Germany (BAG - Federal Office for Freight Transport, or professionals road haulage associations (BGL, DLSV in Germany and TLN in Holland) or private/semi private ones in Holland working for the Dutch Transport Cabinet (NEA, NIWO). Costs assessments are a synthesis of crossed-information (BGL information), average values and estimates for Germany and panel results (NEA information) for Holland.

The starting point of the interest of professionals and French public institutions in the study of international road freight transport in Germany and Holland originates in the worrying observation in France of a decrease of French companies' market share in international road freight transport. In 2007, the French international road freight transport has decreased by 3.2% in t.km (27.2 billion t.km) following a stabilisation noticed in 2006. In tonnes, the decline is 1.4% by 2007/2006. Cabotage of French companies is also declining by around 24% in 2007! This lack of competiveness is part of a long trend: while, between 2000 and 2004, international exchanges between France and its 15 European Union's partners have increased by 17%, French transport companies has undergone a drop by 17% [4]. This drop can be explained partly by the decreasing share of French transporters in French international exchanges. French transporters have lost 3 points in market shares every year, dropping from 35.9% in 2000 to 25.5% in 2004. The increase in imports, for which French transporters have found it difficult to position themselves, is acting against French transporters. Despite a moderate increase in exchanges with Germany (+9%) which explains more than a third of the decrease of French transporters[4], French transporters' market share dropped by 12 points and German transporters are reinforcing their position as well as third parties (among which Dutch transporters) who have seen their activities progress by 50% since 2000[4]. This situation is to be seen on the field specifically in Germany and can be partly explained with the introduction in 2005 in Germany of a pricing policy for the use of motorway infrastructure which has induced an increase in transport costs for French transporters and more particularly when return is an "empty" one. This factor has thus been well identified by the German authorities of the sector in its annual report: since the introduction of toll on motorways (2005), the annual report 2005 of the Federal Freight Road Transport Office (BAG, p. 13) is expressing that French companies are less present in Germany which gives German transporters more development opportunities.

The screening of German and Dutch long distance freight road transport markets is very interesting in terms of their engagement at the heart of Europe in a hard competition with the European Union's New Member States. It is thus interesting to see how in both countries a whole sector, well organized and structured (in terms of legislation and socially), has reacted to this external impact. Commercially speaking these newcomers show a hyperdynamism, as we will see.

Focused on its internal market, the road freight transport in France seemed protected from "big manoeuvres" developing today in the East and South (Maghreb) but this fact is no longer true: French road freight transport is now confronted with a double compression from both East (Germany, The Netherlands, East Europe) and South (Spain) on the international market but also as far as national transportation is concerned when limits on "cabotage" will be abandoned. Moreover, this compression is far from being a static one and thus it is in the framework of both an eastern and southern compression that the French freight road transport should be studied.

This situation could legitimately lead us to question the existence of French long distance road freight transport in the long term. Which strategic direction should we impulse to take advantage of the Europeanization of road freight transport on the European continent?

- Network strategies like suggested by German middle-sized companies;
- Concentration and search for a critical mass around big road/rail/sea intermodal groups;
- Withdrawal towards market niches;
- Specialization in more profitable high quality and standards transports;
- Closeness to a requalified and modern harbour (Holland).

or what we recommend: first a merging with Dutch and German companies in a European winner-winner perspective, taking into account the necessity of protecting competition, and, in a second best solution, a quick setting up of subsidiaries in Morocco or in Southern Spain in order to segment one's global transport supply (low cost/ niches/high-rank) and thus rebalance the

Center-East stream with a South-East powers… A Centre-Mediterranean answer to a freight road transport critical mass moving towards the Centre-East.

At the centre of Europe: a German economy fully exporting and a harbour for Europe, Rotterdam

Leaving aside the current crisis linked with petrol prices (july 2008) and financial market (september-october 2008), the road freight transport sector is not feeling to bad at the centre of Europe and enables Holland and Germany to position themselves as leaders in this field (table 1) for three fundamental reasons: a real dynamism of the German economy towards exports these last few months, the large outsourcing of subsidies and plants in East Europe linked with the new process of "Bazar Economy" described by H.-W. Sinn which imply a lot of transport between all the plants and subsidiaries all over Europe and the world, and a very profitable industrial woldwide positioning (success of a the famous structure of middle size companies likely to exports widely) and, for Holland, predominance of a great harbour for European inward and outward flows, this harbour being very closely connected with the German industrial structure. In the field of freight transport, the completion in 2006 of the freight railroads "Betuwelinie" between Rotterdam and Germany is considered essential.

Table 1

Road freight transport in France, Germany and the Netherlands in 2004/2005

	France (2005)	Germany (2004)	The Netherlands (2005)	in...
T.km road freight transport on national territory	205	**384**	84	Billion t.km
- from national companies	177	267	32	Billion t.km
National companies in international t.km	**28**	71	**52**	Billion t.km
T.km freight rail transport	41	86	5	Billion t.km
T.km watervay	9	64	42	Billion t.km
Number of companies	36 000	48 500	12 000	
Trucks	185 500	345 500	77 500	(more than 3.5 t.)

Source: Alexis Giret and Laurent Guihéry, Synthesis Study CNR Europe, march 2007.

For Germany, road freight transport is leading in Europe (table 1) which is easy to understand with the very central location of Germany in Europe between West and East. The reason for this are multiple but the main factor is the dynamic structure of middle size companies ("*Mittelstandunternehmen*") typical of German industrial and service oriented sector. These companies employ 72% of the 22 millions employees and are making 50% of investment. German road freight transport is twice the French sector (see table 1) and is growing quite well the last years (lack of drivers for the shipping of presents for Christmas 2006) like in Holland. Transport for third parties is important but some companies are thinking of "re-nationalizing" transport operation (own account) to keep 100% reliability, punctuality and full efficiency of transport operations, which is in Germany presented as a label: “transport made in Germany”. This label is very important for shippers working with just-in-time model of production. Sales of below 12 tons vehicles are booming because the new motorway toll implemented in 2005 do not take these vehicles into consideration.

German transport companies are organized in both way: a high proportion of family and small companies organized sometimes outside the system of collective labour, middle size companies organized on a European network, and large operators like Schenker. Like in the Netherlands, the structures of companies in Germany is based on a dual system following the model of “insider” (protected/collective labour agreement)/”outsider model” (small companies, high flexibility and reactivity, lack of job security).

Costs in Germany are higher than those corresponding in France but this is changing rapidly: trucks are 10% more expensive than in France, gasoline more expensive (+6.6%, data CNR), indirect taxes (“*droits d’accises*”) higher up to 20%, higher cost of insurance, toll pricing on motorway of around 0.20 cents euro/ km since the 1 January 2005 (increased in January 2009) but this new costs was transferred on the shippers. Truck involvement is around 130,000 km/year more than 120,000 km reported in France (CNR). Wages are ruled by a labor agreement negotiated at the Länder level which implies disparities between East and West Länder. It can be noticed that “low cost” transport companies are existing in East Germany facing directly East European competition. East German drivers can then be paid 30 % less than in the West when labour agreements are applied which is not the case every time. The daily rate in Thüringen is 6.14 euro one hour without length of service. West German transport operators are then mainly focused on “high quality transport” with high profitability and are likely to outsource transport operations in their East European or East German subsidiaries. Comparing productivities and wages of drivers, there are few differences between Germany and France … but a German driver seems to drive 22 % more than a French one by using a more “company friendly way of driving” (few time of disposal, switching mainly between time of rest and time of driving). Following strictly European regulations and working for a flat rate imply a maximal management of driving time which is one of the lessons to draw of the competitive advantages of German and Dutch drivers.

Concerning Netherlands, road freight transport is growing rapidly in NL with 7% growth each year in average. The Dutch Ministry of Transport is expecting a growth of 20% – 30% by 2020. 12,000 companies are involved with 80% specialized on international transport (70% transport for others). The Dutch are very specialized in international transport with more t.km in international transport than in national transport! The international road freight transport in Holland is then twice the French one: Dutch operators carry 57% of their exports like France for 15 years but Dutch operators are also leading in imports (52%!), which is surprising! More than Germany, the Netherlands are THE reference in terms of hyper-productivity in road freight transport: linked with the framework of the “polder model" (liberal way of life, entrepreneurs spirit, consensus, negotiation, compromises, flexi-security social system, dual system following the model of "insider"(protected/collective labour agreement)/"outsider model" (small companies, high flexibility and reactivity, lack of job security)) and far away from public interventionism, the labor relations in Dutch road freight transport are managed by a system of collective and autonomous labour agreement (see TLN and the 112 pages of their very precise labour convention 2007). The daily rate is 9.84 euro while beginning to work till 12.54 euro after six years of work in the same company (value October 2006): 40 hours a week; +30% if overtime; + 50% if worked on Saturday; +100% if work on Sunday.

Operating costs are higher: buying a truck seems o be a little bit more expensive than in France, insurance are 50 % higher, gasoline and maintaining/repairing are around 5% less expensive. As expressed in the table 2, driving cost are widely higher and are one of the higher in Europe and this positive point for employers are compatible with a leading position of Dutch operators in Europe.

To sum up, it seems that the Netherlands have set up a winner – winner model:

- Wages (50% more than a French driver in average);
- Competitiveness (despite an hourly cost 8 % higher than a French driver specialized in international road freight transport);
- Large turnover and jobs available: lack of drivers is a reality.

The success of the Dutch transport operator in international operation is then based on a high volume of work (trucks are then driving till 150,000 or 180,000 km/year and a high flexibility of the labour organisation of drivers, which lead to a competitive advantages of Dutch operators on the European market. Drivers are, in Germany and in The Netherlands, maybe more implicated in the success of the company by choosing "driving time" position or "rest time" position more than "*disponibility time*" on the tachograph. The yearly working time is around 213 days like in France. But differences are obvious in the organisation of companies looking for productivity gains, management of tours and efficient allocation of drivers: normal day of work in this sector can reach 11 hours a day, weekly working time near 55 hours (reaching 60 hours in certain cases),... On this point, due to the central position of Rotterdam Harbour in European Transport facilities, the European Commission has given an additional delay since march 2010 (5 years more) to transfer the European Guideline 2002/15 (limit of working time of freight road driver to 48 hours a week in average).

Hyper productivity of Dutch and German companies

In both Germany and The Netherlands, transport operators are hyper productive and put gains of productivity at the centre of their business management. For middle size companies, they develop networks of companies for achieving a better critical weight and a better visibility. They get more concentred too. Table 2 is expressing this hyper productivity of German and Dutch operators by showing a compared analysis of driver costs in four European countries. Methodology of the study was introduced in introduction of this paper. For Poland and France, data are coming from the CNR. East Germany can appear as a "low cost region" in Western Europe facing directly East European competitors but are full part of the famous German label of "Transport made in Germany". Western German companies are then outsourcing easily unprofitable or complicated transport operations to their East German subsidiaries for the benefit of both shippers and transport companies, both in West (keep competitiveness) and in East (having some work in a difficult economic framework).

Table 2

Main results of the study on driving costs in Germany and the Netherlands, in comparison with France and Poland (2006)

Estimations	Unit	France: study CNR	Germany: West Länder (average)	Germany: West Länder (maximum)	Germany: East Länder (minimum)	Netherlands (Source: NEA data international to France) and own adjustments;	Poland (estimation 2006 CNR; rapid growth)
Wages (with overtime and bonus)	€/month	2173	2734	2967	1718	3223	from 820 to 1,360
Employers charges	%	36 (Fillon support deducted)	25	25	25	36	22.57
Travelling expenses in average by day	€/day	38-40 Average with 50 % international	20	20	20	40 international -7 national	from 25 to 40
Total yearly cost	€/year	44 173	45 463	48 960	30 425	55 132	20 000
Weekly working time	Hours/week	49,6	56,5	56,5	56,5	55	56,5
Number of working weeks by year	Week/year	42	42	42	44	43	45 to 46
Yearly working time	Hours/year	2100	2373	2373	2486	2343	2500
Yearly driving time	Hours/year	1554	1890	1890	1980	1917	2015
Cost of one hour of work	€/hour	21	19,2	20,6	12,2	23,5	8
Cost of one driving hour	€/hour	28,4	24,1	25,9	15,4	28,8	10
Base 100 France on the driving hour		100	85	91	54	101	35

Source: Studies CNR Europe, data CNR, own calculations and cross comparisons, firms and university interviews.

Driver costs are showing high differences in Europe, especially from East to West Europe. But driver costs do not seem to play the key role, as the Netherlands are experiencing high costs of drivers and are leading on this market: quality of services, organisation of the business and management, reliability (label "transport made in Germany" for example) and level of productivity are also important.

Looking to road freight transport in Germany and the Netherlands: which recommandations?

Germany and The Netherlands are leading in international road freight transport in Europe today and are facing a strong competition from East European countries. They are pioneers in reaction and strategies developed facing new member's states and French operators can then learn from them.

Objectives are, like the history of the European Union Integration process, to balance benefits and risks among European nations in a long term process of mutual convergence. If we consider that the competency of international road freight transport is a key function of each nation states and then cannot disappear in France (no total specialization on the European level in the transport sector is likely to emerge – this assumption has to be investigated –, then we can propose some recommendations for French transport companies and public authorities.

Road freight transport in Germany and Holland is dynamic and successful since the joining of the New Member States in the European Union (opportunities), even if the competition is becoming stronger and profitability low (or negative like in Holland in average). Companies in both countries are facing a lack of drivers. "Cabotage" is, in a short future, challenging the future of French road freight transport, especially with Romania and Bulgaria. Ukraine, Turkey and Russia are also in a middle term perspective also formidable partner.

Facing this new European environment, German and Dutch companies have developed interesting strategies:

- Following of industrial companies in the outsourcing of production process in East Europe (especially Germany); Transport and logistic subsidiaries set up in East Germany (driving costs between 20 and 30% less expensive) or in East Europe with merging with local operators (driving cost inferior to 40% following a study of the BGL and the German Transport Ministry).
- Productivity gains if possible
- In Germany: decrease of average personal costs, maybe driving costs but difficult to show evidence on this point. Germany is the only country in Europe that has experienced an average decrease in wages the last 5 years (decrease of real wages of 0.8% the last 8 years (2000-2008, Source: foundation Hans Böckler, Les Echos, 18.09.2008). More and more workers (maybe drivers?) in Germany are not integrated in collective labour conventions, which have an impact on competitiveness. This trend is considered as "competitive disinflation" which has an impact on restoring cost-competitiveness of Germany the last years. This model is less transferable to France for socio-historical raisons (strong trade unions, lack of confidence between social partners,…).
- Networking of medium size operators to increase the critical mass and get more visibility; strategy to be developed with French operators; outsourcing of non profitable transport to small operators or East European partners, like in Germany.
- Better connection with ports (example of Rotterdam and European Distribution Center); balance development with other European ports to be investigated, especially with congestion issues in Rotterdam Harbour.
- Specialisation in high quality transport as the German operators do: reliability, punctuality, services (logistic, packaging,…), know how; "niche" market; label quality transport (like the famous "transport made in Germany").

