

The Employment Dimension of Economy Greening

A Mini Case Study on R O M A N I A

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1. Introduction

Calan is a small and *very quiet* town in south-western Transylvania. In the clear days of summer the eye can gaze over the tops of the Southern Carpathians not far away, underneath which shelter the mysterious citadels of ancient Dacia. However, if this is the case now, 17 years ago, when the author of these lines, at the time a young research assistant, has been given his first assignment in the frame of a Phare program aiming at the restructuring of the Romanian metallurgical sector this was not the case. The city was bustling with activity but in the meantime, one could hardly see the sun which was hiding underneath black clouds of smoke coming from the coke plant located practically in the middle of the town. Everything was blackened by smoke, trees were skeletal and houses were almost all harbouring a sickly black-grey colour that made everything look dour.

This short story is more than common around Central and Eastern Europe and obvious enough around Romania where during the last twenty years since the fall of communism, large swathes of what were the hard-polluting and grossly inefficient industries created by central planning have been simply shut down and turned to scrap. Air has cleared and waters have found back their azure glitter, houses are again coloured brightly but in the meanwhile, small places like Calan have returned to their mid-nineteenth century status, that of peaceful, patriarchal villages. What has been a benefit for the environment has actually been a sort of a curse for many people who lost their jobs in the necessary process of restructuring thus being either forced into subsistence agriculture (inadvertently the largest provider of GREEN JOBS!) or into migration for employment abroad with all its inherent problems.

Therefore, the current country analysis, while more than supportively acknowledging the necessity of smartening growth and recovery through greening, will also try to make a point in favour of those economies, Romanian being one of them, where the priority remains JOBS first and foremost. Thus the paper will try as much as possible to detail the measures taken so far as well as assess them against the wider context, including the one of the current

world economic crisis and the prevailing strategies for a subsequent and speedy (hopefully) recovery.

2. Labour Market Outcomes

The massive restructuring undergone by the Romanian economy throughout the mid-late nineties and which had as effect an almost complete sweep of the antiquated production apparatus inherited from the communist era, has also led a dramatic drop in employment. The most affected were obvious enough the most dirty of sectors, with employment declining dramatically in metallurgy, mining (coal primarily) and chemical industry. Construction materials, especially cement which has witnessed the entry of large multinationals has seen its workforce trimmed, some old capacities shut down, with the remaining ones dramatically boosting their investment in eco-friendly technologies. As a result of this shift in the economic structure, employment structure has also witnessed a more than significant change. Not only that agriculture has surged at the beginning of the decade but as an increasing flow of FDI has directed itself towards the Romanian economy starting with 2000-2001, services, a sector that is labour intensive but environment friendly, though exogenous-shocks vulnerable, so as to take into account all its three basic features, has taken on as the main provider of jobs. Industry in the meantime has reduced its share of total employment, now hovering at a little bit less than 30%, with its most polluting sectors markedly down as against the commencement of the decade.

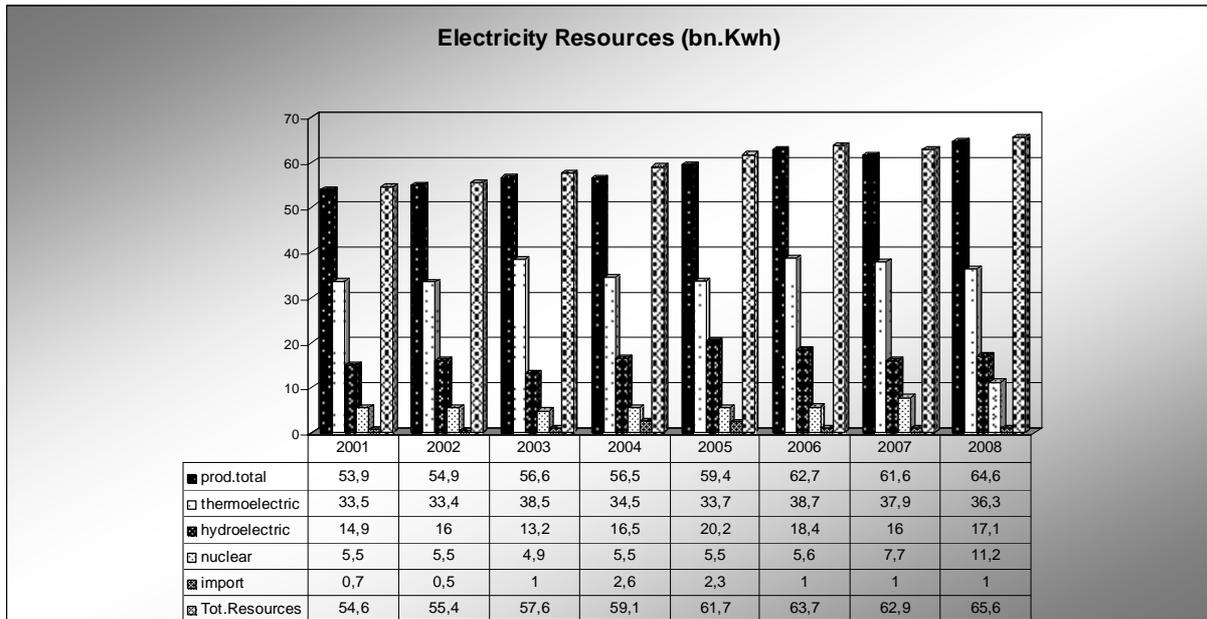
Table No.1 – The Gradual and Inadvertent Greening of a Transition Economy

