STATE AID AND COMPETITIVENESS COMPOSED INDICATORS FOR ROMANIA AND SLECTED EU MEMBER STATES. A COMPARATIVE ANALISYS

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Abstract: Despite the proclaimed revival of the industrial policy, state aid granted by the EU still remain at a concerning low level. This may be explained by EU's unique institutional achitecture, that allows the European Commission to monitor and restrict state aid related activities in the member states. Relying on 2007 –2013 statistical data published by Eurostat, AMECO and OCDE data bases, the main purpose of this paper refers to determining the corelation between state aid authorised by the European Comission for Romania and some selected member states and their competitiveness level, in the period 2007 – 2013.

Even if the member states government would know which industry of company should br supported, the actual allocation of the public fund is strongly influenced by legitime interests. Therefor, state aid allocation is usualy dependent on political considerations and on the negotiation power of the involved parties, rather than on economic objectives.

The main purose of this paper is the following: firstly to determine the relation State Ais – Competitiveness, analysing the cases of Romania, Germany, France, Austria and Poland between 2007 and 2013; and secondly t determine if there is a measurable impact at national level, and to identify new growth possibilities of state aid efficiency.

Our main hypothesys is analysed with the help of an original system consisting in competitiveness agregated indicators and their corespondents from the state aid field, and the results obtained are graphically presented. This paper is based on the research for the PhD thesis entitled Competition versus competitineness. State aid impact in Romania in the context of EU integration context

Keywords: state aid, competitiveness, aggregated indicators, allocation, Romania

JEL classification: O52; R58

1.Introduction

Despite the proclaimed industrial policy, state aid granted by the EU to the member states still remain at a concerning low level This may be explained by EU's unique institutional achitecture, that allows the European Commission to monitor and restrict state aid related activities in the member states. Relying on 2007 -2013 statistical data published by Eurostat, AMECO and OCDE data bases, the main purpose of this paper refers to determining the corelation between state aid authorised by the European Comission for Romania and some selected member states and their competitiveness level, in the period 2007-2013.

Considering the availability of statistical data as well as the main objective of this paper – to determine the corelation between horizontal state aid and the competitiveness level of the selected member states, we can organise the competitiveness indicators as follows:

- Aggregated Indicators
 Income Pillar (IAV);
- Aggregated Indicators Social Pillar (IAS);

Aggregated Indicators – Environmental Pillar (IAE);

In the following section we will consider I_j^* - the indicators that need to be transformed and we will express the transforming relation for entity (i) at time (t)

$$(I_{ij}^{t})^{*} = \frac{I_{ij}^{t} - \min(I_{ij}^{t})}{\max(I_{ij}^{t}) - \min(I_{ij}^{t})}$$
(1)

The aggregated competitiveness indicator for entity (1) will be expressed as follows:

$$IAC_{i}^{t} = \frac{\sum_{j=1,1}^{1.4} p_{j}(l_{ij}^{t})^{*} + \sum_{j=2,1}^{2.4} p_{j}(l_{ij}^{t})^{*} + \sum_{j=3,1}^{3.4} p_{j}(l_{ij}^{t})^{*}}{\sum_{j=1,1}^{1.4} p_{j} + \sum_{i=2,1}^{2.4} p_{j} + \sum_{j=3,1}^{3.4} p_{j}}$$
(2)

The aggregated state aid indicator for entity (i) at time (t) will be expressed as follows:

$$IAS_{i}^{t} = \frac{\sum_{j=1.1}^{1.3} p_{j} (l_{ij}^{t})^{*} + \sum_{j=2.1}^{2.2} p_{j} (l_{ij}^{t})^{*} + \rho_{3.1} (AS_{i3.1}^{t})^{*}}{\sum_{j=1.1}^{13} p_{j} + \sum_{j=2.1}^{2.2} p_{j} (l_{ij}^{t})^{*} + \rho_{3.1}}$$
(3)

2. Aggregated competitiveness indicators

In this particular section we will present the values for the aggregated indicators, structured in three important pillars - IAV, IAS, IAE for every single selected member state, in the period 2007 - 2013.