Concerning the French transport operators, the development of European International Road Freight Transport implies a rapid and strategic reaction: if we consider and accept the process of European integration process as a complicated balance and trade-off between nation states in a winner – winner game – this was the case for the last 50 years of European integration, it is difficult to accept the disappearance of the French international road freight transport. Solutions has to be found in the merging of French operators with German and Dutch operators in a winner – winner model: giving access to south European or north African markets for central and north European operators and increase of critical weight for accessing East European markets for both French and Dutch/German operators. In a second best solution, if merging is unlikely to appear, French operators would have interests to "move South", by setting up subsidiaries in North Africa (Morocco). If this solution is likely to boost, on a short term perspective, the competitiveness of French international road freight companies, the impact of such strategies on the current European integration process (political integration) is difficult to assess.

Conclusion

These last few years, French international road freight transport has been undergoing a loss of influence within Europe while traffic has increased and great manoeuvres are taking place since the opening of the European Union towards East. Facing these new competition pressures in the East of Europe, German and Dutch companies are increasing their shares in the French market and have reorganized themselves within Europe to face Eastern Europe competition: follow-up on customers delocalizing in the East, networking, hyperproductivity, markets segmentation between high quality transport in the West, specific markets and low cost segment in Eastern Germany and East Europe (Poland, Romania,…), intensive geographical closeness to a great harbour (Rotterdam). Driver costs do not seem to play the key role, as the Netherlands are experiencing high costs of drivers and are leading on this market but quality of services and level of productivity are also important. The emerging organization of the European international road freight transport is then a long process and there a few evidences at this time that can predict this market in the future.

Notes

(1) http://www.strategie.gouv.fr/article.php3?id_article=838

(2) «Développement, compétitivité, et emploi »; chairman: M. Maurice Bernadet «L'acceptabilité sociale des poids lourds»; chairman: M. Jean-Noël Chapulut «Les relations et les évolutions sociales; chairman: M. Georges Dobias «Transport routier de marchandises et gaz à effet de serre»; chairman: M. Michel Savy.

(3) Germany, as France does, has a good knowledge of the sector through the mission of market analysis of the B.A.G. (Bundesamt für Güterverkehr, Cologne). As expressed in a meeting by the Dutch Ministry of Transport, The Netherlands have a strong liberal culture and then few interests of markets analysis of privates companies, for example in the transport sector. Some statistics of the sector for example are managed by NEA, a private company. TLN (Transport Logistic Nethelrands, the professional association of Dutch Road Haulage) is a key actor too, for statistics for instance.

(4) See Ministère de l'Equipement, du Transport et du logement, SESP, «La transport routier de marchandises en Europe en 2004: forte croissance du pavillon espagnol», 2006.

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Managerial Stock Compensation and Risky Investment

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Abstract. *This study analyzes the relationship between the mix of CEO equity-based compensation, namely stock options and restricted stock, and firms' risky investment. In general, the theory suggests that long-term compensation aligns CEOs' and shareholders' interests by inducing the managers to undertake risky investment, which has a positive impact on long-term well-being of the firm. However, as my results show, it is important to distinguish between types of awards since they can have different effects on the riskiness of the firm. In this respect, I answer the question how are different types of stock based compensation related to the executives' determination to increase or not the intensity of the firm's risky investment? I find that awarding the CEOs preponderantly with stock options positively affects the firm's level of R&D investment. Conversely, a higher proportion of restricted stock in the CEO's compensation is related to lower investment in (risky) R&D. The inverse relation of causality also holds. Firms that make intensive R&D investments are more likely to award their CEOs with more stock options relative to restricted stock. Overall, the results are consistent with the theoretical prediction, in that the managerial compensation scheme plays an important role in determining the level of R&D investment.*

Keywords: stock options; restricted stock; executive compensation; risky investment.

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JEL Codes: J33, G32, M12, M52, O32.
REL Codes: 12C, 12F, 14C.

Introduction

Under the general framework of agency theory, due to the separation of ownership and control, managers and directors may adopt corporate decisions of under-investing in long-term intangible projects such as R&D that is inconsistent with the long-term maximization of firm value. The argument is simple and related to corporate governance structure. While diversified shareholders might gain from the high returns associated with the high risk implied by R&D projects, the managers are risk averse and prefer to boost the short-term earnings at the expense of the firms' long-term well being. Although R&D expenditures are viewed by investors as a great source of future benefits and competitive advantage, they are also characterized by uncertainty and unpredictable in income, which amplifies the asymmetry information problem.

These potential critical aspects in the monitoring and investment practices can be, to some extent, mitigated by including stock option based plans in managerial compensation. Executive stock options are the most common form of equity-based compensation. Stock options are financial contracts that allow managers to buy shares of the company's stock at a fixed price, called exercise or strike price, through a specific period of time. Usually, the executives exercise the option to buy stock and then sell the stock for the cash. Therefore, if the price of the stock rises above the strike price, the CEO can exercise the option and gain the difference between stock price and exercise price as a profit.(1) Stock options, due to their convex payoffs (as stock volatility and firm risk increase, the CEO's potential gain increases at an increasing rate), induce the manager to undertake risky activities, which otherwise would be avoided. Therefore, he contributes to the long-term value of the firm, the common objective with the shareholders. Restricted stock is common stock, which requires a certain period of time to pass or a specific firm's performance to be fulfilled before the manager can sell the stock. Awarding the managers with restricted stock has opposite effect on the CEO's decision to invest in R&D. Its linear payoff makes the risk-averse manager avoid risky projects, thereby lowering the firm's R&D spending.

The attractiveness of options relative to stock can be seen more clearly if we consider a numerical example. Consider the CEOs of two companies, holding options and restricted stock in two different periods of time (Table 1). Considering different alternatives, in period 2, the stock price or the volatility of the price goes up by 5%. We can see that in the first case, when the stock price increases, the total gain from holding both options and restricted stock is almost the same for both CEOs (with the values of options computed with Black-Scholes formula). However, when the stock becomes more volatile (which is directly related to the nature of risky investment), the total gain of the CEOs is hugely different and it is clear that the CEO from the Firm B, which is awarded with more options will have a better incentive to make risky investments.

Therefore, granting stock options to the managers would exert a positive influence on their behavior on investing in R&D expenditures. If managers are compensated with restricted stock, this will negatively affect the R&D investment.

In this study, I investigate the effect of the mix of stock options and restricted stock on the intensity of R&D investment by firms. Empirically, I hypothesize a positive relationship between an option-based type of contract and R&D intensity. Using a sample of 764 non-financial firms, I test this hypothesis in a simultaneous system of equations, implying a bivariate probit model where the mix ratio of options to restricted stock and R&D intensity are simultaneously determined. Consistent with the hypotheses, the results show a positive significant association between R&D intensity and mix of options and restricted stock.

Literature review

The complexity of equity-based contracts and the ultimate effect of aligning managers and shareholders interests by tying compensation to stock price performance have been analyzed in numerous studies. Kole (1997) finds that the characteristics of different types of plans (stock options and restricted stock plans) depend on the nature of assets (tangible versus intangible) being managed. He found that firms dealing mainly with intangible assets (such as high innovative firms) are more flexible in using equity-based awards. Mehran (1995) suggests that there is a positive relation between the firm performance and the percent of managers' stock ownership, emphasizing that the type of the compensation rather than the level will determine managers to increase the value of the firm.

In relation with R&D expenditures, Cheng (2004) finds that there exists a positive relation between changes in R&D spending and changes in CEO option compensation under a horizon hypothesis (CEO approaches the retirement age) and a myopia hypothesis (the firm suffer a small decline in earnings). He found the same relationship of CEOs' total compensation (sum of salary, bonus, stock options and other long-term incentives) relative to the changes in R&D spending but without differentiating between stock options and other types of long-term compensation. In the same view, Clinch (1991) investigates how the compensation practices vary with levels of R&D activity, but his study is also limited by the choices of compensation measure (total compensation or salary and bonus). Lerner and Wulf (2006) find a strong positive association between long-term incentives of the heads of corporate research and development (stock option plans and restricted stock) and patents. Although the relationship between R&D investment and executive equity-based compensation was investigated in numerous studies, the previous research does not distinguish between different types of stock-based compensation or analyze these decisions separately. Closest to my study, Ryan and Wiggins III (2002) use a sample of firms from 1996 and examine the relation between R&D investment and stock options and restricted stock compensation addressing the simultaneity problem but they do not support their empirical model with a solid theoretical argument. Bryan et al. (2000) examine the mix of stock options and restricted stock relative to total compensation and R&D investment but in their analysis they treat options and restricted stock separately and also ignore the simultaneity between R&D investment decisions and CEO stock compensation.

Data and empirical model

The data come from three sources.

1. I obtained data on CEO compensation from Standard and Poor's Execucomp database. This database contains data on stock options, restricted stock, cash compensation and other managerial characteristics (ownership, age, CEO-chair duality, tenure), beginning in 1992, for the top five executives of over 1,500 publicly traded companies in the U.S.

2. My second source is the Industrial Compustat database. It is used to collect data describing firms' financial indicators such as market value, R&D expenditures, total assets, sales, debt in capital structure and net cash flow.

3. Finally, I used proxy statements of firms publicly available from Security Exchange Commission (form 14 def) to supplement some of the information from the Execucomp database.

The description of all variables is given in Table 2.

I began the sample selection with 1689 firms listed in Execucomp with the information available for 2003 retaining data only for the chief executive officers. Among the nonfinancial corporations listed in Compustat, industrial segment data, 798 firms have also available information in the Execucomp database. For 50 companies, due to their missing values for the age of the CEO, the information was hand-collected from their proxy statements available in the form 14 def of Security Exchange Commission. The final sample for this study contains 764 nonfinancial companies that have complete information from all three sources.

The analysis requires a simultaneous estimation approach because R&D intensity[2] of the firm and mix of options and restricted stock reciprocally influence each other. According to the principal-agent model, managers are more risk averse than shareholders and tend to avoid R&D projects that increase the riskiness of the firm. Therefore, firm's long-term investment and, implicitly, the firm's value will suffer as a consequence of the CEO's actions. The optimal solution is to increase the long-term incentive payment offered to the CEO. However, while a stock option, due to its asymmetric payoff, exercise a positive influence on the manager's decision of investing in R&D, restricted stock has an opposite effect.

R&D intensity affects the stock-based compensation scheme in that high R&D intensive firms are more likely to award their CEOs with more options than restricted stock. The R&D investment outcome has a high degree of uncertainty. Therefore, by undertaking risky projects, the CEOs of

R&D intensive firms need to be compensated by long-term incentive payment that can potentially provide him huge gains (i.e. stock options). High tech firms are also usually financed by venture capital investment. The venture capitalists insist on compensating the managers with long-term payment that provide them substantial incentives (more likely with options than with restricted stock) that assure the risky project will be fulfilled.

To model the simultaneous relationship between the mix of equity-based compensation and R&D intensity of the firm, I estimate a bivariate probit model, given by the following system:

$$RD\_I = \alpha_1 + \beta_1 \times TYPE + \gamma_1 \times OWNCEO + \delta_1 \times AGE + \theta_1 \times DEBT + \mu_1 \times CASH + \pi_1 \times MTB + \eta_1 \times BONPR + \nu_1 \times SIZE + \psi_1 \times TENURE + \omega_1 \times CHAIR + \varepsilon_1$$

$$TYPE = \alpha_2 + \beta_2 \times RD\_I + \gamma_2 \times OWNCEO + \delta_2 \times AGE + \theta_2 \times DEBT + \mu_2 \times CASH + \pi_2 \times MTBLAG + \nu_2 \times SIZE + \psi_2 \times TENURE + \mu_2 \times CHAIR + \varepsilon_2$$

The main hypotheses (in their alternative form) to be tested are:

H1: variable TYPE has a positive impact on R&D intensity (RD I), that is, $\beta_1 > 0$. Alternatively, $\beta_1 \leq 0$ implies that the mix of stock options and restricted stock has a negative or no effect on R&D intensity.

H2: R&D intensity (RD I) has a positive impact on the mix of options and restricted stock (TYPE), that is, $\beta_2 > {}^{-}0$. Alternatively, $\beta_2 \leq 0$ implies that R&D intensity has a negative or no influence on the mix of equity-based compensation.

Several influential factors are controlled for in the empirical model. Most of these variables influence both R&D intensity and CEO's compensation scheme.

CEO ownership (OWNCEO) influences both the R&D intensity and the type of equity based compensation. When the CEO holds a large portion of the firm's common equity, his interests are almost aligned with the shareholders' interests. Shareholders, whose risk is diluted through diversified portfolios, have a positive attitude towards R&D investment that can increase in the long run the value of the firm. Therefore, I expect a positive relation between R&D intensity and manager's ownership. CEO ownership is also related to the equity compensation part. A negative relation is expected since the necessity of awarding options is decreased by the already existed convergence of shareholders and CEO interests.

CEO's age is related to both type of equity compensation and R&D intensity. According to Cheng (2004), CEOs approaching the retirement age tend to invest less in R&D because they are focused more on short-term projects. As Yermack (1995) recognizes, "the corporations could counteract the horizon problem" by using more stock option awards. Therefore, I expect a negative relation between CEO's age and R&D intensity and a positive relation between CEO's age and TYPE variable.

CEO's tenure influences stock-based compensation in a way that more restricted stock is awarded if the manager holds that position for a longer time (Ryan, Wiggins, 2002). This is sustained by the fact that CEOs with longer tenure which have a greater fraction of their human capital invested in the firm is most likely to behave towards shareholders' interests. Therefore, they tend to undertake more risky projects and the demand for option awards (which provide the incentive alignment) is less.

A similar argument holds for CEO-CHAIR duality in relation with R&D intensity and equity-based compensation. As Vancil (1987) suggest, if the CEO is also the chair of the board, he already demonstrated his loyalty and consideration to the firm and therefore he has enough incentive not to avoid risky investment. Also, awarding options have a minimal effect on his decisions. Therefore, I expect a negative relation with TYPE and a positive relation with R&D intensity.

Cash bonus as percentage of total compensation (BONPR) influences R&D intensity but it does not have a direct effect on the mix of stock-based compensation. The reason for not including it as explanatory variable in TYPE equation is that cash bonus is typically granted based on short-term CEO's performance while both options and restricted stock, by their nature are related to the long-term compensation. As Jensen (1986) found, the CEOs paid with cash bonus based on short-term performance tend to avoid risky investments and to focus on projects that pay back in the very near future. Therefore, a negative relation between R&D intensity and cash bonus is expected.