Measure of gradual& inadvertent greening	2001	2008 (provisional data)	% change as of 2001 (=100)
Contribution to GDP formation of “green” (low carbon sectors) (%)	61.6	66.5	+7
Share of total employment of “green” (low carbon) sectors (%)	70.05	68.2	-2.7
Electricity generated from “green” (low carbon) sources (%)	20.4	28.3	+38

Source: National Institute of Statistics/NIS data, processed by Dr. Catalin Ghinararu

While not precisely pursuing policies directed at the creation of green jobs as the priority has been jobs at its broadest no matter their “colour”, Romania has nonetheless promoted strongly low carbon energy generation. Successive Governments after 1990 have strongly pursued the creation of a national nuclear energy generation capacity. The nuclear plant in Cernavoda (130 km E of Bucharest on the right bank of the Danube) started with Canadian technology in the mid-seventies has seen a resumption of its works in the early nineties, with the first reactor (Unit #1) starting production in 1997 and the second one (Unit #2) steaming up ten years later in 2007. Two more reactors of the same plant are now under construction with the Government more than committed to a nuclear energy generation strategy for Romania. The end result of this quest for nuclear has been a rise in the country’s share of nuclear generated energy from a low of around 5% in the mid-nineties to a high of around 17% in 2008.

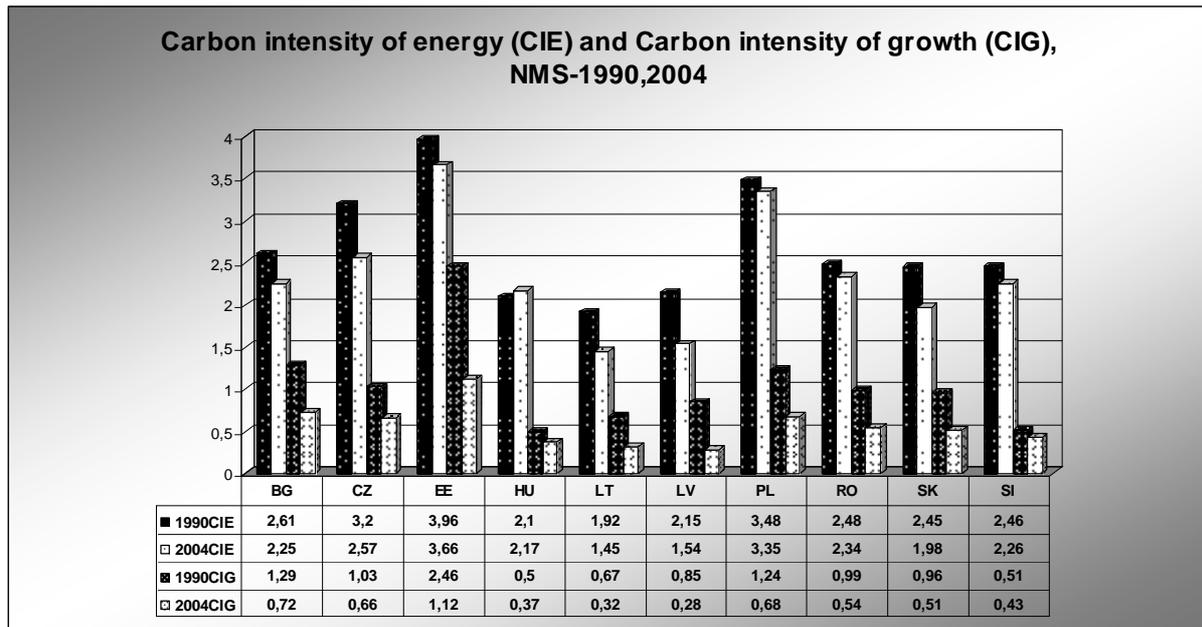
Chart No.1



Source: NIS data, processed by Dr. C. Ghinararu

Also, as the fourth country in the Union in terms of electricity generated from renewable sources (hydro-power) successive Romanian Governments have used multilateral financing (World Bank, EBRD) to modernize the country's hydropower stations with a peculiar attention being given to the large complex at Portile de Fier (the Iron Gates) on the Danube where Romanian jointly with Serbia operate on of the largest hydropower stations in Europe. Several other projects aim at the modernization of the country's extensive network of hydropower stations, though the building of additional ones, a remote possibility even before the crisis, must be considered now as a forgone dream, as the country most surely will not be able to muster the necessary resources.

Chart no.2



Source: U.N.D.P. – Human Development Report 2007/08, processed by Dr.C. Ghinararu;

Although its economy remains more than energy intensive, a fact that is due of course to the prevalence of rather more antiquated technologies than the ones employed in the Western part of Europe, the carbon intensity of both energy-generation as well as of the economic growth, these ones being the two measures preferred by the UN in its assessments, has markedly declined. This is of course the result first and foremost of aggressive industrial restructuring but one cannot and should not neglect the contribution of the intense national effort directed towards the creation of, if not entirely green, at least non-carbon energy generation sources.

3. Review of Labour Market Policy Developments

3.1. Relevant MS (RO) labour market policies