Based on the values presented in the next Tabel, we will express graphically the evolution of the aggregated competitiveness indicator (IAC)- that will be regarded as representative for presenting and describing the general level of competitiveness for each member state and that will be used in analysing the relation between competitiveness and state aid.

Tabel no. 1: Aggregated indicators evolution in the selected member states, during 2007 – 2013

MS	Indicator agregat	2007	2008	2009	2010	2011	2012	2013
	IAV	6,93	6,13	-1,5	2,56	2,62	1,08	1,10
Romania	IAS	4,04	4,04	3,97	3,92	4,22	3,85	3,79
	IAE	4,06	3,81	3,96	4,02	3,98	4,07	4,19
	IAV	2,34	4,35	3,54	5,61	5,68	4,12	4,08
Germany	IAS	3,34	4,09	4,09	3,99	3,84	3,86	3,79
	IAE	3,74	3,38	3,94	4	4,07	4,38	4,39
	IAV	5,67	3,09	2,86	4,44	4,25	4,09	4,05
France	IAS	3,94	3,76	4,07	4,01	4,07	3,97	4,09
	IAE	3,86	3,89	3,99	4,01	4,02	4,06	4
	IAV	3,96	3,97	3,20	4,66	4,51	4,57	4,58
Austria	IAS	3,86	3,90	1,13	4,04	4,04	3,98	4,02
	IAE	3,92	3,98	3,99	4,03	3,95	3,99	3,84
Poland	IAV	3,98	4,27	2,93	3,7	4,09	4,19	4,21
	IAS	4,26	3,91	3,79	3,98	4,04	4	4,04
	IAE	3,61	3,7	4,08	4,08	4,09	4,58	5,01

Source: Authors calculation according to own model and based on the statistics avaliable at the following link http://ec.europa.eu/eurostat

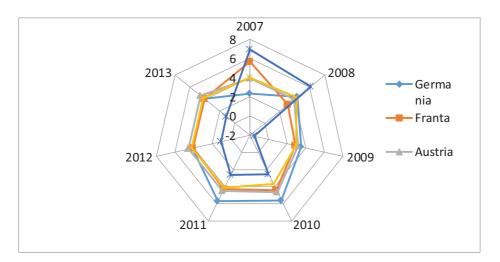


Figure no. 1: Income Aggregated Indicator (IAV) in the selected member states during 2007 – 2013 î

Source: Authors calculations according to own model and based on the data available at the following link http://ec.europa.eu/eurostat/web/national-accounts/statistics-illustrated

In the above figure we can analyse each member states competitiveness evolution from the Income Pillar perspective.

Analysing the above figure we can determine the ranking of the most competitive economies from the Income Pillar perspective as follows: the first position is occupied by Germany, followed by Austria, France and Poland.

The case of Romania is concerning regarded from this point of view, because our country occupies the last position, ranked at a significant difference from the other analysed states, and more concerning in 2009 Romania registred negative values for IAV. Even if this event was fvollowed by an ascending trend between 2009 and 2011, it is not sufficient to compete with the other member states.

Regarded from the Income Pillar perspective, France stagnated lately, although, the government promissed "a competitiveness shock". They also tried to implement several measures for supporting the business environment and to simplify the administrative procedures in order to encourage economic growth and to reduce the unemployment rate. Poland tried to maintain itself regarding general aspects, and this is expressed ny IAS evolution in the analysed period. Poland concentrated on improving the institutions and infrastructure to remain competitive.

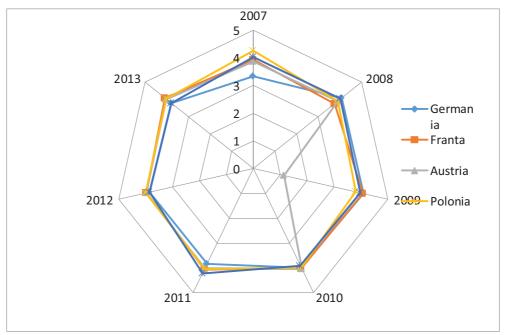


Figure nr. 2: Social Aggregated Indicator (IAS) in the member states during 2007 - 2013

Source: Author's calculation based on data available at the following link
http://ec.europa.eu/eurostat/statistics-explained/index.php/Europe_2020_indicators_-

executive summary

In the above figure, we can analyse the IAS evolution for each member state during 2007 – 2013, and we can note the competitiveness level from the social perspective.