In line with Cheng (2004), cash bonus variable is treated as exogenous determinant of R&D intensity, considering that it is predetermined when the decision of investing in R&D is taken. The reason that the author suggests is that "compensation committees usually determine cash bonuses at the end of the fiscal year, while they often grant stock options before the end of the fiscal year", maintaining the flexibility of adjusting the equity-based compensation.

With respect to characteristics of the firm, financial solvency or debt is expected to have a negative relation with both R&D investment and compensation mix, with less options preferred in order to reduce the agency costs (Yermack, 1995; Ryan, Wiggins, 2002; Nam et al., 2003).

Firm's liquidity, defined as the net cash flow scaled by the market value, affects R&D investment since higher levels of cash presumably induce higher levels of R&D investment (Ryan, Wiggins, 2002; Bhagat, Welch, 1995). According to Bryan et al. (2000) and Yermack (1995), if the firm is liquidity constrained, the CEO is more likely to be paid with stock options, a proper way to economize cash. Therefore, cash availability should negatively affect the equity mix compensation.

I include the natural logarithm of firm's total assets to control for size. A larger firm has more complex operations and therefore requires a greater managerial expertise. With more assets at the managers' disposal, the possibility of agency conflicts increases. This increased probability for agency problems suggests a need for more incentive alignment through equity-based compensation.

Market-to-book value of assets, used as proxy for investment opportunities determine R&D investment (Nam et al., 2003). This measure shows the mix of the value of assets already in place and the market value of both assets in place and the value from future investment and growth opportunities. Firms that have more investment opportunities are interested to invest more in R&D to expand these opportunities (Ryan, Wiggins, 2002). High growth firms (which are mainly R&D intensive) also rely more on awarding options to ensure the incentive alignment of the CEO and shareholders. The decision for more or less options or restricted stock is taken based on investment opportunities and positive NPV projects in the previous year (Ryan, Wiggins, 2002).

To identify the equations in this two-equation simultaneous probit model, I must include one exogenous variable in each equation that is excluded from the other equation. BONPR variable is used in the first equation as the identifying variable in the R&D intensity equation. While the CEO's cash bonus may be considered endogeneous in the long run, in this context I treat it as exogenous because it is predetermined at the time of decision. I use MTB LAG, a proxy for investment opportunities, as the identifying variable for the endogeneous variable TYPE. Firms that have more investment opportunities are interested in investing more in R&D to expand these prospects and rely more on stock option compensation to ensure the inventive effect. The decision to offer more or less options or restricted stock is made based on investment opportunities and positive NPV projects in the previous year. Therefore, MTB LAG influences the compensation scheme but does not directly affect the R&D intensity of the firm.

Because both equations have dichotomous dependent variables, they are estimated in a bi-variate probit model. This estimating model allows for the simultaneity between R&D intensity and the mix of equity-based compensation(3).

Empirical results

Table 3 reports the marginal effects of the joint estimation of R&D intensity and the mix of stock options and restricted stock compensation using the bivariate probit model described in the previous section. The Wald test confirms that, indeed, a joint estimation procedure is needed, the null hypothesis of $\rho = 0$ (where $\rho = \text{cov}(\varepsilon_1, \varepsilon_2)$) being rejected at 1% significance level.

As we can see from the table, with respect to the first equation of the model, the results are consistent with the prediction for the first main hypothesis. Variable TYPE has a positive coefficient significant at 1% level, indicating that one unit increase in option-restricted stock ratio will induce an increase of 58.5% in the probability of investing more in R&D. This result indicates that the managers compensated with more stock options relative to restricted stock have a greater incentive to invest in R&D since their risk aversion effect (induced by restricted stock) is dominated by their sensitivity to the promising payoffs offered by stock options.

The other relevant determinants in the R&D equation are generally consistent with the empirical predictions described in the previous section.

CEO ownership displays a significant positive relation with R&D intensity, meaning that managers who have greater wealth invested in firm's stock are more likely to undertake risky projects, since their interests are closely aligned with shareholders' interests.

Agency cost of debt is negatively related to R&D intensity, with one unit increase in DEBT leading to 5.4% decrease in the probability of investing in R&D. This finding is consistent with the argument that firms with high debt ratio spend less on R&D and also that firms with higher growth opportunities have lower levels of debt (Bhagat, Welch, 1995).

Free cash flow (CASH) measure the liquidity of the firm and we would expect that larger the availability of the funds, greater the R&D expenditure. However, my results show a negative relation between these two variables, yet in line with Ryan and Wiggins (2002), who also found a negative significant relationship. Their explanation is related to the life cycle of the firm, i.e. the necessity of young firms to produce positive operating cash flow. I add some other possible justifications relying on the fact that firms might want to conserve their available liquidities in order to increase the cash dividends, to buyback shares of the company or to make some other investments or acquisitions.

Market-to book assets ratio, measuring the investment opportunities the firm faces is positively associated with R&D intensity. The relationship is also in line with the established prediction that firms with higher market-to-book ratio (whose market value of assets is given mainly by the value of future investment) invest more in R&D.

Significant at 5% level, the relation between CEO's age and R&D investment shows that when the CEOs become older they are less likely to invest in R&D because of their employment horizon limitation.

As expected, cash bonus is negatively associated with R&D intensity. This finding suggests that if paid in cash, the manager is more likely to engage in opportunistic activities that can boost firm's earning on a short-time basis rather than undertaking risky projects.

The variables for CEO-chair duality and CEO's tenure display the predicted signs, while SIZE indicates an opposite effect on R&D intensity compared to what it was expected. However, these variables are not significant at usual relevance levels.

The second equation in the model shows how the mix of stock options and restricted stock is influenced by the R&D intensity along with the other relevant determinants of the equity-based compensation. As expected, firms that invest more in R&D are more likely to award their CEOs with stock options than restricted stock. The estimated marginal effect is positive and significant at 1% relevance level, which means that one unit increase in R&D intensity leads to an increase of 0.59 in the probability that stock options prevail in the compensation scheme.

With respect to the other control variables, CEO ownership is negatively related to the mix, meaning that when the CEO holds significant portions of the firm, he is less (more) likely to be paid with stock options (restricted stock), as it was expected. This is explained by the fact that CEO's interests correspond to those of shareholders and therefore the need for stock options that induce this incentive is diminished. The CEO can be compensated with restricted stock, which give the shareholders a plus in assuring he will stay with the firm and act according to their goals.

Firm's debt is negatively related to the TYPE variable. The result indicates that higher the leverage of the firm, lower the stock options awards, as the negative significant estimate for DEBT in the second equation shows. This result, in line with the previous literature (Yermack, 1995, Bryan et al., 2000) is justified by the stockholder-debtholder conflict when the firm is highly leveraged. When the managers align their interests with shareholders' interests (by being compensated with stock options), they also increase the risk of the firm (by undertaking more risky projects). This increase in risk will affect the debt holders who will require a higher risk premia for supplying more capital. Therefore, as financial leverage increases, the options awarded will decrease, reflecting firm's intention to minimize the cost of debt.

Financial liquidity is positively related to the mix of stock-based compensation indicating that more liquidities firms have more likely they are to award their CEOs with stock options rather than restricted stock. This might be apparently contrary to the theoretical predictions that cash constrained firms make a higher use of stock options in order to conserve cash (Core, Guay, 2001; Bryan et al., 2000). However, it is in line with the results of studies as Ittner et al. (2003), Kroumova and Sesil (2006) and Jones et al. (2006). According to Kroumova and Sesil (2006), "keeping a higher proportion of their assets in cash may allow stock option firms to finance future growth by acquiring other firms in order to gain access to new technologies and customer bases." The authors also recognize that higher liquidity is "indicator of financial health" and therefore, it seems plausible that these companies pay options to their CEOs not necessarily because they are liquidity constrained and want to save cash but because they are profitable companies that choose to invest their money in increasing-value projects.

Market-to-book ratio is negatively related to TYPE variable. This indicates that firms in the sample facing previous positive NPV projects award their CEOs on a restricted stock base. The justification relies on the fact that even when paid with restricted stock, the CEOs in the sample are motivated enough not to avoid the investment opportunities that can increase the firm's market value.

CEO's age was found positively associated to the stock option-restricted stock ratio with the marginal effect significant at 5% level. This positive relationship[4] indicates that when the managers approaches the retirement age, his incentives of investing in R&D projects are drastically diminished and therefore the compensation committees award them more stock options.

When the CEO is also chair of the board, the alignment incentive is attained and therefore stock options are less used in payment than restricted stock. This is shown by a negative coefficient although weakly significant.

With respect to the size of the firm and CEO's tenure, the results indicate no significance relation.

After incorporating different industry dummy variables, the model has been reestimated. None of the industry dummy variables were statistically significant and the sign and significance of the relevant coefficient estimates remain unchanged.

Summary and future research

A vast empirical literature in corporate finance considers the relation between equity based compensation and R&D investment. Most of it relates only stock options to the executives' investment decisions, since until recently; options were the most common form of market-orientated incentive payment. Most of the studies that consider both types of equity-based compensation (stock options and restricted stock) analyze their relation with R&D investment ignoring the simultaneity between these decision variables.

In this study, I looked at the relation of the mix of stock based compensation in form of stock option and restricted stock with the managers' R&D investment decision. Stock options opposite to restricted stock are the preferred form of equity payment if firm's objective is to increase R&D expenditures and reduce the agency problems. Therefore, the type of equity based compensation influence the level of R&D intensity. On the other side, growth firms that intensively invest in R&D tend to offer their CEOs stock option-based contracts rather than restricted stock-based contracts in order to assure their objectives are met.

I use a bivariate probit model and compute the marginal estimates with respect to independent variables and I find that the both marginal effect estimates reflecting the joined relationship between R&D intensity and mix of equity-based compensation are positive and significant at 1% level. With respect to the other determinants of R&D investment and compensation policy, the results suggest that CEO stock ownership exerts a positive influence on the R&D intensity of the firm and stock options are less likely to be awarded when the manager holds a large fraction of the firm's equity. Once the CEO becomes older, he tends to spend less on R&D. To insure the CEO has enough incentive to invest in R&D when he approaches retirement age, the compensation committees award him with more stock options. If the manager is also the chair of the board, the evidence suggests that he spends more on R&D projects and, therefore, his interests are aligned with those of shareholders and option awards are not necessarily required. Firms with higher agency cost of debt invest less in R&D and pay their CEOs with less stock options and more restricted stock. The results also infer that the firms in the sample that have more cash liquidities tend to invest more their cash liquidities on projects that are not R&D intensive and pay their CEOs preponderantly with stock options.

The direct implication of this study is that equity-based compensation plays a critical role for both managers' and shareholders' decisions in assuring the long-term success of their companies and their well-being as individuals. A key to attain these goals is to understand how each type of stock-based payment affects the level of R&D investment, one of the most important sources for firm's prosperity. Based on their industry characteristics (high or low levels of innovation activity and rapid change), the companies can efficiently compensate the management and reduce the agency problem gap.

The study can be also related to the current economic aspects regarding executive compensation. Firms participating in the recent Troubled Asset Relief Program (TARP) were required to restrict their executives' cash compensation at $500,000. While the policy sets conditions on the time of exercising the stock incentives, it does not place any limit on the amount of stock options that CEOs receive as long-term incentive plans. Although this could be viewed as a gateway for opportunistic managerial behavior, capping stock options might have a negative effect on the companies R&D investment. Without proper incentive compensation, a CEO, due to his risk-aversion, can avoid undertaking net positive value risky projects and decrease R&D expenditures. A drastic overall reduction in the research and development programs of these firms may have an undesirable effect by leading to a general reduction in the economic growth.

Using a very recent data set, the study is conducted in a cross-sectional approach leaving out the possible changes that might appear for a longer period of time. This is an opportunity for the future research to investigate the relation between R&D investment and equity-based compensation by accounting for one of the recent governmental policy (FAS 123-R), that is directly related to the accounting treatment of stock options and indirectly affects the CEO's compensation scheme.

A larger dataset extended over years also allows exploring the relationship between the mix of stock options and restricted stock and subsequent firm performance in risky and non-risky industries. Although I expect both the stock options and restricted stock to be positively linked to later firm performance, it may be interesting to analyze which instrument has a stronger relation with firm performance when different levels of risk situations are involved.

Table 1

Numerical example for emphasizing the attractiveness of options relative to stock

Period 1:	Firm A	Firm B
Options values:	3.9 mil.	4.3 mil.
Restricted stock values:	6.3 mil.	2.1 mil.
Period 2: stock price goes up by 5%		
Gain from options:	≈ 285,000	≈ 495,000
Gain from stock:	+315,000	+105,000
Total gain:	+600,000	+600,000
Period 2: volatility of the stock goes up by 5%		
Gain from options:	+55,000	+505,000
Gain from stock:	+ ≈ 0	+ ≈ 0
Total gain:	+55,000	+505,000

Table 2

Definitions of the variables

Variable	Description
Variables related to compensation	
SALARY	CEO's annual salary ($)
BONUS	CEO's annual cash bonus ($)
OPT	Option value, computed based on Black-Scholes formula ($)
RST	Restricted stock fair value ($)
OPTPR	Black-Scholes option value as percent of total compensation
RSTPR	Restricted stock fair value as percent of total compensation
BONPR	Cash bonus as percent of total compensation
TYPE	Dummy variable for equity compensation mix; equals 1 if the total value of stock options is greater that the total value of restricted stock
Variables related to R&D investment	
RD	Annual R&D expenditures, scaled by the market value of the firm
RD_I	Dummy variable for R&D intensity; equals 1 if R&D expenditures divided by the annual sales is greater than 5% (R&D intensive firm)
Variables related to executive ownership and CEO specific characteristics	
OWNCEO	Percentage of firm's equity held by the CEO
AGE	CEO's age
CHAIR	Dummy for CEO-CHAIR duality; equals 1 if the CEO is also chair of the board
TENURE	CEO's tenure - time since the CEO held the position in the firm
Variables related to firm's financial indicators	
SIZE	log (total assets)
CASH	Liquidity constraint, computed as net cash flow in the corresponding year divided by the market value of the firm
DEBT	Agency cost of debt, computed as ratio of book value of long term debt divided by the market value of equity
MTB	Market to book ratio; measure investment opportunities
MTB_LAG	Market to book ratio for year 2002

Table 3

Marginal effects estimates from a bivariate probit model

	Dependent variables					
	RD I			TYPE		
Independent variables	Predicted sign	Marginal effect	Standard error	Predicted sign	Marginal effect	Standard error
TYPE	+	0.5860	0.01886***			
RD I				+	0.5865	0.0190***
OWNCEO	+	0.0059	0.00297**	-	-0.0074	0.00304**
SIZE	+/-	-0.0080	0.0105	+	0.0092	0.0104
CASH	+	-0.8683	0.17131***	-	0.6397	0.0030***
DEBT	-	-0.0548	0.01963***	-	-0.0304	0.0136**
MTB	+	0.0192	0.00556***			
MTB LAG				+	-0.0170	0.0049***
AGE	-	-0.0060	0.00305**	+	0.0063	0.0030**
BONPR	-	-0.0745	0.02152**			
TENURE	+	0.0011	0.0027	-	-0.0007	0.0027
CHAIR	+	0.1079	0.0819	-	-0.1141	0.0744*
Number of observations:	764					
Wald test of exogeneity:						
Wald χ^2 (d.f.)	35 (2)					
p-value	0.000					

***Significant at the 0.01 level

**Significant at the 0.05 level

*Significant at the 0.1 level

Notes

(1) When the stock price is below exercise price, the option has zero payoff because the manager has no incentive to exercise the option.