Although no particular LM policies have been directed towards greening or greener jobs one can nevertheless say that a large share of the active measures promoted by the PES through its main body of legislation the Unemployment Insurance Act have somehow supported the move from industry to services. The mobility incentives as well as the incentives given to employers to train their employees (50% of the training costs for a maximum of 20% of an enterprises', once per year), as well as the apprenticeship law, all have been actually directed basically towards workers dislocated from restructured, polluting industry while aiming at retraining them for cleaner jobs in services. Unfortunately though, up until recently, not much has been done so as to train those that moved out from the cities into the rural areas so as to convert subsistence farming into eco-farming.

It is important though to mention that Romania has taken steps so as to create at least the basis of a skills/occupational demand anticipation system. As early as 2003, the National Labour Research Institute has undertaken several enterprise investigations with the aim of early identifying the rapidly changing demand for skills. Such investigations have been repeated though with sometimes diverging objectives in 2004-05, 2006 and 2008. Moreover in 2006 a more audacious step has been made with the enterprise investigation being doubled by an attempt to create at least in a nutshell, a system of occupational monographs. Some 150 occupations have been then studied exhaustively, being thus classified into three main groups: dominant, changing and piercing occupations. The study has been made available to the Sector Committees at the functioning in an advisory position to the National Adult Training Board now fully recognized as public tripartite bodies, entrusted with the elaboration of occupational standards.

Finally Romania, through the National Labour Research Institute, is actively involved in the anticipation exercise currently financed by the CEDEFOP and led by the Warwick University-IER, Cambridge Econometrics (UK) and the ROA (NL) aiming to produce a mid-term (2025) forecast of the demand and supply of skills in Europe.¹

¹ Under the supervision of the author of the current text, Dr.Catalin Ghinararu, a small team from the National Labor Research Institute of Romania has been entrusted with the validation of the results of the exercise for seven European countries, six NMS (BG,CZ,HU,RO,SK,SI) plus Greece;

3.2. Information on the role of the ESF

Several projects funded by the ESF are aiming if not explicitly at greening and green jobs at least at bettering the capacity of the Romanian relevant authorities as well as enterprises to chart the evolutions of the demand and supply of skills in what will be a ever more integrated Single Market, revolving around flexicurity and taking green, smart growth at its core. As such, the SAPERE project which brings together the Romanian National Agency for Employment (NAE) and a host of Italian partners aims at bettering the capacity of the Romanian PES to anticipate changes on the labour market and thus constantly update its toolkit of active policies. The MEDIT project which brings again together the NAE and this time the Italia LAVORO lucrative arm of the Italian Ministry of Labour attempts to find a mechanism for an improved regulation of the flow of workers between Romania and Italy thereby being a step towards a closer integration of labour markets in older and new member states of the Union. Finally the recently started FLEXICOVERY project initiated by the National Labour Research Institute tries to get more in depth and thus bring the core concept of FLEXICURITY into the daily practice of Romanian enterprises.