It is obvious that the competitiveness level regarded from the social perspective is simillar for the majority of the analysed states.

The case of Austria is remarcable, because during 2008 - 2009 this country registred much lower values compared to the other member states, but it recovered and registres a strong increasing trend during 2009 - 2010, reaching the others in the following period of time 2010 - 2013.

France registred a positive evolution regarded from the social perspective, because this country is remarcable through the quality and quantity of education at all levelsand of course through it's social policy oriented to the citizen's benefit.

Poland is trying to maintain it's citizen's educational level, although it's a difficult objective, considering that it is the largest economy from it's region. Poland is trying to concentrate on improving the employment market's efficiency, and this is expressed through the IAS constant trend in the analysed period.

Despite the harsh international economic environment, Germany managed to reduce the emplyment rate remaining constant in the analysed period. Regarded from the IAS perspective, Germany oriented it's efforts to ensuring the life standards improvement, especially in in the context of new developing social challenges and the European demography, and their efforts were paid back as Germany registred the highest employment rate, especially qualified work force.

The situation of Romania is not the most expected, being less competitive compared to the reat of the analysed member states. Regarded from the IAS perspective, Romania is not positively remarcable.

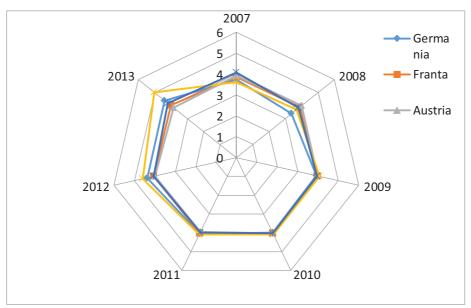


Figure nr. 3: Environment Aggregated Indicators (IAE) in the member states in the period 2007 – 2013. în SM în perioada 2007 - 2013

Source: Author's own calculation, according to data available at the following link http://ec.europa.eu/eurostat/web/environment/statistics-illustrated

In the above figure we can observe the competitiveness evolution from the Environment Pillar perspective in the period 2007 - 2013.

As well as in the case of IAS, a simillar trend and evolution could be noticed.

Poland, tried to concentrate on implementing some reforms based on ecosystem innovation according to the private enviroment, their main objective remaining to determine the development of a sustainable growth of the renewable energy sector. Out of the analysed member states, Austria and Germany are more experienced in this area compared to the others, but that doesn't mean that Romania for instance is not an important player., on the contrary, we consider that Romania has a competitive advantage from this pillar's perspective, the problem remaining an important investment adressed to the renewable energy sector. Germany is one of the most efficient economies regarded from the IAE perspective, because in the analysed period it managed to maintain accessible prices for energy and also to maintain it's economic prosperity. The rigurous implementation of the environment policy supported the energetic sector and energetic intensity of the German economy. In the following section of this paper, we calculated the Competitiveness Aggregated Indicator based on the three pillars mentioned above, according to the appointed methodology, and in the next section we presented its values during 2007 – 2013, for each member state.

Tabel nr. 2: Competitiveness Aggregated Indicator for the selected member states during 2007 -2013

MS	2007	2008	2009	2010	2011	2012	2013
Germany	3,14	3,94	3,85	4,53	4,53	4,12	4,08
France	4,49	3,58	3,64	4,15	4,11	4,04	4,04
Austria	3,91	3,95	2,77	4,24	4,16	4,18	4,14
Poland	3,95	3,96	3,6	3,92	4,07	4,25	4,42
Romania	5,01	4,66	2,14	3,5	3,60	3,00	2,44

Source: Author's representation based on own calculation according to data available at the following link http://ec.europa.eu/eurostat

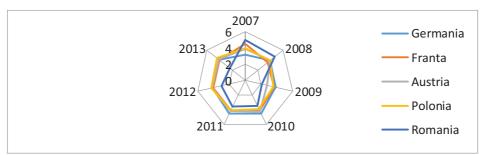


Figure nr. 4: Competitiveness Aggregated Indicator (IAC) in the selected member states during 2007-2013

Source: Author's calculation exposed in Table nr 2 and according to data available at the following link http://ec.europa.eu/eurostat

In the above figure we tried to express the competitiveness situation in the selected member states in the period 2007 - 2013, and we managed to rank the economies we analysed and the top looks linke this: first position is occupied by Germany, being followed by Austria, France, Poland, and Romania.