(2) R&D intensity, computed as the ratio of R&D expenditures to annual sales is a measure recognized by two of the most relevant research and development authorities in the world. The first is the National Science Foundation, an independent agency of the federal government that promotes research and education in science and engineering. The second is the R\&D Global Scoreboard publication, published by the Department for Innovation, Universities and Skills and the Department for Business, Enterprise and Regulatory Reform and represents a leading source of information and analysis for the world's top R&D active companies both in the UK and globally. The R&D Scoreboard classifies companies into categories of R&D intensity based on annual evidence on R&D expenditures, market cap, sales and other key indicators. According to this publication, a company is "R&D vigorous" if it has R\&D intensity of at least 4.5%. As the companies in this study belong to both high-tech and non high-tech sectors, we can also used 5% as the benchmark for R\&D intensity. Therefore a firm was classified as R\&D intensive if R&D spending as a percentage of annual sales was greater than 5 percent.

(3) Compensation committees usually determine cash bonus awards at the end of the fiscal year while they often grant stock nd options before the end of the fiscal year.

(4) It is also called "the horizon problem" n studies like Cheng (2004) or Yermack (1995).

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Crisis and Dialectics of some Fundamental Economic Relations

▪

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Abstract. *The phenomenology of crisis is one of the most complex tasks that economics undertook and undertakes to discern. Crisis is not a new phenomenon. As a cycle sequence, either long or short, it entered the "normality" of the economic dynamics. The big ones, like the one in '29-'33 and the current one, escape this register. Their width, development and consequences make them special phenomena. In explaining them, thousands of pages were consumed. The fact they reoccur raises tormenting questions. The attempts to answer these questions followed either a technical line of one supported by the "human nature". As we use the first variant, we shall try to tackle this topical issue called crisis from the perspective of the correlations existing between economic variables. If when operating normally economy may be in extremis associated to a Newtonian mechanics, crisis changes things.*

Keywords: crisis; Keynes; market; state; USA; the American paradox; demand; supply; economic policy.

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JEL Codes: E12, E44, E60, N10.
REL Codes: 1F, 8A.

1. Economic dynamics according to the orthodox theory

Even if a picture of economics as a giant pendulum oscillating between demand and supply is, under the keen eye of the critics, given bad press and accused of simplicity and narrow economicism, in crisis times it pops up and obstinately troubles the deep waters. At least in the necessary endeavor of feeling for solutions and ways to get out of the mess, serious analysis cannot avoid the fundamental correlation of any functional economy, like the correlation between demand and supply.

The "mystery" of effective demand as inferred by the classical Malthus and later fructified by Keynes as well as that of the supply, in the beginning theorized – in so far as a manufacturer with a bias for tuition could – by J. B. Say and used centuries later by Laffer, Gilder, Ture or Winniski to support the doctrine of the supply in the 80's, reactivates and manifestly emerges in times of economic crisis. Demand and supply do not plenary take hold of the economic game. There is distribution and maybe redistribution going in-between them. Only that, to enable redistribution, the economic thinking and practice should first be productive. That means that it is important to produce because "In the supply, the demand is implicit" as G. Gilder said (1981 apud Baslé, 1988, p. 346) catching the essence of Say's "*Law of markets*". He found that it was logical to happen that way in the 80's, when the world economy faced the threat of zero growth. By investing and producing, we pay wages and wages mean potential demand. We need first of all the lake, frogs will sooner or later come, anyway. That was a logic that worked, yielded results and launched the economy of the initiators and of others who resonated to their ideas on an ascending track. Yet, in the same space, in other times, a different logic also worked – that based on the initial impulse of demand. The specific character of the 29'-33's crisis claims it: the excess of production should have been reabsorbed by an excess of demand. And it should have happened as the fundamental target seemed not to have been the demand or the supply, but jobs. It is the reason for which Keynes felt entitled to think that in order to "*... justify a certain employment volume, there should be a volume of current investments large enough to absorb the excess of total production over the amount that the collectivity wishes to consume at the given level of employment. Because if this volume of investments does not exist, the receipts of the entrepreneurs will be lower than those necessary to determine them to provide that level of employment. Hence, it results that at a given rise of what we call collectivity's bias for consumption, the equilibrium of employment, that is the level at which the entrepreneurs do not have any reason to rise or to cut employment, will depend on the volume of current investments. In its turn, the volume of current investments will depend on what we call the drive to invest and the drive to invest depends...on the relation between the curve of the marginal efficiency of capital and the rates of interest as levied upon loans with different deadlines and risks*" (Keynes, 1970, p. 64).

We shall not comment this ample quote from Keynes, essence of his general theory on employment. We shall let his logic reveal itself by comparing his theory to the one of the theoreticians of supply. Yet we shall retain the key words, as landmarks of his theory bone structure: volume of employment, volume of and drive for investments, excess of production, entrepreneurs' receipts, level of and bias for consumption, equilibrium of employment, efficiency of capital (profit rate), interest rate, deadlines and risks.

We carry it a little bit further providing you with another quote that synthesized another doctrine as aforesaid that of the supply, as Norman Ture put it: "*By definition, global demand is the sum of acquisitions of any kind performed by all entities (administration, enterprises, households etc.). By definition, these expenses should correspond to the level of global income that, in its turn, should always be equal to the value of global production. And production varies only at the extent to which the employed resources vary or the intensity or efficiency of their use varies. To exert a first-rank effect on the income, the action of the state should consequently alter directly the quantity or the efficiency of the resources used in production. But the action of the state itself cannot change the global quantity of the productive resources available in economy and neither their productivity. Variations of the quality of productive resources allotted to production occur only if the real compensation for their use, that is the real price per product unit, is varied*" (Ture apud Raboy, 1984, pp. 15-16). Based on the same method, we extract from this quote the keywords: global demand, global income, employed resources, efficiency of resources used, real price of resources used, and action of the state.

The two quotes are illustrative; they show the hard core of the two doctrines that embossed, by their force, the economic and social landscape of the 20th century. Called to solve crisis problems, they got different colors depending on their different targets: the Keynesian therapy had to fight against unemployment; the supply doctrine therapy had to fight against inflation.

Apart from the differentiating note, there is a common space that links them. It is here that we find the main relations between the high variables of an economic mechanism. In a relation of circular and dialectic causality, this means that:

- All productions must be met by consumption. The synthesis of this relation is illustrated by the supply-demand ratio. Consumption, which is objectively continuous, needs production, also continuous. The quantitative, structural-qualitative or temporal lack of correlation between the two acts can be synonymous with crisis. The temporal overlap excludes the pre-eminence of any of the two components of the above-mentioned ratio. Despite all these, a Norman Ture finds arguments to show that global demand is nothing but a production reflex, one mediated by prices. Thus, it seems logical for him to be in favor of "*first production, then supply*".
- We can get from production to consumption with the help of distribution and redistribution. This involves an immense amount of sale-purchase activities. Sale-purchase is in direct relationship with the level of income and, consequently, with the

level of employment. The supply-demand ratio and the balanced price obtained as a measure of the tension of this ratio are directly related to the occupational structure. Economic balance without social balance cannot work.

- The occupation volume depends on the production volume and structure and on the possibility that it be demanded and sold with maximum profit.
- The idea of profit compels us to notice the fact that only a part of the production outcome is used for consumption, whereas the other part is employed for development.
- The road towards development also passes through saving and investments; through an investment volume that is "*large enough to absorb the surplus of total production over the quantity that the collectivity whishes to consume at the given level of employment*" (Keynes, Ibidem).
- The stimulation of investments is essential for economic dynamics. It is under the incidence of the expected profit rate and of the interest rate.
- The expected profit rate depends on the state of the economy and on the investment perspectives. Here we may include: capital quantity and quality, social and professional structure of the population and its dynamism, political and social atmosphere, quality of the know-how, "*situation of crediting*" (confidence in the institutions that grant loans), speculative instinct, confidence in general.
- For Keynes, the interest rate is "a reward for giving up liquidity for a certain time period; an essential tool of monetary policy, for Laffer, Ture, etc. In both cases, the interest rate must be below the profit rate in order to be able to stimulate investments. The idea of "expensive money", proposed by monetary specialists, present in the structure of the doctrine of supply, makes sense as long as, while fighting inflation, one does not affect the lack of equality that maintains economic dynamics per se: interest rate < profit rate. This objective can be achieved via a credit policy or by increasing (via emission) the quantity of cash.
- The investments-production-employment relation is governed by the multiplication and acceleration effect.
- When current investments entirely absorb a part of what remained apart from the part that the collectivity used for consumption, global demand equals global supply. For traditionalists and partly for neoclassics, the equality of this ratio coincided with the full employment of the workforce. For Keynes and the supporters of supply, this is purely random. For this to be true, all the savings (S) must be automatically transformed into investments (I). Or, between S and I there might occur various circumstances that might question the automatism of equality. Thus, the insufficiency of global demand (C+I) can stop the employment process before reaching the level of complete usage and before unemployment can coexist with abundance.
- For Keynes, consumption depends on income and on the psychological factors that define behavior in relation to consumption; the supporters of supply (under the influence of the philosophy of M. Friedman) consider that consumption depends on permanent income.
- The path from income to consumption is scattered with influences of: the price

level, the valorization rate of the value of the capital, the interest rate, the purchase power of money, tax policy, etc.

- Keynes considers that the volume and efficiency of the utilization of resources can be influenced by the intervention of the state; this can only happen with the help of market prices, according to the supporters of the supply theory.

- Among the components of the economic mechanism, the treasury, the currency and the budget guide us towards the normative. They can give shape to and establish trajectories. According to Keynes, currency plays an active role, and the critique of the "Say Law" is also directed towards the alleged neutrality of money in a game where all products will eventually find a destination. A supporter of state intervention, he transforms the increase of taxes and public expenses into a strong point of the anti-crisis policy. Just as the gold standard is considered a barbarian relic, budgetary equilibrium is a dogma of economic classicism; it is the very deficit that can turn into a source of financing. Liberals such as Laffer, Gilder and Ture see the increase of taxes as an assault upon supply and implicitly, upon profit. Less tax regulation does not automatically mean inflation as long as the emission of currency is kept under control and the price of the loan (the interest rate) can be accessible only for efficient entities. The way he sees it, taxes, as well as public expenses are harmful to production. Even if they generate jobs, behind them there is the weakest guarantor of efficiency – the state; private entities will always find initiatives with better results for using such resources.

2. Economic mechanics in times of crisis

If when operating normally economy may be in extremis associated to a Newtonian mechanics, crisis changes things.

The conclusions drawn based on the two types of representative economic policy illustrate that economy, in general, has a "neutral" component, a part called *mechanism* or *system*, which, apart from all normative acts, has its own laws. The breaking of a relation inside this mechanism leads either to delays or to interruptions. This mechanism is "*oiled*" by the competitive market. Its mechanism is not perfect. Occasionally there appear "*diseases*". In order to "heal" or "relieve" them, certain normative acts may be necessary. Among them, inflation and unemployment proved to be, in the last century, the unwanted but feared and permanent companions of economic evolution. Their stopping involved a series of special policies, based either on the stimulation of demand or on the encouragement of supply. Anyhow, only one of these diseases has not been and is not associated to crisis; not even in correlation, under the form of stagflation, have they questioned the operation of the mechanism in its intimate structures.

A crisis like the one in '29-'33 or 2007-200? changes things. Most correlations break; other suffer, and the system, as a whole, "breaks". The analysts of the current crisis have not established a certain diagnosis; they have not defined the greatest evil so that they subsequently find solutions to it. Nevertheless, the same analyses outline serious changes in the normal operation of economy (Easterly et al., 2000). Some are related to the intimate nature of a mechanism that received a blow in its very engines; others concern the relation between globalization and existent economic nationalist policies; other important changes are the ones generated by the position and rank of the USA in the global economy, etc.

The comparative analysis of the two significant doctrinarian systems that led either to overcoming of the '29-'33 crisis, to "*thirty years of glory*", of constant economic growth or to the generation of the largest world economy threatened by zero growth leads to the conclusion that the state of balance can be seen as a fundamental equation between savings and investments (S=I). Fundamentally, the current crisis is synonymous to severe imbalances at this level; and one of these imbalances was generated by and on the territory of credit money.

The equation in itself reminds us that the dynamics of an economy is formed by transforming the saved income into investments. As a standard, S belongs to the nominal economy and I to the real one; S represents a surplus above consumption, which can bring additional income and new jobs if it is transformed into I. Even from this standard perspective, the S=I equality is not achieved without difficulties. The characters that animate S are not always the same characters that make investments. Individuals, families without entrepreneurial predilections do not make direct investments; they choose a devious trajectory, they deposit the money at commercial banks, insurance companies, etc. Only some of them build houses, purchase equipment for modernization works, etc. Investments can also be thoroughly planned, whereas savings can only be approximated; those resulting from the accounting decrease of expenses from proceeds, ex pot, can be or not equal with the ones estimated ex ante, meant to be transformed into investments. The time factor has a role, too. Although the standard hypothesis argues that the two values always mirror one another and adjust simultaneously, this automatism is nothing but a supposition. Moreover, the two variables have a different dynamics although they are under the incidence of the same group of factors: exchange rate, prices, interest rate, level of economic activity, etc. Their circuit relationship complicates things even more. Thus, an increase of the predilection towards saving can create a potential investment opportunity but, as a part of the same whole, it reduces the part meant for consumption. The reduction of the consumption demand may be a means for reducing the current account deficit, which implies at the same time a reduction of markets for companies and, consequently, a reduction of their activity. The reduction of the activity leads to the diminution of the profit share and therefore to the reduction of savings. Budgetary proceeds, as well as public expenses, social assistance, etc., also suffer from the reduction of the activity of corporations.

A balanced economic policy can keep under control and compensate the contradictory effects of these relations. In times of crisis it seems that this is no longer possible; the meaning, as well as the nature of the fundamental correlation (S=I) that generates everything else are distorted.