3.3. Interesting practices at work

Starting with 2006-2007, the Government of Romania has initiated a scheme whereby interested associations of owners, especially from amongst those living in the huge blocks of flats build during the forty-five years of communism, most of which have been put-up in a haste that had to do completely with the demagogy of the system and which thus are poorly insulated, can benefit from a state subsidy to thermally rehabilitate the construction. Although no a very large number of blocks have benefited until now, nevertheless it has to be told that the scheme is gaining momentum and in a period of crisis, is seen as one of the few stimulus measures the Government can afford given the constraints it has imposed on itself when signing up for the huge IMF-backed loan early this year. According to recent statistics released by the Government in 2008, around 89 blocks have seen complete rehabilitation with 39 more being in advanced stage of the process. For 2009, when funds have seen an increase as against 2008 and this in spite of the crisis, around 31 blocks (979 flats) have been completed with yet another 543 blocks (around 23,000 flats) being now in various stages of the process.

An old car replacement scheme has also been initiated with more than 40,000 vehicles being targeted in 2008 and around 60,000 in 2009. The scrapping scheme has been extended

in 2009 to small utility vehicles so as to assist SMEs and will see further extension to tractors starting with Jan.1st 2010. However, it has to be said that the scheme is modest in its extent. A registration tax which had been imposed by the former liberal Government in 2007-2008 so as to prevent the dumping of old cars on the Romanian market has been scrapped at the end of 2008 and replaced with a more milder version whereby all new cars have to pay a tax based on their level of CO2 emissions. New cars are obviously favoured but second-hand ones at which the old tax was aiming do no longer bore the brunt, a fact that has at its best mixed consequences, especially given the current context of crisis.

3.4. Brief assessment on the direction of existing reforms

Greening the economy and thus giving an impetus to the creation of jobs into green or greener and thus smarter sectors of the economy must not be seen as a luxury but as a necessity. In the meantime one does not have to forget that countries like Romania have missed more than half a century of normal development and thus they have scarcely resources to mobilize for such a goal. The current model of development which has seen their swift overturn from autarchic, early 20th century stile *kriegskapitalismus* economies into very open excessively service oriented ones seems to have failed the basic test of a random exogenous shock that is more than likely to repeat itself in the course of our generation (presuming that this one is almost over although **more than prudence** is advised in this respect!). Therefore something has to be done so as to better prepare them while in the meantime ensure that they can close the development gap with their more developed counterparts in the Union. For this, the main priorities have to be growth, jobs and incomes. Greening those might be of course an option which faintly seems to make some headway in the Romanian authorities strategy but fact is, that given the current production apparatus, more greening than currently already is, would actually mean complete economic (i.e.: read industrial) wipe-out. Public resources to come into support are meagre even taking into account the stream of EU funds. Accordingly the basic contribution will come in this direction from energy related policies where Romania strongly promotes the low-carbon solution of nuclear energy, clustered around what is the safest and most modern installation in this area of Europe (the Cernavoda plant) as well as the strategic project of the NABUCCO gas pipeline. Both directions will have a strong impact on the economy and the labour market, spurring both jobs and growth and one has to say it, even of the mildly green ones.