3. Correspondent state aid categories

a. Main State Aid indicators regarded from Income Pillar perspective

In the following section we will present the evolution rate for the simple indicators for state aid categories ($AS_{1.1} \div AS_{1.3}$) linked to the Income Pillar in the analysed period 2007 – 2013 for each selected member state.

Tabel nr. 3: ASO for Regional Development–AS $_{11}$, ASO for RDI – AS $_{12}$ and ASO for supporting SMEs – AS $_{13}$, from the Income Pillar perspective during 2007 – 2013, million Euro

ASO	MS	2007	2008	2009	2010	2011	2012	2013
AS ₁₁	Germany	3.125	3.479	4.929	2.144	2.000	2.085	1.608
	France	3.024	3.337	4.451	4.396	3.544	3.052	2.812
	Austria	70,3	71,43	185,46	116,65	114,7	124,43	101,44
	Poland	426	469,47	608,49	748,06	548,99	693,88	708,31
	Romania	56,3	55,93	52,96	101,85	144,6	94,39	155,46

AS ₁₂	Germany	3124	3479,15	4929,57	2144,97	2000,22	2085,81	1608,70
	France	1765	1878,81	2230,11	1963,6	2185,76	2130,7	1521,06
	Austria	203	299,51	351,78	537,07	271,92	231,50	250,30
	Poland	31,27	37,94	36,79	70,19	25,42	93,21	68,39
	Romania	63,7	66,95	30,26	34,29	4,29	8,82	12,31
	Germany	1321	1472,45	958,08	357,90	359,68	461,82	312,95
	France	1126	1814,67	1698,17	1619,99	1442,95	1196,16	1166,03
AS ₁₃	Austria	234	289,18	174,39	76,95	124,09	107,03	78,16
	Poland	41,23	41,23	41,23	41,23	41,23	41,23	41,23
	Romania	0	0	0	0	0	0	0

Source:Authors calculations based on data available in State Aid Scoreboard, available at the following link http://ec.europa.eu/competition/state aid/scoreboard/non crisis en.html#overview

The above table presents the authorised ASO – for regional development, CRI and SMEs support evolution, that we consider corespondent to the Income Pillar, during 2007 – 2013 for each member state selected.

What we can firstly notice is the major gap between ASO authorised by the European Comission for France and ermany, compared to the rest of the member states analysed, a gap intending to be reduced.

The case of Romania and Austria is simillar, both of the countries registering very low values of authorised State Aid for regional development and RDI. Even if both countries registres simillar low values for ASO, there is an important difference between them regarding their economic competitiveness.

Reported to the analysed member states, Romania benefited from lower state aid authorised by the European Comission in the analysed period. From the ASO – Regional Development perspective, the difference between our country is incomparable with the other member states.

From the ASO – for RDI, Romania occupies one of the last positions after Germany, France and Austria and from the ASO – for SME's support perspective, Romania did not benefit at all from this kind of state aid, compared to the selected member states.

State Aid for Regional Development and for RDI plays a very efficient role only if they are used moderately and in proportion and if they are oriented to the most disadvataged regions of the EU or member state. In addition, they can contribute efficiently to the economic development of the disadvantaged areas only if they are oriented to encouraging more investments or economic activities to those regions.

If we are trying to make a connection between state aid level authorised by the European Commission for Germany and its competitiveness level regarded from the Income Pillar perspective we can state that they are directly proportional.

Our available data state that Germany is the most competitive economy out of the selected member states and it is the country that benefited the most from state aid for regional development and RDI. Germany's economy is a performant, dinamic, production driven economy and the fact that the german state focused on developing industrial parks and clusters is an explanation for the economic results and implicitly for the connection between state aid for regional development and RDI and competitiveness.

This type of policy referes to government's efforts to develop and support clusters from a certain region, and the instruments used to influence the behaviour of a certain industry are the following: import tariffs, certain sectors subsidies and schemes for promoting investments into RDI.