Actually, what happens in times of crisis is a consequence of the misrepresentation of these relations during the economic boom. During the period right before the crisis, S is artificially "inflated". Easy and cheap credits are attractive. The mass of passive depositors becomes the mass of active investors. The possibility of living without saving transforms into the possibility of gaining, via speculation, by means of massive, mass loans. This would not be a problem if S turned into I on the territory of real economy. Or it is the overwhelming proportion of investments in the territory of nominal economy that produces "*poisonous mushrooms*". Even when one invests in something concrete and palpable, the speculative aspect, related to nominal economy, plays a role too. Buying five houses when you only need one illustrates this type of reality. The explosion is accelerated by the embezzlement and misrepresentation of I. Via a dangerous process of automation, investment becomes a meeting area for demand and supply, representing millions of sales-purchase activities that belong to the nominal economy. You borrow (or save) in the nominal economy in order to invest in the same perimeter. You save in the nominal economy and you "look at the money" because in a world which dilutes all values, you no longer have the courage of transforming it in a real asset (see Phelps, 2009). You offer guarantees in order for someone from the same playfield to take over, share the risks, repackage "*the product*" and end up with *mortgage backed securities* (MBS). Allegedly meant to transform mortgage loans in bonds that can be transacted and with the intent of taking the risk out of the banking system, *special investment vehicles* (SIV) have been invented, virtual banks that issue bonds in a relaxed legislative environment under the protection of governmental or quasi-governmental agencies such as Fannie Mae and Freddie Mach. By developing the risk appetite to such an extent that subprime credits became something "natural", by engaging the cascade mechanism of allotting MBSs in reimbursement and risk installments, the environment has eventually created the last "babies" – *collateralized debt obligations* (CDO), with extremely alluring profitability and supported by MBSs with a high degree of risk. Everything happened on the territory of nominal economy. The connection with the world of real assets and services remained only contingent. S defined itself in relation to I in an autonomous territory, that of the world of money. On this territory collateralized debt obligations turned out to be bubbles, jobs were created without support and credit money, under its most extravagant and sophisticate forms, became a standard for measuring illusions.

The process whose final result is the so-called "*synthetic products*" has increasingly become widespread and fast-moving. Economic globalization did not miss the opportunity of such phenomenon. No "*serious*" financial institution closed down because of the two-digit profit rates. The bubbles multiplied and entered their financial statements. High return rates defeated the "*autochthonous prejudice*" of speculative capital. After World War Two, the S=I ratio was generally limited to national economies. Nowadays, even this ratio became a commodity. The borders of national economies are, *de jure,* recognized. It is at this very level that the line is drawn and the balance of payments, the trade balance, the budget, the capital account, etc. are analyzed. *De facto*, all these tolls opened up to the world. Therefore, the budget balance may be different from the current account balance and the budget and current account deficits no longer make up a causality relation. And, by virtue of the same full openness to the world, the opposition between the nominal and the real levels acquires special meaning. Historically speaking, money was invented to measure values, which is a function that may be achieved ideally, as its actual presence next to the assets whose value it expresses is not necessary. It only needs to exist in society. Given these new circumstances, those of a globalized economy, one may ask: "*what society*"? And the answer would be the "*open society*", and this time not in a Popperian sense, but in a world economy sense. "*The world assets*" are expressed by the "*world money*". And this, without achieving a strict parallelism between the mirror and the reflected object. Giving up the "*autochthonous prejudice*", accused of mercantilism, makes it possible for the "*world money*" to be concentrated in certain locations, while others are "*emptied*", and this does not necessarily reflect a symmetrical distribution of assets. The very existence of such locations with the highest concentration of money triggered the development and multiplication of an unreal world, one of money earned through the money and for the money.

Although national borders matter (and it is well known that the same asset may have different prices in different countries), a *Pareto optimum of the world* conceived in such circumstances would have something to say. This would enable us to understand why it is so important to control the locations with the highest concentrations of money; why and how it is that the international institutions having these competences manage to get to know a national economy better than the ones inside it, although they are outsiders; how and where decisions are made and what are their outcome; how true and, at the same time, how sadistic statements such as "*The world's checkbook should also have a zero balance*" or "*Exports should naturally equal imports worldwide, therefore the consolidated current account balance is always zero*" (Greenspan, 2008, p. 352 and 354, respectively) are, as long as the world's global demand sorely meets the world's global supply, crushing some and raising others.

National economies have never remained within their own borders and ignored what was beyond them. It was neither possible, nor advisable. World economy has always been a network of relations, or, more specifically, a system made up of millions of contracts. This wide network also includes contractual relations between individuals, households, companies, public entities, etc. Given this texture and from the viewpoint of the same Pareto optimum, it is hard to conceive that one is hardly managing while another is thriving. Evil spreads just like good does, asymmetrically and unevenly, but without omitting anyone. The only difference is the seriousness of its outcome. If a small company or a household goes bankrupt, evil may be “*localized*”; when the source of evil is a big corporation or a big economy, the shock is generalized; no one escapes it. Relying on a simplistic logical thinking, one may draw the conclusion that, the more “*primitive*” an economy, the less involved in the international texture of sale-purchase input-output contracts, the less it is exposed to the crisis shock. Reality, however, does not support such an assumption. The crisis forgot no one, not even the least developed ones; on the contrary.

Within this game that stopped, freezing or shattering fundamental relations, upsetting judgments and turning standard theory into a joke, the main role is played by the world’s first economy. At times of deep crisis, and this happens for the second time, America proves to be both the country with the most attractive assets in the world and the bubble producing “*bottle*”. It is therefore only normal that a country that scrupulously affords (“*I would place the USA’s current account at the end of the list*”, says A. Greenspan, Ibidem, p. 351) endless indebtedness, without worrying that its currency may fall, a country that filled the world with Eurodollars and Asia dollars without being concerned that its commercial deficits mean as many advantages for China, Japan, Germany, France, England, Saudi Arabia, etc., a country whose national currency still holds a significant power on the international cash market even when its large corporations or its economy as a whole is shattered to the very grounds, and finally, a country that sends its currency even in the foreign currency reserves of its own creditors, should raise questions about its role and place in spreading good and evil in the world. The crisis will pass and nobody will be able to change its status. This is rather unlikely, since the big international financial institutions are nothing but appendices to the American economic politics. One thing is achievable, that *bancor*, a composite currency that Keynes was dreaming about stimulated by Bretton Woods, which may be imposed by a combined international effort. Otherwise, the “*American paradox*” will continue to produce its effects. Although it is responsible for two big recessions, America, due to its extremely high return rates, will continue to attract a huge demand for its assets; it will remain the “*basket*” where everybody hurries to place their “*eggs*”, which, at the end of another century, will noisily break and drown the world again in a universal “*omelet*”; and it will continue to defied us, attracting us through optimistic opportunities and expectations, even in its darkest hour. And above all, the international financial institutions will help those hit by the crisis by offering American dollars (Roubini&Setzer, 2004). The result is a null game, which is both defying and ruthless, and at the same time extremely attractive: USA deficit = surplus of its business partners = the savings of these countries expressed in dollars.

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The Cluster Association – a Form of Business Development

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Abstract. *In the context of our future development and integration into the European Union, the organizations are searching for new, attractive and advantageous solutions and ways of development. Most frequently they succeed in achieving their goals, a proof being their numerous innovative, original ideas which they put into practice and about which mass media keep us informed. In the global competition for markets, there is a need of strength and power. Therefore, the idea of "cluster" associations of organizations which, on the one hand, have common interests and, on the other hand, ensure the success of certain endeavors for society is among those actions initiated by firms in order to ensure the power that we have mentioned and a very advantageous position in the contemporary competitional frame.*

Keywords: simultaneous equations models; public health system; reform.

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JEL Codes: M31.
REL Codes: 14G.

I. Considerations about clusters

A cluster is a mechanism that intercorrelates the component firms between them at a high level, transforming them in an integrated system on the competitional market and reacting as a single competitor.

We notice that each and every firm brings to the association what represents its best, undertakes activities and attributions of the *cluster* strategy which are realized at optimum parameters, but, at the same time, is preoccupied by its own interests. Such an interest, for example, can be the wages, the professional improvement of its employees and finally stopping the migration of the working force and eliminating the problem of the lack of personnel.

A cluster means a network of firms which use all forms of differentiating knowledge considered both key resources and key products. The focus lies on organizational learning which is at the basis of functioning statute and regulations.

The new entity provides a series of advantages such as:

- the complementarity of the network;
- the diversity of the network;
- intense interpenetration;
- the development of a cooperation culture;
- flexible organization;
- wages improvement;
- cooperation and competition;
- geographical cluster in certain area;
- various specializations reunited by interests and technology.

The *cluster* confers to the economic, social and administrative medium in which it functions the advantage of important works of general interest, whose chances grow due to collective support.

Michael Porter, an American specialist, has defined clusters as being a geographic concentration of interconnected institutions and companies in a certain field. Clusters comprise a group of related industries and other entities important from the competitive point of view. For example, these include suppliers of specialized inputs, such as components, vehicles and services or suppliers of specialized infrastructure. Many times, clusters extend downstream towards various distribution channels and clients and sidewise towards producers of complementary goods and related industries through qualifications, technologies or common inputs. Finally, clusters include governmental and other types of institutions such as universities, agencies of standardization, think tanks, and suppliers of specialized instruction, education, information, research and technical support (The Group of Applied Economy, www.gea.org.ro). In other words, the partnerships are not only private, but also public and private.

Clusters can be extended beyond a limited traditional geographical area, existing the possibility that the barriers generated by distances and borders to be surpassed. Thus, we identify the advantage of national or international cooperation between firms and states. The idea that comes up is that an economic group, a geographical concentration or a network of firms in a certain field of activity or geographic area decide upon a mutual effort of cooperation for the lasting development of that sector.

If an American, a teacher of business administration at Harvard Business School, respectively Michael Porter, coming from the most developed part of the world enlivened the idea of competitivity between firms together with a better life standard of the population, then Romania had better take into consideration with all responsibility this manner of approaching business and put it into practice, the more so as the Romanian potential is known to be reduced, but at the same time that "The more, the better!". Another reason is given by the necessity to cross the period of economic and financial crisis we live today, in which the whole model of Romanian economic development after 2000 must be revised, a vulnerable model lying too much on external capital. This situation leads to insecurity and to the raising of current account deficit, to a huge eternal debt, as compared to the national currency reserves and also to other undesirable consequences which have already been noticed: the fall of national currency, unemployment, etc.

II. Romanian experience

The idea of "cluster" is an absolute novelty neither in Europe nor in Romania, but we can say it is of present interest. We consider that in our country the paternity of this idea can be ascribed to Virgil Madgearu, the great forerunner of economic thinking. The interest in developing the internal market has mainly manifested itself after the Unity of 1918, which represented the climax of the integration of the Romanian inheritance within a unitary functional organism. The industrialization process characteristic to the third and fourth decades of the XX[th] century has primarily taken into account the localization of the industrial branches in conformity with the raw material resources, the processing industry being concentrated in the neighborhood of ore, coal or salt mines, quarries, oil fields, natural gas, forests.

In his work entitled "The Evolution of the Romanian Economy after the World War" (Madgearu, 1995, pp. 97-98), the economy teacher Virgil Madgearu identifies 8 regions of industrial development in Romania at that time. These are:

1. The region of Prahova Valley has developed due to the existence of oil, quarries, and forests. These conditions have determined the establishment of oil distilleries as well as factories of cement, lime, plaster and paper.
2. Reșița Region due to the richness of the subsoil in iron ore and manganese coal and wood is characterized by the development of the metallurgical and siderurgical industries.
3. Turda Region rich in reserves of methane gas, salt, gold and silver ore, copper and lead, has determined the development of specific industries in this region: factories of cement, lime, bricks, tiles, porcelain, glass as well as of some industries of staple goods: alimentary, textile and leather goods industries.
4. Baia Mare Region has allowed the development of the industry due to the presence of gold, silver, copper, lead and zinc ore. The branches of chemical industry have been established on the basis of these resources.
5. Hunedoara Region in which the siderurgical industry has developed due to the iron ore, the forests (for manganese) and the waterfalls.

6. Ferdinand and Nădrag Region still offered the possibility of developing the siderurgical and mechanical-siderurgical industries for the production of pig iron and steel using iron ore from Teliuc and pig iron from Călan, even if it was situated farther from the points of supply with raw material and fuel.

7. Cisnădie Region where the old domestic industry constituted the qualified basis for the textile industry which then extended comprising the Sibiu and Tălmaciu regions.

8. Piatra Neamț, Bacău and Buhuși Region constituted an adequate place for the textile industry determined by the specialized working force.

These industrial concentrations identified almost a century ago have afterwards prove their viability, but in a socialist economy. Nowadays, we find them in the industrial scenery, some of them active, others falling or latent, but no matter their nature, we keep in mind the fact that the idea of development concentrated on resources and regional forces was sustainable.

Such a solution deserves to be taken into consideration in a bigger proportion by the firms in our country and deserves to be rendered profitable this time on the basis of other conditions and resources, but in a context of unity between the Romanian firms.

We can very well be inspired from the experience of some countries such as USA, France, Italy, Finland or we can borrow some of the enthusiastic actions of Hungary or even the Moldavian Republic.

The association becomes a necessity in order to face the intensification of competition on diverse local, national and international markets. It is also a good motivation to finish far-reaching projects (for example gigantic constructions, highways, tourist centers, etc.) which require huge expenses, manpower, training and work quality. From organizational point of view, we mention that there are a standard number of firms belonging to cluster, but this may have or not a distinctive organization and a manager or not.

The unity of clusters is highly appreciated by the European Union too. The European officials recommend this idea by means of various channels (for example, by means of the eight Agencies of Regional Development), from the same reasons: they have the power to support progress; they can be innovative, concentrate business and thus, strengthen firms both from the inside and from the outside that is the competition on the international market. West ARD is already an associated member of BelCAR network – an European cluster network in automotive system, which is, in fact, a project coordinated by the Economic Development Agency of Stuttgart Region, destined to some European regions which have already had clusters or will organize them.

The European Union obviously supported the development of clusters in Central and Eastern Europe ever since UE-15, reflecting the tendency of decentralizing the areal production characterized by lower costs (manual labour) and more potential towards flexibility. Later on, in 2005, an international conference named “To a Knowledge Based Society” was held, with the aim of discovering ways of strengthening the potential of all regions in the new ten European Union member countries, but also in the other two countries which were to adhere, Romania and Bulgaria. One of the conference premises was to organize a modern, innovative cluster type association to include business organizations, research units, universities, institutions of public administration.

Romania can not brag about a special success or a great progress in this direction, even if the idea was on the agenda of all governments since 1990 until present day. But since the three conditions of success for clusters are only partially fulfilled, we are at the beginning of our journey. The three conditions that we refer to are:

- the power transfer towards the local authorities;
- equal access to public information;
- the close relationship between economy and the educational system.