3.5. Brief assessment on the optimal intervention level of active labour market policies

Current LM policies have not been precisely directed at greening. Given the current crisis and the more than pressing need to resume somehow growth and job generation, it is hard to believe that, at least in the initial phase, somebody would cherry pick job creation. Rather it would be supported wherever it comes from. However, as significant sources are available via the ESF as well as other structural and cohesion instruments it would be more than advised to channel those resources where jobs are genuinely created and this is at the level of enterprises and local communities. The perspective of large mining projects such as the Rosia Montana gold mine (supposedly to be the largest in Europe if the decision to open it is not overturned due to environmental reasons) must be actually not shunned on narrow “*environmentalistic*” grounds but on the contrary harnessed so as to produce a pilot case whereby exploitation of natural resources that fosters growth also brings in a strong component of environmental rehabilitation thus spurring not only “green jobs” but also the generation of “green-oriented” know-how. Acquiring such know-how in an area where natural resources are almost depleted like Europe and then making good use of it on a market basis would prove actually far much smarter than simply selling “hot air” (emissions certificates of which RO like other countries in the East now have aplenty) to developed nations. Especially as selling now, when the cycle is at its trough, might mean that tomorrow, when growth will resume, they might turn a more expensive buy back and thus hamper green growth at a different and far much higher level.

4. Conclusions

Looking at the above one can clearly say that Romania given its current level of development and the state of its production apparatus has done more than its fair share in terms of greening, even considering that this fair share was more than evidently the result of restructuring rather than of a conscious drive towards economy and labour market greening. Perspectives are however difficult to gauge for such an economy, an economy that has witnessed a series of random exogenous shocks of unprecedented magnitude throughout the last half a century or so. Greening more than it is would be more than difficult given the current context as it would probably entail the loss of whatever remaining industrial base. Services as they are, have shown themselves at least in a phase of explosive growth capable of generating quite a number of jobs thus compensating the loss of jobs in the obsolete industries inherited from central planning. However, the shock of massive unemployment has avoided the Romanian labour market mainly due to the buffer of subsistence agriculture and, later on, due to intense migration flows towards the developed markets of the older MS. None of these

might be available to such a large extent in the future. The most urgent of priorities for Romanian therefore is to re-start the engine of growth and resume job generation. If this will entail also greening so much the better but no one can bet on it.

What is actually more likely to happen and recent forecasting exercises that concentrate on the anticipation of both the demand and the supply of skills in Europe show, is that the economy and the labour market will deepen themselves into a sort of disequilibrium. The sectors that look most likely to absorb Romanian labour force in the next 15 years or so up to 2025 are distribution, education, automotive and... maybe not surprisingly AGRICULTURE (in 2025 still forecasted at around 19% of total employment!). However, the question remains, if these are the sectors most likely to be the main employers what will happen with a workforce which at that point will boast a level of education that will by far surpass the one today? What will they do? Where will they go? Is the content of jobs going to change so much as to make distribution sector attractive enough for the higher educated, will agriculture maybe cease to be just a dumping ground for the low skilled and the elderly and become a beacon of opportunities for the ones with medium education level?

All of these questions unfortunately remain unanswered. The only tentative answer that we might give is that with the decade to come, integration into the Single Market, the concept that lies at the core of the EU-2020 strategic concept currently under debate, will get ever closer. As the EURO will become the currency of all of countries in the region, national markets will probably matter *more than a little bit less* than nowadays. As such, what we might actually see today as disequilibrium of a national labour market can be just a partial picture whereby a collection of nationally-based disequilibrium actually turns into equilibrium at the level of the Single Market. It might be that in this way, via closer integration into the wider economy of the continent that national economies, Romanian included, for which GREENING seems a rather remote and even development-hindering concept (low-carbon might be more achievable for them probably) today might get not only richer before getting older but, also get *greener* while in the meantime enriching themselves so as to shoulder for their progressive, though not unavoidable,*greying*!

APPENDIX

Costs and Benefits of the Inadvertent de-carbonization of a Post-Transition Economy

Romania's economy might be still one of the most energy intensive in the EU but at least it is not one of the most carbon-intensive. Like all of the economies in the East of the continent, a process of carbon emissions reduction has occurred during the Plan to Market Transition years, only to be continued in the years of strong growth preceding the violent shock of the current worldwide economic depression (crisis). Carbon emissions were already down by 35% in the year 2000 as against their 1990 level, following the radical restructuring of the Romanian economy that occurred during the late nineties. By 2004, when accession negotiations were completed, their level was down 41%. At the height of its pre-crisis growth with its engines at a full 8% annual GDP%, Romania carbon emissions were down as against the same 1990 levels by a full almost 50%. Therefore a massive de-carbonization process had occurred and it is likely to continue apace as the current crisis has been hardly biting the country's industry. Of course this process has been an inadvertent one as its aim has not been necessarily the cleaning of Romania's soil, air and waters but a massive restructuring of the industrial base inherited from Central Planning so as to enable it to get a measure of competitiveness on the world markets and obvious enough, a measure of long-denied prosperity to its citizens.