In our opinion, it is ideal if the governments would be oriented to supporting and developing clusters activity, rather than on authorising subsidies for certain industries. A policy that is oriented to creating new clusters still implies a certain form of targeting.

So, competitiveness implies a certain form of selectivity. To support a regions competitive advantage , the authorities must decide what kind of economic activities should support, and what are the economic activities left to manage with the market forces.

Inspired by the Sillicon Valley phenomenon, most of the governments tend to concentrate on high – tech clusters to improve their competitiveness level and in general this type of activities are considered advantages and therefor are stimulated. (Drucker, P. 1985)

The Romanian experience so far shows that clusters introducted favorable measures for certain industries and SMEs, but on the other side, there are few cluster initiavesthat function, although there is potential. For instance "Guidelines for implementing innovative clusters"financed by the Economis Ministery (2009) sets a list of industrial parks, innovation and technology transfer entities, universities, foreign and local investors, that by association may benefit from the cluster advantages. Even so, we can notice that at national level, this kind of initiatives are rare, and if there exists, there are just for accessing funds without a medium or long term strategy.

b. Main State Aid indicators regarded from Social Pillar perspective

In the following section will be presented the values for State Aid categories regarded from the Social Pillar perspective: State Aid for employment and State Aid for training (AS_{21} – AS_{22}) during 2007 – 2013, for each selected member state.

Tabelu nr. 4: ASO for employment $-AS_{21}$, ASO for training $-AS_{22}$ evolution regarded from the Social Pillar perspective, during 2007 - 2013, million Euro

ASO	MS	2007	2008	2009	2010	2011	2012	2013
	Germany	7,12	7,21	6,49	68,65	34,89	52,72	0,44
	France	453,7	518,05	528,99	500,96	582,95	558,57	613,31
AS ₂₁	Austria	5,05	5,96	4,29	0	0	0	0,36
	Poland	654,7	701,53	700,34	732,38	679,49	723,12	781,86
	Romania	0,62	0,69	0,21	0	0,05	0,18	0,03
	Germany	71,43	78,10	118,65	154,55	171,40	185,97	177,72
	France	27,65	30,63	102,31	82,13	96,74	58,87	83,59
AS ₂₂	Austria	10,12	18,01	27,66	32,32	29,62	28,66	26,76
	Poland	13,21	19,85	105,53	54,70	105,35	72,97	75,26
	Romania	0,71	0,79	0,03	0	0,56	0,61	0,09

Source: Author's calculations based on data available in State Aid Scoreboard, available at the following link

http://ec.europa.eu/competition/state_aid/scoreboard/non_crisis_en.html#overview

Tabel nr. 4 setss out the ASO for employment and ASO for training authorised by the European Commission evolution process, in the analysed period 2007 -2013.

At EU level, ASO for employment refer to state aid granted for recruiting disadvantaged workers taking the form of salary subventions, for hiring disabled workers taking the form of salary subventions and for covering the costs for employing disabled persons.

In this case we can notice a slightly change compared to the previous case, France and Poland have benefinted of ASO for employment higher values compared to the other member states.

The case of Poland is very relevant from this point of view. Poland is a country with significant disparities, but anyways, the most competitive Polish regions are fetured by a highly human capital level. Poland's situation is justified by it's ability to atract innovativ and creative human capital, and with the help of state aid granted for employment and training, Poland offers high quality cultural facilities and encourages social conections development. From the ASO regarded from the Social Pillar, the situation of Germany is different from that of France and Poland, that both encourage human capital investments. From the IAS perspective, Germany oriented its efforts to ensuring the improvement of life standards, especially in the context of developing social challenge. A special characteristic of the German economy is promoting entrepreneurship for young people, through offering support for the creation of entrepreneurial connections, through integrating some methods based on the experience of entrepreneurial education and developing new business academies. Promoting entrepreneuship with the young people helps rising the employment rate.

c. Main State Aid indicators regarded from Environmental Pillar perspective

In the next section, there will be presented the values registred for state aid categories regarded from the Environmental Pillar perspective - $(AS_{3.1})$ in the analysed period 2007 – 2013, for each of the selected member states.