We notice that the development of clusters has political connotations both in the context of globalization and the integration of Romania into the European Union, too.

Until now, five important studies based on different methodologies have been elaborated and these lead to the identification of the following potential clusters:

1. In 1998, CISA (The International Centre for Entreprenorial Studies) in Bucharest identified the existence of three incipient forms of non-functional clusters in the production of software (Bucharest), in the naval industry (Constanța) and in the wood industry (Brașov, Caraș-Severin, Hunedoara) (CISA, 1998).

2. In 1999, Marco Riccardo Ferrari, assistant researcher for the Economic Department of the Bocconi University in Milan, also identified three non-functional "proto-clusters" in the wood industry (Prahova), the textile industry (Galați) and the pottery industry (Alba) (Ferrari, 1999).

3. In 1999, Valentin Ionescu applies a different method and identifies two "proto-clusters" in the pottery industry (Alba) and the software industry (Bucharest) (Ionescu). He draws attention upon the idea of "emergent clusters".

4. In 1999-2001, the VICLI project emerges and is developed within the European Programme Interreg II C – CADSES(1), which identified four potential clusters: pottery, wood, typography and the apparatus industry in Harghita.

5. In 2002-2004, the INCLUD project, financed by Interreg III B CADSES (www.includ.net) identified the following domains: the textile industry (Bacău and Timiș), software (Timiș, Cluj, Bucharest), wood, steel components and metallic products (The Central Region), chemistry (Brașov). Besides, two clusters have been selected for a deeper analysis and future support based on the interest of certain partners in the European Union, respectively for textiles at Bacău and wood manufacturing at Mureș.

6. Another research has taken place within the WEID project, financed by the European Commission through Frame Programme 5 (FP5), in 2001-2004 (www.west-est-id.net); this has enhanced possible clusters in sports in the Banat-Crișana region and in the footwear industry in Arad and Timișoara.

7. An interesting idea is that which mentions Timiș county as a potential "industrial district" by its Italian meaning, motivated by the high concentration of

Italian investments in the area (Faculty of Economics - Insubria University, 2000). In the Western Region there is a growing development of the above mentioned concept which is also supported by the fact that a component of The Interreg III C Programme is the elaboration of a management guide of clusters and a cooperation strategy between the European regions and the regional clusters of seven regions.

8. In the CURAS[(2)] program taking place within The Cooperation Agreement between the Romanian and the Flamish governments and implemented between 2003-2004 a functional cluster resulted in the automobile sector, auto components, localized in Argeș.

III. How does a cluster come into being and develop?

The following compulsory steps have been identified:

1. the creation of the cluster based on different circumstances, for example, the existence of raw material, technologies, knowledge, management, needs and favorable conditions that offer development perspectives and lead to a possible cooperation between firms at a certain moment in the future. The first step of this kind is always made by small firms which want to develop their field of activity and their position on the market.

2. educational institutions, business associations etc. join the growing cluster;

3. gradually, the visibility, the prestige and the attractiveness of the cluster develops and thus it becomes a mature organization;

4. since nobody escapes decline, an innovation, a renewal brought by a cluster is sometimes necessary. The cluster may become part of a bigger one (regional, national etc.). The motivation for such decisions resides in the situation of technologies: economic, social, administrative, institutional or even cultural.

We can be witnesses to the development of a Romanian successful model – the cluster, competitive agglomeration. But on the other hand this thing may not actually happen. In favour of the idea of the failure of the project in our country we mention the comparison with the free zones introduced shortly after the Revolution and which at a theoretical level have been appreciated by both specialists and outsiders being recommended as a solution for economic and social development. In reality, neither the legislation nor the enthusiasms have supported the free zones, these being actually little stars without brightness on the firmament of the national economy.

Romania has to define its industrial orientation towards the perspective that it was offered by the adherence to the European Union.

In addition, it has to abandon the comparatively fragile advantage offered by a cheap manual labour and head to a different position on the external markets: medium and high price and an appropriate to high standards powerful brand image.

Clusters are adequate means for business cooperation, commercial information, communication, legislative advancy. There are mediums for a common marketing, a competent sharing of activities, resources, ideas, splitting of expenses and thus of results.

Without applying specialized methods, but reviewing the events that have recently taken place in Romania, we could say that there are still possibilities of creating clusters in other sectors too, such as:

- constructions, due to the 2006 signing of the Social Sectorial Agreement for Constructions for 2007-2009;
- infrastructure (roads and especially highways), motivated by the acute necessity of building these access roads for which huge sums of money are spent;
- the wine industry on an extremely competitive market where all climate factors play a major role;
- tourism under the circumstances in which the development rhythm of this sector is far from that of other European states;
- ecological agricultural products, required more and more and which many states that are neighbors to our country concentrate upon;
- the transfrontier cooperation, in this way the interstatal relationships can be founded on different basis etc.

The banking system heads its strategies according to the distribution of economic clusters, the map of credits for investments and development following the map of clusters.

The acknowledgement of the fact that we have a real alternative for the development of Romania becomes evident together with the approval of the Operational Sectorial Plan – The Growth of the Economic Competitivity – Financing the IMMs out of structural funds between 2007-2013.

Created as a response to the first priority of the National Plan for Development 2007-2013 (The growth of economic competitivity and development based on knowledge) and to the second priority within the National Strategic Frame of Reference (The growth of economic competitivity on the long term) this POS can offer financing to support and integrate enterprises in chains of suppliers and clusters.

As eligible activities, we can mention:

- the cost of the studies for the identification of member companies;
- the evaluation of the cluster viability;
- business meetings and workshops;
- the costs of creating and developing clusters;
- the acquisition of logistic equipment necessary for the functioning of the cluster;
- tangible and intangible means for the functioning of the cluster, lands, buildings, means of transport exclusively;
- the wages of the manager and of the operational personnel of the cluster;
- consulting services before and after the creation of the cluster;
- promotion costs of the cluster and other activities for members and clients;
- business meetings, seminars for members and potential members;
- sectorial/regional market researches.

The conclusion is that the competitive agglomeration, the association of firms both in their own and their mutual interest represents an alternative which the Romanian firms have to seriously take into consideration because the competition is harsh, big firms have already emerged on our market and their survival and development is harder and harder.

The obvious social-economic effect can be expressed by the growth of production and competition of the implied companies and sectors, by the raise of innovative potential, the stimulation of new companies, regional economic development, the emergency of new markets, etc.

Some limits and barriers have been noticed as regards this type of cluster association, the most significant being the fear of investing in associations, caused by some previous failures or partners who would like to hold the control, as well as by the fear of sharing profit. In this way, the National Agency of Small and Medium Enterprises – as a representative forum, have increased its intentions of developing the association spirit. The research made by this institution has revealed the fact that most of SME, 70% respectively, develops an isolated business towards the other market actors, an isolation that cannot favour and develop the change of experience and good practice, or cannot lead to solving some difficulties SME confront with in business.

Notes

(1) Virtual Clustering Identification and Dissemination of strategic Territorial Planning Best Practices for Certain Countries of Danubian and Southern Europe.

(2) Clustering and Upgrading Romanian Automative Suppliers.

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The Management of Social Services in the European Union from the Perspective of Global Challenges

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Abstract. *The paper at hand aims at a brief analysis of the social services and the social phenomenon currently happening in many of the Member States (MS) of the European Union (EU) in the context of a more prominent economic crisis and, in the same time, as a result of the augmentation in the workers' migration. Presently, the labor force markets are continuously transforming and adapting to the search of adequate solutions in order to flex the specific activities through the conformation of the social services to the ever growing demand operating on this particular market.*

The conclusions of this study lead to a warning regarding the drastic drop of birth in the context of an increase of the life expectancy, aspects which must be supported through strategic measures and services, carefully delineated by domains and sectors of activity to better identify specific lines of actions through a new approach to the regulation of the labor force employment services on the labor force markets.

Keywords: social services; active life; full employment; social benefices; social inclusion; social flexicurity.

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JEL Codes: F02, F15, F53, F59, H55, O11, O52.
REL Codes: 3D, 10C, 20F.

Introduction

The management of quality social security services in the European Union (EU) is most proficient in the area of employment and unemployment and has a significant influence over the social policies in each Member State (MS) and it also materializes through a strong connection between basic systems of social security and the income assurance systems, with the specified purpose of influencing not only the employed segment of the population (namely, the growth of senior age group workers and the growth of those employed after a period of unemployment), but also the value of the income for the part of the system which is financed by contributions (the modification of transfer incomes where the employment methods are linked to certain benefices of social security – such as exemption from certain taxation because they are subjects to social security benefices). Moreover, it also targets the institutions of the labor market in the form of a rigorous surveillance of the actions dictated by the social protection for the unemployed.

The management in the area of pensions must entail a development of income security after one is no longer part of the labor market through retirement. Each MS must decide on the best and most advantageous pension system, while also taking into consideration the common objectives of the EU and of its own challenges, namely, the process of the aging population and the demographic diminution, from where the necessity results for the MS to coordinate their efforts to reshape the social protection systems for the elderly individuals. In this context, the role of the EU is to progressively uphold the creation of their own policies.

The MS of the EU must create a national plan of action through which they can follow the interventions in different levels: national, regional and local, the measures of fighting poverty and the promotion of social inclusion, each MS having to rapport at an European level the measures they took, thus creating not only an instrument necessary for the exchange in experience, but also a unique model of reducing poverty.

In the health department, the management of services targets the future of elderly care through a greater accessibility, a development of quality services and the financial viability of the health protection systems, accentuating the creation of new national health insurance systems after the models established at the level of the EU.

1. Changes into the management of social services

The 21st century brought a series of changes in the European countries concerning the population social protection systems, through elaborating and adopting new programs of a structured adaptation of the mechanisms of social welfare.

Changes into the pension schemes occur in every MS and the reforms are based on the principle of capitalizing supplementary pensions and the elaboration of compensation mechanisms for the phenomenon which entails the increase in the number of beneficiaries from redistributive systems as a result of the decrease in the number of tax payers in the context of the demographic decrease. In situations such as these, some MS have had to introduce reserve funds to ensure the duration of the PAYG systems.

Concomitantly, with the reform in the redistributive pension systems, a process of finding new methods and programs unfolds, in order to promote active life for individuals in dilemma as for people who are partially work-incapacitated. The new MS legislation is directed to the limitation of access to social benefices (due to a stricter evaluation) and to the creation of active measures that combine the social benefices with the work revenues.

Lately, in MS, we can observe an aging tendency within the population (Table 1), concomitant with an increase in the proportion in the population within the over 60 age group from 15.5% in 1960 to 21.5% in 2000, 29.1% in 2010, respectively. The population group of 0-19 years of age will have recorded in the 1960-2010 timeline a drop of nearly 5 percentages.

Table 1

The population of the EU on age groups (% of the total population), between 1960-2010

	1960	1970	1980	1990	2000	2010
0 – 19	31.7	32.1	30.0	25.5	23.1	16.4
20 – 59	52.8	50.3	52.2	54.7	55.4	54.5
over 60 years	15.5	17.6	17.8	19.8	21.5	29.1

Source: computed by the authors based on the statistic data of Eurostat: Europe in Figures, 2006-2007.

By analyzing the same source (Eurostat, 2006-2007), the conclusion can be easily drawn that for the year 2050 (Table 2): the percentage of the young, under 20 years of age, population will continue to drop; the active population as a percentage from the total population, that had registered up to the year 2000 a slight increase will register a fall, as the birth rate will continue on a decreasing path.

Table 2

The population of the EU on age groups (% of the total population), between 2000-2050

	2000	2010	2020	2030	2040	2050
0 – 19	23.1	21.8	20.7	19.8	19.5	18.9
20 – 59	55.4	54.4	52.4	48.8	47.1	46.3
over 60 yeasrs	21.5	23.7	26.9	31.4	33.4	34.8

Source: computed by the authors based on the statistic data of Eurostat: Europe in Figures, 2006-2007.

Thus we can state that the active population is in inverse ratio with the retirement-eligible population which is continuously growing. This global phenomenon, which is noticeable at a European level also, is experienced in each state, with minor or major variations to the European norm. For example, we can quote Germany, Italy and Sweden, where the percentage of the population over 65 years of age is comparatively bigger to the recorded average in the EU (Eurostat, 2006-2007). In our opinion, the evolution of the demographic indicators in the long run will have a string of negative effects on the income and the expenses of the public social insurance pension systems and also on other public social expenses, such as the labor market, with direct implications over the capital market.

2. The management of pension systems

Statistic data show us that the demographic evolution in Europe requires a reshaping of the social insurance system for pensions. The leading principle of the redistributive pensions system makes so that a active group on the labor market that is dropping steadily can equilibrate a group of the population that has retired from the labor market and which is steadily increasing, all of which leads to numerous problems regarding the systems for elder-aged insurances and also regarding the labor market and family policies.

The reforms already taking effect in the MS cover areas of particular interest: the change of the calculation formula with implications in the rise of the benefice; the reimbursement of insurance schemes funds by increasing the percentage of contributions and/or the introduction of backup funds or consolidating them where they are present.

For some MS, as a general rule, the condition of full occupation is essential for the universal pension insurance systems (Barr et al., 2004) – either there is a common insurance system for employees and freelancers alike (Portugal, Luxembourg), either the two groups are "covered" separate insurance schemes (Belgium, Germany, Spain, France, Italy, Austria), or the entire population is included in an universal system (Denmark, Norway, Sweden), or work-occupied persons are covered by a pension system with correlated incomes, a complementary system to the universal one (Finland). In many countries, in the pension system only the employees in the public sector are included. As a general condition for the having access to the social insurance pensions, the following principles apply: residence, contribution and standard retirement age. The northern countries experience a combination of the first two. The principle of residence is subordinate to universal pensions, while the principle of contribution includes the benefices of the supplementary pension system and the mandatory benefices included in the life standard system. In Norway and Finland there is no direct relation between contribution and benefices (Eurostat, 2005). In Sweden, the principle of contribution is the basis for correlated pensions (with the previous incomes and contributions), and the principle of residence groups around it the guaranteed pensions.

For all types of beneficiaries that are entitled to receive pension, their benefice is at the same universally established level. The increase of the benefices in the social insurance for pensions system depends on the size and the level of collecting contributions.

The funding mechanism requires a clear distinction between the financing sources and the types of funds and, generally, the benefices from the pension social insurance system are financed from funds exclusively made of contributions. The only case of bending this rule has been noticed in Ireland and the Netherlands, where the universal funds are financed from correlated contributions with the gains. The systems that serve to guarantee a minimal life standard are mostly financed from the employee's contribution and that of the employer and sometimes based on taxes. These pension funds are created and organized based on: (i) the pay as you go principle (PAYG); (ii) the accumulation funds principle; (iii) both principles. The PAYG funds are found in all EU states, with the exception of Finland and Sweden, where the contributions are collected by an accumulation fund. As far as the management for the quality of these funds, a reshaping of the pension schemes is necessary, serving as an answer for the better services and the insurance of a decent life standard for the contributing beneficiaries.