Inadvertent as it might have been, this de-carbonization (actually we can even call it greening) of the economy has had and is still having its costs while also yielding some enfeebled benefits.

Our calculation have shown that the reduction of CO₂ emissions has proceed at an average of 3.1% per annum, around 70% of it has occurred actually during the more decade of the nineties. The sharp reduction in CO₂ emissions had a cumulative cost in terms of real GDP of around 22%. This sharp drop has meant that in nominal terms, as expressed in US\$ at market exchange rates, the country's GDP has remained stagnant for a whole decade, hovering around the wholly non-European value of bn.US\$33. Practically for each metric ton of CO₂ reduced, the cost in terms of lost overall output growth has been for the last twenty years of 0.22 pp on the average. Of course one can also point to the fact that this inadvertent de-carbonization which was prompted by the restructuring of the economy has also yielded significant benefits as each metric ton of CO₂ that has been reduced afterwards has brought a gain of 0.37pp in terms of output growth for the period 2001-08 but, this relation proves itself statistically insignificant.

When looking on the other side at the nominal GDP, which points to a country's wealth, then, the results of this radical, if inadvertent once again, greening, look rather dismal. For the whole of the 20 years period we have examined the fall in CO₂ emissions has literally wiped out on the average, for each metric ton shed, no less than 1.75 billion US\$. Theoretically speaking at least, without de-carbonization on such a massive scale the country's GDP would have been today almost US\$bn.100 higher.

The most striking aspect nonetheless is the one that relates to jobs. Our own calculations how that total employment has dropped throughout the whole of the period by around 3 million, from a high of around 12 million on 1990 to around 9.3 million in 2008. The loss does not seem to be so large, with the greening of course accounting for it but, again there is a caveat to it as around 3 million of the occupied are accounted by small farmers and their aides working in subsistence, household production for its own final consumption agriculture. Thus, in terms of salaried employment de-carbonization has been actually more drastic, as each % variation of CO₂ emissions has triggered a 1.6% reduction in salaried employment. In other words, while CO₂ emissions were dropping by 1%, around 130000 salaried jobs were going down

the drain. Unemployment rate was of course picking up and like before, but of course in what we call a negative correlation, one pp of CO2 emissions reduction added 0.06 pp to the national definition unemployment rate. Therefore if it would not have been or the restitution of properties in agriculture in 1991, later to be widened by subsequent measures in 1998-2000, the social climate might have gone really volatile.

It is of course clear for us, as we have underlined in many other texts, including one for the EEO, that the 100 billion US\$ of GDP “lost” are only theory. With the industrial mix the country had at the beginning of the nineties, competitiveness on the world markets and even a modicum of prosperity for the country’s hard-trying citizens would have been illusory, to say the least. It is actually precisely because this inadvertent de-carbonization has indeed occurred, that the economy got itself more efficient and households have managed to dig themselves out of what was widely spread, though highly egalitarian, misery. Nonetheless, while to our advice and in spite of the fact that the correlation between growth and de-carbonization for the first decade of this century looks statistically insignificant, prosperity has been on the rise, employment failed to respond commensurately. The jobs that were lost seem at least for what we know, irrevocably lost. Not that most of them, as the industries that were supporting them would have been sustainable but, their loss has triggered a massive wave of migration which is depleting the country of valuable human resources while inducing a massive disequilibrium on its small, very open labour market. Therefore, some measure of gain from decarbonisation is actually almost entirely matched by a full loss on the jobs side. How will this bode for the future? Difficult to say precisely as de-carbonization or greening if we would agree to call it as such, has been inadvertent and practically to its full the result of economy-wide, systemic, restructuring. If Romania would have been located somewhere else and not in Europe, mainstream economic logic would have pointed towards an incoming rise in carbon emissions as the country would have attempted re-industrialization of course following a market/capitalist logic. However, this is not the case, as Romania is in Europe, it is a member state of the Union and it is set, together with all other NMS still not members of the EUROZONE, to become one. One currency, in economic terms broadly means one country. One country however with many regions, each of them at different levels of development and each probably displaying, more or less of course, some sort of labour market disequilibrium, capable of balancing itself at the level of the Single Market. Therefore, what it is likely to happen and recent results from the CEDEFOP-led forecasting exercise only show it too clear, is further de-carbonization. Practically the country will shed all of its polluting industries. It will turn into a sort of a service-based economy, not of the very high-end ones nonetheless. As a national economy it would look entirely dysfunctional and vulnerable, however, as it will be completely integrated into the Single Market by that time (2020-25) being functional alone, would probably make little sense. What we can conclude for ourselves though, glancing into the future has become increasingly difficult given the current extreme economic turmoil is that “further greening” is going to arrive the Romanian economy via deeper integration into the Single Market. Leaving apart some domestic effort which will for surely occur, the former, will be however, the main driving force behind.