Tabel nr. 5 : $AS_{3.1}$ - ASO for environment and energy evolution during 2007 – 2013, million Euro

Luio							
MS	2007	2008	2009	2010	2011	2012	2013
Germany	5543,02	6237,78	5968,69	5790,92	3745,04	4115,39	4705,59
France	154,65	154,65	154,65	154,65	154,65	154,65	154,65
Austria	702,54	702,54	702,54	702,54	702,54	702,54	702,54
Poland	217,29	217,29	217,29	217,29	217,29	217,29	217,29
Romania	14,21	14,21	14,21	14,21	14,21	14,21	14,21

Source: Authors calculations based on statistical data available in the State Aid Scoreboard, link http://ec.europa.eu/competition/state_aid/scoreboard/non_crisis_en.html#overview

From this indicator perspective, at EU level there are certain "objectives and targets to reach a sustainable growth for supporting the shift to an efficient economy from the resources point of view, competitive and with lower emissions. The main objective of state aid in this sector, is to ensure a competitive energetic system, inside a functional European energy market. Regarding this indicator, we can notice that at EU27 level there are important differences between the selected member states during the analysed period. The European Commission, authorised the highest ASO for environment and energy, compared to the other member states, followed by Austria, France, Poland and Romania.

compared to the other member states, followed by Austria, France, Poland and Romania. In the case of Romania, we can notice a slight increase of state aid authorised between 2011 – 2013, with important differences compared to the previous periode.

From IAE perspective, Germany aspires to being one of the most efficient economies from energetic perspective, to respect the environment protection rules and to maintain accessible prices for energy.

The rigurous implementation of the environment policy was an important step for maintaining the competitiveness of this sector.

4.Conclusions

The most important conclusions of this paper are the following:

- based on the evolution of the aggregated indicators we stated a competitivness ranking, the order being: Germany, France, Austria, Poland and Romania..
- as proposed, we managed to determine the relation between competitiveness of the Income Pillar and the corespondant state aid, analysing the evolution of the selected member states. This consists in applying a cluster policy, that referes to the governments efforts to develop and support clusters from a certainregion, and the instruments they are using are actually the instruments used for state aid: import tariffs, certain sectoral subventions, schemes for promoting RDI investments.
- the majority of governments tend to concentrate on high tech clusters to improve their competitiveness level, so they are granted state aid for regional development, RDI and for SMEs support and this is revealed from the perspective of the three pillars: income, social and environmental.
- at the selected member states level there are significant differences between authorised state aid. a nivelul SM studiate, există diferențe semnificative între AS autorizate de Comisia Europeană, acestea observându-se și în cazul competitivității SM analizate dine perspectiva celor trei piloni: venituri, social și ecologic.
- from IAV competitiveness perspective, Romania occupies the last position also being the member state with less granted state aid for regional development and RDI and also the state withh the least clusters. We may state that cluster initiatives are considered an instrument for improving the national and regional competitiveness. Cluster's "umbrella" concept, referes to the idea that with the help of clusters a nation may force economic development and promotion of cooperations between companies, universities, research institues, clients, competition and suppliers from a certain geographic region.
- at the oposite pole, Germany benefited the most from State Aid for regional development and RDI, reaching values 55 higher Romania. And of course, the competitiveness level is also the highest.
- from the Social Pillar perspective we determined a close connection between ASO for training and employment and the social competitiveness level for the analysed member states.
- this may embrace certain forms: in the case of Germany ASO for training expressed in promoting young entrepreneurship and integrating methods based on experience in entrepreneurial education and developing business cademies.
- from the social perspective, France and Poland are remarcable for high state aid granted, Poland offers high quality cultural facilities and encourages developing social connections.
- from IAE perspective, Romaia has a positive position, owing a competitive advantage in this field, that unfortunately isn't exploited at its maximum capacity. State aid granted for environment and energy follows o positive trend in the case of Romania, and a slight improvement of the environmental competitiveness was also reached.
- the successfull experiences of Germany and Austria from the environmental perspective (both competituveness) are coreleated to the authorised state aid, taht promotes and support a certain policy and a series of interesting programmes with major impact for environment and energetic sector, especially for sustainable energy field.

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