3. Challenges for the public pension systems

The aging of the population and the viability of the pension systems are two great challenges for the MS, now and for the years to come. Consequently, the EU, through the policies it promotes, is encouraging MS to reform the pension systems, following three major objectives:

- *Guaranteeing the minimal level which is adequate for pension income* for all beneficiaries, mostly in overcoming the poverty of the elderly individuals. This process requires the introduction of an important instrument in the pension schemes in most MS to insure the safety of the elderly individuals against the risks of poverty. By using this instrument, which implies an investigation among the beneficiaries regarding the correlation between income and necessities, with a direct impact on the income necessary for a decent living on one's own, the work motivation can in some cases be discouraged, mostly among those who are eligible for early retirement.

The impact on the resources of the labor market depend on the number of those who retire from an active life early, and the more people benefit from a pension that has rights calculated based on the analysis of financial resources and that can be combined without restriction with certain earned incomes, the lesser people will be discouraged to retire from the labor market.

Thus, it can be said that, for every MS, the method of investigating financial resources is more likely than not applied to housebound individuals, which leads to a negative implications, as all members that are occupied in this way are confronted with a labor force with weak stimulants on this particular segment and so one of the member of the family can find themselves in the position to not reach the retirement age through an active life.

Therefore, the pension system in the Netherlands can serve as an example for other MS (the European Commission, 2006), in which the universal services have a fixed sum and the minimal pension income is investigated only by comparing it with another pension income, such as the one in Sweden, that has managed to create a public pension system that fulfils both the criterion of adequacy and that of financial stability, as the workers compensate the programmed decrease of replacement rates by exiting the labor market at a much later date. The Dutch pension system has some remarkable results due to the fact that its bases are constituted by an universal public pension with a fixed quantum, associated with other earnings coming from supplementary pensions that cover a rather large percentage from the existing population.

Tackling alternative policies has direct results in insuring that the vast majority of people earn sufficient pension rights to not require collateral services. This requires gaining a high level of coverage for the pension schemes that offer adequate services to pensioners and surviving spouses. The obstacles of employment can also be reduced by not taking into consideration a certain level of income when the resources of an individual are investigated or by reducing the earned income for less than 100% of the calculated service based on an investigation of the financial resources;

- *The financial viability of pension systems.* In the context of demographic aging, long term financial support for the pension system, and its ability to insure adequate quantum will depend on the mobilization of the entire labor force potential and, consequently, on a favorable balance between the active market and the retired segment. The studies show that from the perspective of planning the expenses of the public systems pensions the increasing the retirement age by one year can cover on average approximately 20% of the estimated growth of pension expenses up until 2050.

For the year 2010, the main objective of the EU is to achieve a high rate of employment for people between 55 and 64 years of age and a gradual increase of the average age for retirement out of the labor market. Achieving these objectives requires a large array of measures destined to maintain the employment possibilities of elderly individuals through a system of life-long continuous professional training, through the adaptation of jobs to the needs of elderly individuals as well as through a change in attitude towards prolonging active life.

Presently, the idea that replacing the older generation with a younger one, where one exists on the labor market, should be restrained to the micro level and on short terms has been accepted. The studies on this subject (Holzmann, 2004) show that at a macroeconomic level, restricting the labor force market by renouncing to the elderly individuals does not bode well for the employment perspectives of the young, but it reduces the general level of the work force employment, generating a severe burdening of the social protection system.

Between the years 2001 and 2005, the proportion of the un-occupied elderly population among families remains unchanged in the EU. The only countries where a drop of nearly 3 percentage points (MISSOC, 2007) has been recorded were the Baltic states and Bulgaria. The same source indicates that in 2006 the proportion of young people of work-age in the households nears a significant decrease in the total adult rapport to about 9.5% with slightly larger variations in the MS, from 2.7% in Luxembourg to 16.2% in Great Britain.

To ensure greater financial viability for all the schemes for public pension systems, another major issues among those already enumerated is the inactivity of the group of people with ages between 55 and 64, a rate currently numbering about 17.9% (Eurostat, 2007) from the total population, while the unemployment rate among the same age group in the communities is 42.2%. According to statistic rapports almost half of the inactive individuals in the 55-64 age group or 26.4% of the total population of these ages are retired of activity. This alarming proportion could reach a minimum of 6.5% of Sweden's population in the same age group. The rate is also very high in Belgium, 41.5%, Germany, 4.4% and Italy, 38.7%. The rate of the inactive 55-64 years of age population due to family or personal reasons is particularly high in the MS in the south, in Greece, 20.9% of women; Spain, 20.8%; Italy, 33.6% and Portugal, 16.8% and Luxembourg 59.1% of women. The rate is lower in the northern countries, from 1.6% in Finland and 3.2% in Denmark. The accessibility of social services capable to give liberty to the labor force, especially to women of 50-60 years of age with commitments to their elderly relatives, who are mentally unfit, or to the care of their grandchildren can be an incentive to their participation in the active life on the work force market.

The third major cause of inactivity is illness and invalidity. Around 6.5% of the individuals between 55-64 years of age are inactive because of this – approximately 2.8 million people. This rate is smaller in Ireland –1.4% and Sweden –1.5% and higher in Finland –19.6%, Great Britain – 15.7%, Denmark –14.4% and the Netherlands –11.4%. It would seem these differences do not reflect a different level of health of people living in the same countries, but different institutional agreements (Table 3).

Table 3

Reasons of inactivity

Reasons of inactivity (% of the total population of the same sex and age group)	Total	Women	Men
Illness/Invalidity	6.5	5.8	7.2
Family or personal responsibilities	6.6	12.6	0.6
Pensioners	26.4	25.7	27.2
The impression there is no work available	1.5	2.1	0.9
Other reasons	6.1	10.0	2.1
No reasons	9.5	10.8	8.2
Totally inactive	56.8	67.1	46.1
Unemployed (this does not reflect the rate of unemployment. rather the proportion of unemployed individuals in the total population of the same sex and age group)	2.6	2.0	3.3

Source: computed by the authors based on the statistic data of Eurostat.

- *Adapting to demographic change.* Today, there are 4 people under 65 years to one over 65 in the EU–27, but by 2070 this rapport will drop to two workers paying for one pensioner. Although the percentage of the working population in the EU will drop, estimates show that the level of labor force employment will continue to rise until 2017, due to the large number of women and people over the age of employed pension. Even if Europeans live longer, are healthier and women have equal access to the work force market, the EU must adapt its economic policies based on the new indicators.

The aging population of Europe is an unprecedented challenge. The European Commission (CE) has revealed to the public, in October 2007, an official statement that deals with the necessity of demographic rejuvenation and the integration of immigrants, in order to compensate the demographic losses in the work force market, reminding us that Europe's demographic problems are a "ticking time bomb". Estimates show that until 2050 the rate of Europeans over 80 will triple, and those of ages between 65 and 79 years will constitute a quarter of the population in the EU. The aging tendency of the population has a profound impact on all generations and on most domains of economic and social activity: the labor market, social protection, education, culture, politics. The demographic changes involve the institutions and political strategies enforced in a time when the demographic perspectives were quite different.

As far as the EU is concerned, it is estimated that, starting from the first decade of this millennium, many MS will face a rapid demographic transition. The aging of societies is mainly the result of a drop in the fertility rate and the growth of the life expectancy, which means fewer children and more elderly individuals. While, in order to replenish the population, every fertile woman should bring forth into the world an average of 2.1 babies, in reality, in the EU the average was, in 1999, 1.59 and it reached only 1.52 in 2007. Demographic predictions show that the rate of fertility will remain at a decreased level, while in some countries it may even drop.

Aside from the demographic downfall, changes involve the age group structure of the population. We are dealing, more significantly, with the increase of the population over 65 years of age. This phenomenon is present in all main European regions, in absolute number and also as a percentage in the total population. In the last 50 years, the elderly population (65+) has doubled, from 46 to 112 million, and the proportion in the total population has reached 8% in 1950 and 15.7% in 2007 and it will reach an estimated 17.6% in 2010 (MISSOC, 2008). Presently, Europe has the oldest population in the world.

4. A new concept regarding communitarian social services – flexicurity

The proportions globalization has reached have lead to many of the actors involved redirecting their views on adapting to a more adaptable service and value system, on adopting new methods of organization, improved technologies, all in order to achieve a greater competitiveness. Flexibility in the area of social services has manifested itself as a necessity in the context of a system of connected values, in order to ensure a reconciliation between flexible and the social security on the work force market, on one hand, and achieving a real reform of the European welfare, on the other hand.

Finding a generally accepted solution by all of the EU member states has materialized due to certain social-economic aspects.

- The fast propagation of the economic integration and the increase in international competitiveness.
- Sustainable development of advanced technologies mainly in the communication department.
- The aging of the population combined with an ever decreasing rate of work force occupation with long term implications in maintaining an elevated unemployment rate.

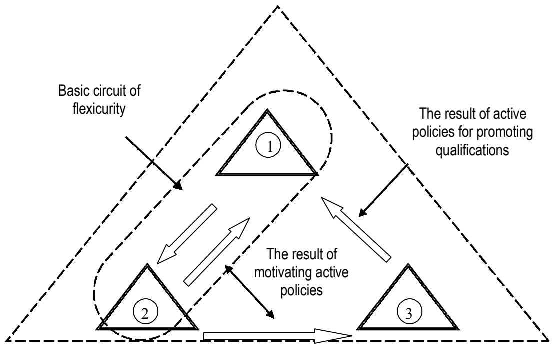
As a consequence of these causes, this concept has arisen from the growing need of flexibility in the work force, of increasing security regarding the employees' requirements, thus allowing a growth of their abilities in order to prevent the fractioning of the work force markets.

Basically, the concept of flexicurity is founded on the principle of non-exclusion of social security services that will instead become complementary and easy to combine. Theoretically, flexicurity can be defined as a way of synchronizing the services and social-economic policies, which can act as a post-deregulation alternative (Keller, Seifert, 2004; Klammer, 2004,2005) or as a liberal point of view of the market economy and the social protection of the welfare state of Scandinavian model (Wilthagen, Tros, 2004) or as a political strategy regarding business on the labor market, viewed as an analytical concept (Tangian, 2004).

The definition given on the basis of the golden Dutch triangle (Madsen, 2006) is concentrated on three directions:

- An increased level of mobility on the liberal labor market by replacing work place security with occupation security;
- A generous social protection system, both for unemployment insurance and for uninsured individuals;
- Allocation of plentiful sums in order to uphold active policies on the labor market.

The results based on this model (Figure 1) have not failed to show, Denmark being one of the only European states where unemployment has dropped with about 7 percentages, while the nominal wage had increased to approximately 5% per year.



Legend: 1 – Flexible labor market; 2 – Generous welfare system; 3 – Permanent active policies of the labor market

Figure 1. *The golden triangle – the Dutch model of flexicurity*

Source: developed by authors after P. K. Madsen, 2006.

4.1. The components of flexibility

a. Flexible and viable contract stipulated agreements that contribute to the regulation of the labor market in the context of the social security component that can be a basic component of welfare from the perspective of decomodification (Espring-Andersen, 1999)

b. Global life long education strategies that are meant to contribute to an elevated degree of occupation of the labor force through the decrease of long term unemployment. This contributes to a high level of efficiency only if workers adapt to change by continuous education, which can be viewed as the key to economic productivity.

c. Efficient active policies on the labor market, which can attain a balance between the flexibility and the security of the labor force occupation that offsets the reducing risks of a segmentary labor market by supporting the keeping of work places (the European Commission, 2006), to which the respective market services costs are associated with low unemployment.

d. Modern social security systems that can be essential to compensate the negative consequences during the loss of employment, but that can, in time, have negative effects regarding the intensification of activities relating to finding a job, an effect that can be compensated through a set of strategies that can coordinate the social services-active measures on the labor market mechanism.

Conclusions

Taking all this into consideration, we are of the opinion that the EU has to harmonize the social security services for employed workers, functionaries, independent workers, agriculture workers and especially public workers. Presently, a minute, objective reformulation of the services calculation formula is necessary, which would lead to the consolidation of the connections between services and contributions, including a system of financial beneficiation for both anticipated and late retirements, as well as a change in the pension indexation system.

For this purpose important steps must be taken urgently in order to increase the adequacy level of the social services through reforms that target anticipated retirements, with the objective of encouraging individuals between 50 and 60 years of age to participate in an active life, which will thus achieve the so called "generation pact".

This reform should bring a significant contribution to the financial accessibility and sustainability. Moreover, promoting occupational pension schemes would increase in the long term the replacement rates and would raise the life standard for pensioners. Besides these measures that confirm the participation of people between 50 and 60 years of age to the work force, the strategy for financial sustainability must be based on the global management of social security and on the reallocation the collected contributions, as well as on reducing public debt. The savings that result from reducing the public debt could be transferred in a reserve fund and then redirected for future expenses in the area of social services.

The objectives in the context of social services must be supported by strategic measures, defined by domains and sectors of activity in order to identify specific directions of actions that will solidify the contribution of various sectors (education, professional formation, health, demography, social protection, scientific and technological research) to the development of the work resources in the years to come.

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The Forest of Romania: a Social – Economic's Dramma

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Abstract. *Forests were covering at the start of the third millennium around 26.5% of Romania's territory. Comprised into forest zones expanded in all historical provinces of the country, they are representing an important economic resource, an also an essential factor of the man-environment equilibrium.*

The organization of the rational exploitation of the forestry fund, adopted ever since the XIX Century, was abandoned after the forests nationalization, imposed by the communist regime in 1948.

Urbanization and industrialization, held in view by this regime, did not take into account the ecological requirements and neither those linked to the renewal of the natural economic resources.

The transition coming after the fall of communism, with pervert economic, psychological and sociological effects, has led to a savage exploitation of the forestry fund, the lack of some compensation measures (re-forestations, young forest protection),under the context of statal authority's dissolution (after the excessive communist authoritarism), having catastrophic consequences: land slides, desertification, pollution.

The remake of the forest ownership structure, from before nationalization, is not, as a consequence, sufficient, the putting into possession having to be accompanied, in the goal of remaking the natural harmony of man with his existential environment, by a series of economic, legislative, educational initiatives, which the EU integration could facilitate.

Keywords: forest; forestry fund; forestry ownership; de-forestation-cutting; nationalization-re-putting into possession; desertification-pollution; social and economic crisis; man-Nature equilibrium.

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JEL Codes: Q01, Q23.
REL Codes: 15C, 15D, 15G.