Of course being green is not enough, one needs to be also rather smart. However, how much of the greening for surely on the way for the Romanian economy is also going to mean smarter, is far much harder to say and for surely beyond the scope of the current appendix.

To summarize, though without being able to conclude that much or as much as we would have wanted for we lack a lot of information and **a lot more research is needed**, we are placing below a table which points to the inadvertent greening (de-carbonization) of the Romanian economy throughout the last two decades and its effects/links on a selected set of macro-economic variables.

	CO2-emissions (M.to.)	as of 1990=100	%change (YoY)	GDP%	Nominal GDP (US\$ bn.)	Total Employment (mil.)	Unemployment rate (national definition) (%)	Total No. of Salary employees (mil.)	Liberalization Index
1990	155,1	100	0	-5,6	29,20	12,3	1,3	8,73	0,22
1991	148,59	95,80	-4,20	-12,9	26,10	10,7	3	7,38	0,58
1992	142,07	91,60	-4,38	-8,8	24,40	9,7	8,2	6,50	1,03
1993	133,85	86,30	-5,79	1,5	25,90	10,06	10,4	6,44	1,61
1994	129,90	83,75	-2,95	3,9	30,00	10,8	10,9	6,86	2,29
1995	127,41	82,15	-1,91	7,1	35,50	11,1	9,5	7,28	3,00
1996	122,43	78,94	-3,91	3,9	34,00	10,9	6,7	7,03	3,72
1997	115,75	74,63	-5,46	-6,1	32,10	11	6	6,86	4,47
1998	111,80	72,08	-3,42	-5,4	31,30	10,8	6,3	6,69	5,27
1999	103,40	66,67	-7,51	-1,2	34,20	10,7	6,8	6,29	6,15
2000	99,96	64,45	-3,33	2,1	37,40	10,7	7,1	6,27	7,05
2001	97,01	62,55	-2,95	5,7	40,10	10,6	6,6	6,26	7,97
2002	95,58	61,62	-1,47	5,1	45,80	9,2	8,4	5,96	8,47
2003	92,80	59,83	-2,91	5,2	59,50	9,2	7,58	6,06	9,17
2004	90,40	58,29	-2,58	7,36	81,10	9,15	6,77	6,25	9,62
2005	86,62	55,85	-4,18	4,65	99,00	9,14	5,83	6,21	10
2006	83,99	54,15	-3,04	7,73	125,00	9,31	5,56	6,47	
2007	81,15	52,32	-3,38	5,98	165,86	9,35	4,34	6,58	
2008	78,35	50,51	-3,46	7,38	220,21	9,36	4,01	6,69	
2009	74,56	48,07	-4,83	-6,00	171,00	9,28	6,29	6,59	

- The **Liberalization Index** is a measure of the progress in the Plan to Market Transition, on a cumulative scale from 0 to 10; Therefore the value “10” conventionally indicates the “end of Plan to Market Transition”;
- The Year 2000 is marked in RED as the year when finally the economy returned to growth after the completion of radical reforms (attainment of the critical mass threshold in Plan to Market Transition process);
- Values for 2009 are estimates; All other values have as sources the National Institute of Statistics of Romania and the National Agency for Employment; However their processing for the purposes of this Appendix belongs to Dr.Catalin Ghinararu;
- The column on CO2 emissions (total) comes from the UNDP Human Development Report 2007/2008 “Fighting Climate Change: Human Solidarity in a divided world”. In the original text values are only for 1990 and 2004, the rest have been estimated by Dr.Catalin Ghinararu and are appropriately marked in italics. Values after 2004 are projected estimates of Dr.Catalin Ghinararu and are as such marked in bold italics.

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