The forest area of Romania is spread in almost all its "historical" provinces (Transylvania, Muntenia, Moldova, Banat, Crisana, Maramures), on the hills and sub-mountain plains, covering almost 7 million ha, which is over 28% of the country's area. The forests, or the forestry fund properly, was encompassing in the first years of the third millennium around 6,350,000 ha (26.5% of the national territory), the rest, (1.9%) being made of non-settled land areas with forest vegetation, degraded land areas, de-forested pastures as recently, etc.

Of the forests total, over 30% is represented by the resins (spruce fir, fir tree), the beech tree having the same share, followed by oak trees" (18.3%) and other species (20.4%). In 2005 the average of the forest area per inhabitant was in Romania of under 0.30 ha, that is almost equal to the European average. In 1990, when the Romanian transition from socialism to capitalism started, this area was exceeding the European one, as result of the rigorous control made by the ex-regime as regarding the cuts of the forests and the de-forestations. The massive and chaotic cuts after the adoption, in 1991, of the Law no. 18, regarding the restitution of some forest areas to physical persons, have reduced the respective average area, and are continuing to reduce it, although the consequences for the environment are dramatic and lasting ones. Though, in the country's forests still there is a volume of standing woody mass of around 1,200-1,250 million m^3, the average volume per ha being of almost 200 m^3, higher than that of the ensemble of Europe. But the trend of this volume is negative, as result of the same uncontrolled manners of de-forestation, which on the background of the global heating, can lead to serious ecological dis-balances, affecting, in addition, the approximate 450,000 jobs, ensured by the silviculture activities, the exploitations of forests and the wooden processing industries. Under the context of the cyclical market crises, especially in peak crises, as the present economic crisis is, the massive reduction of these ones will increase the social and economic difficulties present already.

As regards the forests exploitation, the activities of silviculture and wooden processing, things did not seem, until the start of the third millennium, evolving like this. In the old Romanian rurality there existed a certain respect for the forest, the forest being "brother" to the Romanian. The Romanian peasant was exploiting as a rule, disorderly the land fund, the communities executing cuts and de-forestations, only for covering the strict needs, always taking care to protect the young forest, to ensure the patrimony continuity for the future generations. The village communities were living in full harmony with the environment, aware being that it is exhaustible in the context of brutal changes of the reciprocal relationships. The foresters, the watchmakers were designated by the community to watch to the intact keeping of the bond to the land, in the way the outcomes of it are put into value. Preoccupations for the rational and balanced use of the forest fund there also existed at state level. Since the XVIIth Century, in the Romanian Countries, Muntenia, Moldova, Ardeal, the princely offices have issued orders regarding the protection and good administration of the forests, Romania having, in the XIX th. Century already a formed silvicultural organization. The Romanian State has made lawful, in 1881 his own silvicultural Code, inspired of that adopted in France in 1827. The Code was modernized in 1910, when the structures of the capitalist economy were imposing themselves, being completed in 1930 with a Law for the forests administration, perfectly comparable to those adopted in the Western European States, where the need for keeping the ecological equilibrium was now appearing as a necessity. After the Second World War, in 1947,The Romanian State is adopting Law no. 204 (*For the defeating of the forest patrimony*) through which, although they acknowledge the private ownership upon forests, it is instituted a rigorous control upon the exploitations of wooden mass, the owners being constraint to respect certain quotas at cuts, and for only certain types of woods. Law no. 204/1947 was preparing the expropriation of forests, which are nationalized by the Constitution of the Popular Republic of Romania, in vigor since April 13, 1948. By the art. 6 this is proclaiming the forests as "State ownership", a good of the whole People. The provisions of the respective article were also confirmed by the changes brought to the Fundamental Law in 1952 and 1965. By Nationalization *Law no. 119 from June 11, 1948*, all private ownerships in forest field are becoming State Ownership, organized by the normative decisions of the Silviculture Ministry. Before June 11, 1948, The State owned almost 2 million ha of forests (29% of the forest country's area), 3 million ha pertaining to a number of around 9,500 of juridical entities (of which 2,600,000 ha were the ownership of the communal communities, the communities of the yeomen of the composesorates), other 320,000 ha being in ownership of some well-fair institutions, of the church and cultural ones (5%).

An area of over 140,000 ha (23%) is ownership of some physical persons, in number of around 50,000 owners (with an average of almost 3 ha/owner). The above data reveal the fact that the communist state has nationalized not only the private physical ownership, but also the group one, fact which gave way to many abuses, including against the existential background, in the name of the "socialist planning an industrialization".

The truth is that, although the State was exercising absolute control of cuts and de-forestations, it was too less interested in taking into account the nature equilibrium, the traditional harmony of the ratio Man-Nature, leading through the arbitrary decisions on the resources industrial exploitation, a whole series of ecological disasters. They were potentiated also by the trials of forced villages' urbanization, by the policy of their systematization initiated by Ceausescu.

The organic traditions of unification with Nature, of the rurals, were brutally modified, the very "forma mentis" of the Romanian Peasant being perverted. In order to survive, the Romanian peasant was practically obliged to act against his own environment, to rob nature of what was remaining after the "rational exploitation", exercised by the communist planning. This alienation of the good common sense of the Romanian peasant, the perverting of his natural respect for Mother Nature, was to produce its effects, after the abolition of the communist regime, when, by conjuncture laws, for that moment,, according to some power-groups' interests, it was tried the reconstitution of the forestry ownership.

The Land *Law no. 18/1991* was foreseeing, at article 41, the restitution only to the physical persons, of an area of up to 1 ha of forest, the juridical persons and the institutions expropriated in 1948 being completely ignored. The chaotic and arbitrary livery has stressed the feeling of uncertainty of the real or fictional new owners, the poverty and lack of funds of most of them exacerbating a pervert process, which even nowadays is still producing ecological side effects. Thousand of forest hectares, of different woody fragrances and of different ages, young trees curtains, planted following old plans (some tens of years), for land meliorations, trees experimental crops have been de-forested, in a Grobian-getting-rich frenzy (for some of them), in a freight of possible new nationalizations. To the preparation of the disaster have contributed the forgeries and the thefts in the archives, the ownership transfer into other placements, the Governmental clerks' corruption, who were making the livery only for some "incentives", many times anticipated by the selling of the wooden mass on the land areas retrocede. Many "owners" sold or prepare selling of forest crops or of the lands these were present, without even formally, try to sell their new possessions. It resulted a polluted desert with moving soils, bitten by the torrents not stopped from anything, a staleness of the air with nocive gases and particles, retained before the tree vegetation in function.

Facing these dramatic consequences, The Association of the Forest Owners in Romania has proposed, at the moment of their evidencing, the integral restitution to the lawful owners, juridical or physical entities, of the forests, forest pastures, of the clearings and lakes in the forests, including the mountain clears, of the buildings and areas for forests administration, of the installations for transport and wooden primary processing, passed together with the areas pertaining to the state ownership starting with 1948. Lawful owners also were considered, naturally, the communal communities, the composesorates, including the urbarial ones – the communities for fortunes –, the cultural and religious institutions, the territorial localities and organizations, which before the nationalization in 1948 were owning and administered forestry funds. The association required that the repossessions should be made on the old placements, the compensating solutions to be applied only there, where, out of objective reasons, restitutions are no longer possible. It also asked for the annulment of the livery acts and of the ownership titles, issued to some false owners, in this scope being imposed a serious review of the documents in the archives, of the land survey plans, existent in the period before the nationalization, including the punishing of the forgers, or of those using forgeries. The Association demonstrated that the argument of the overtaking by State of the forest ownerships of the juridical entities, for the lack of the activity of keeping, maintenance and improvement of the funds in question, is submitted to nullity, because these ones were not able to realize anything else after the abusive nationalization. Forest lands maintained before under excellent conditions, by cultural Institutions as The Romanian Academy, or the educational profile institutions, by churches or village communities (Communities, Compose-sorates), were apprehended, by ownership exchanges, false compensations or rebuilt in archives, by some speculators lacking any scruple, wishing a quickly achieved richness, together with their accomplices in the Public Administration. The Association of Forests Owners has wished this way a clear remake of the ownership structures in the field, as before the abusive nationalization, the repossession following to be realized by the officials of the National Forests Regie, in the presence of the local commissions for the Land Fund Law, on basis of some proofs and clear statements, and only after the silviculture regime has become functional in the respective zone of the country. For a future avoiding of repeating some arbitrary acts, or for avoiding the long time law suits regarding the lawful owners, the silviculture range must assume the task to give, in writing, to the restitution' beneficiaries the sketches and the settlement data of the area in question.

The requirements of the Romanian Forests Owners Association are focused, obviously, on the central issue of any real democracy, with a functional market economy, that is the issue of the absolute respect of ownership and the absolute freedom of the owner who is disposing of it. Together with this essential issue, the Association raises indirectly other problems of moral order, hygienic and ecologic. It was unfortunately demonstrated in the communist totalitarian years that the worst administrator of a public fortune is the State and that by nature of Man, the common property is the least fruitful in efficient way.

The State interventionism is valid only when it limits to the juridical regulation of the public action of the owners, to the norming of their social responsibilities in the disposition of the ownership exploitation. By the silvic codes and the laws of forests' administration in the inter Wars period, the Romanian State did not violate the ownership regime, as an example, but it prevented and limited, from the perspective of the ecological equilibrium and of the ensuring of the country's future, the arbitrary, aberrant or irrational disposition of its resources. But, the transition from the communism to capitalism was in Romania, after 1990, an alienating process of robbering these resources, on some incomplete laws basis, badly conceived on purpose, in order to give way to abuse and excesses of some interests groups, organized in mob way, centered upon the present's benefits. After the famous Law no. 18/1991, the legislative instability and the ownership theft in the field of forestry fund continued. Neither the Government Decision no. 982 from December 1998, regarding the organization and functioning of the National Forests Regie, nor the *Law no. 213/1998*, regarding public ownership and its juridical regime, not even *Law no. 1/ 2000*, regarding the complete remake of the old structure of land ownership, have stopped the robbery practiced upon the green lungs of the country, the businessmen corrupt and their supporters in the public administration, always finding ways to avoid the provisions.

If the Romanian State does not find the possibility to stabilize forever the legislative system, if it does not have success in blocking corruption and greed of the corrupters, we will be able to say that the future of Romania is the desertification, the disappearing of the essential resources, the extinction of the nation. The future of a country is not to be pawned if she wants to survive.

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What could be done to avoid such a possible situation? In the present Romanian context, stressed after the EU integration, in the continental one, but also on the background of the world economic crisis, a spectacular re-dressing of the forestry fund of the country is not possible anymore. By *Law no. 1/2000*, with its amending and subsequent modifications, there were put the premises of the reconstitution of the ownership right, existent before the 1948 communist nationalization. The coming back to the ante status quo cannot be but apparent, because, on one hand, the totalitarian state exploited forests in function of its own interests (justified by the intrinsic "rationalization" of its development programs), and, on the other hand, the commanded chaos and the delay of the livery, after the communism abolishment, had irreversible effects, hard to be foreseen, for the economic re-take up of the social ensemble, for the society as a total. The "savage" cuts in the transition period, the random de-forestations, not accompanied by planed re-plantations in compensation, produced great damages to the natural and human environment (land slides, destroys to infrastructure, long time pollution, etc.), damages which cannot be counteracted by publicity campaigns, with political trends, for the necessary re-forestations, made by some "responsible" televisions. As long as formally, the campaigns are ended up just into TV. shows, while the illegal de-forestations are going on, the re-dress of the forestry fund has no perspective. But more than that, they are deepening a "moral pollution', the interested person continuing the massive prelevation of the wood fund, the society, thought as an anonymous mass of taxpayers, following to makeup for the situation, through the new re-plantations.

The restitutions, following the *Law no. 1/2000*, have re-made in majority the forestry ownership structure of before 1948, that is, around 28% (1,900 thousand ha) state ownership and 72% (4,900 thousand ha) private and associate ownership. But the formal share cannot cover the "wrongs" of the restitution way, of the livery. The last operation, not ended up until today, has given way to a long series of un-satisfactions and social turmoils, because the lands' exchanges were many times made arbitrarily, and the forest crops were unequally distributed, many of the owners realizing that they cannot work profitably their re-covered lands, from different reasons (from the young forest, improper for the prelevation of the wood mass, to the de-forested zone, asking for money and physical efforts for the taking out and implantation). The lack of the Cadastre, making, this way, volatile the peasants boundaries, the big distances to the new lots, the lack of organization (making impossible the forest's protection in front of the illegal, savage exploitations), as well as the false putting into possessions (with the afferent delays in Justice), have made that the functioning of the National Forests Regie, as well the application of the silvicultural regime and the administration of the forestry fund in Romania, be realized in a defect way, the balance a-forestation/deforestation being inclined disastrously to the first one. Under these conditions, and in the context of an acute lack of funds in the rural (the local and central authorities demonstrating for the moment a serious in-capacity to absorb the money put at their disposal, by the EU after the accession), the accomplishment of the goal "an alive rural environment" (that is, an environment where the agrarian landscape be freed of the human one) becomes a real problem. The rural development remains just a formal goal, as long as their components do not evolve synchronically. Without a real protection of the environment (of the rural communities and of the society as a whole), inclusively through a rational, planned exploitation of the forestry fund, the concept is voiding of a sense, and the real evolution becomes chaotic, the consequences being un-predictable.

The social and economic promotion, which represents the salvation, the preservation and even the development of the forestry fund in Romania, presupposes the assuming of some measures for rural development foreseen within CAP (The Common Agricultural Policy) of EU, with the afferent adaptations to the local specific. In the European perspective upon the rural development, the natural environment and the agrarian landscape have a special importance, the multi-millennium history of the "Old Continent", showing that their depletion could lead to catastrophic economic and social changes, over-exceeded hardly and in long time.

That is why the rural development policies, regarding also the continental and each European state's forestry fund, must have, beyond the common, global color, a series of particular adjustments, in function of zones, resources, territorial equilibriums, traditions and specific occupations. For the East countries, which Romania is making part of, development must get a stressed participative feature, because the natural attitudes towards environment have been profoundly de-formed, the natural environment (with its forestry component), becoming, in the communist experiment, a simple appendix of the abstract plans of industrialization and urbanization. The participative development presupposes, in case of forests, the establishing of a common forestry code and of some clear legislative formulations, including upon the contingency of cuts and the re-forestations, but also of the rightful distribution of the European Funds for the de-favored zones, based on monocultures of wood mass (as the case of the Romanian areas of the Mounts Apuseni or Bucovina), in order to ensure an increase of life quality, without this leading to the abuse upon the environmental resources.

Economy's effort must be doubled by a cultural effort, with a pedagogical character, having in view the ratio man-environment, which should re-establish the old harmony of the human community with nature.

The forest's salvation, major component of the Romanian and European natural landscape, has thus become a long lasting plan meant to ensure the Continent's future.

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