RECENT J. (2022), 67:059-066
https://doi.org/10.31926/RECENT.2022.67.059

Advantages and Disadvantages of the National Recovery and Resilience Plan

Zsolt TOTH
Transilvania University of Brașov, Romania, zsolt.toth@unitbv.ro
Ionela-Roxana PUIU
Transilvania University of Brașov, Romania, ionela.puiu@unitbv.ro
Shih-Shuan WANG
Transilvania University of Brașov, Romania, shih-shuan.wang@unitbv.ro
Mircea BOȘCOIANU
Transilvania University of Brașov, Romania, boscoianu.mircea@yahoo.com

Abstract
The National Recovery and Resilience Plan (PNRR) is part of the Next Generation EU project, through which the European Union (EU) wants to ensure the economic recovery of the 27 member states, as a reaction to the economic loss suffered following COVID-19 pandemic restrictive measures. The PNRR advantages are that Romania has been allocated almost 30 billion euros for the period 2021-2026, half grants and half loans. The EU borrows cheaply and gives us the money with the same low interest rate, in plus we get some free money. Romania has an obligation to implement many reforms, to raise quality standards and improve living standards. PNRR is the best thing in Romania's history, as it will develop us as a country far beyond what we were in 1989 when we were the only country in history known with zero debt. Romania has grown a lot economically in the last 30 years and the trend will continue. According to EU standards, the minimum wage must rise to 60% of the average wage, compared to 40% at present [1, 2, 3]. The PNRR disadvantages are that nothing is free, quality costs and hidden defects can occur. In general, cheap things are poor quality and should be avoided. PNRR is too rigid and we will probably not attract all the money allocated. We will have the same prices as in developed countries, and taxes will rise to the same level as theirs. Ordinary people think inflation is high and life is expensive. There will be higher and higher prices and it is not worth keeping money in the bank because interest rates are lower than inflation. Everyone is borrowing, although it is not good to borrow, we have high debts of 49% of GDP and most of the other EU countries have even higher debts. In recent years budget spending has been increasing too much and future generations will pay for the borrowed money. At this rate, if we have debts of over 60% of GDP, we cannot switch to the Euro currency and risk ending up like Greece, which has debts of 200% of GDP [1, 2].

Keywords
PNRR, EU, reforms, quality, development

1. Introduction

The National Recovery and Resilience Plan (PNRR) is part of the European Union's (EU) Next Generation EU programme to combat the negative effects of the COVID-19 pandemic. The Next Generation EU programme has allocated more than €800 billion to all EU countries, of which Romania has been allocated almost €30 billion, half of which are grants and half low interest loans. The EU has borrowed on the financial market on behalf of its member countries and charges the same interest on the countries as it pays itself [4].

At least 30% of EU funds for the period 2021-2027 will be allocated to the European Green Deal objectives, which will impose additional quality standards in the environmental sphere, increased digitisation and investment in the development of health systems [5].

We have chosen this topic to present both positive aspects of the PNRR, through cheap access to funding and implementation of higher quality standards, and negative aspects such as impoverishment through over-indebtedness and rising prices.

To achieve the proposed objective, it is intended to organize a brainstorming session with 5 PhD colleagues in which 50 ideas related to the title of the article will be presented. Grouping the ideas in 7 categories and two subcategories (true or false). Developing coherent paragraphs/sentences with their help, which will later serve as working variants (Fig. 1).

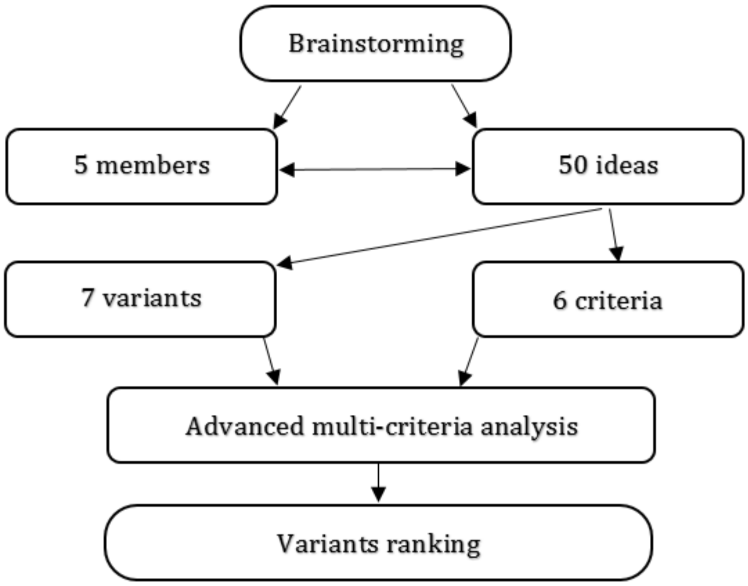

Fig. 1. Research stages

Conducting an advanced multi-criteria analysis in which six chosen criteria will be used to analyse the seven working variants, qualitatively and quantitatively. Comparing each criterion two by two giving a value of 1 for the most important and 0 for the least important. In the case of a tie between two criteria the value 1/2 (0.5) is given, as well as in the case of comparing the same two categories with each other. The weight of each criterion is calculated by a mathematical formula. Scores from 1 to 10 are given after analysing each criterion with each chosen variant.

The weights are multiplied by the scores and these values are added together for each variant. The score will lead to a final ranking, the variant with the highest score will be declared the winner [6].

2. Brainstorming Ideas and Their Development

During the brainstorming 50 ideas were listed, which were then filtered into seven categories, called variants. The ideas for each variant were divided into true and false. With the help of the grouped ideas paragraphs were developed, that will serve as further working variants.

The idea of the PNRR appeared after the COVID-19 pandemic crisis. Although the PNRR is too rigid, all EU countries have such a programme. The PNRR is the best thing in Romania's history because it will develop us as a country, although we will probably not attract all the money from the PNRR, because in the past Romania attracted just 60% of the allowed EU funds (Table 1).

Table 1. Variant A

Real ideas	False ideas
PNRR will develop us as a country PNRR is the best thing in the history of Romania All EU countries have a PNRR We will not attract all the money from PNRR PNRR started with the COVID-19 pandemic	The PNRR is too rigid

Germany wants to subjugate the whole of Europe through the front called the EU, which borrows cheaply and gives us the money at low interest. Money does not mean happiness and the EU is just fooling us. This is just another nasty idea of the EU, which wants to buy us (Table 2).

Table 2. Variant B

Real ideas	False ideas
The EU borrows cheaply and gives us the money at low interest	The European Union (EU) is fooling us Europeans buy us Germany wants to subjugate all of Europe Another nasty EU idea Money does not mean happiness

Since Romania in 1989, during Ceaușescu's time, was the only country in history with zero debt, many people consider that it was better under communism. But Romania has grown a lot economically in the last 30 years and the trend will continue. In the future, according to EU standards, the minimum wage should rise to 60% of the average wage, compared to 40% today (Table 3).

Table 3. Variant C

Real ideas	False ideas
Romania has grown a lot economically in the last 30 years Romania in 1989, during Ceaușescu's time, was the only country in history with zero debt They need to raise the minimum wage to 60% of the average wage	It was better in communism

Everyone borrows, although it is not good to borrow. We have high debts of 49% of GDP and other EU countries have even higher debts. In recent years budget spending, especially pensions, have risen too much and future generations will have to pay back the borrowed money. If we will have over 60% of GDP debts, we cannot switch to the Euro currency and risk becoming like Greece (Table 4).

Table 4. Variant D

Real ideas	False ideas
Other EU countries have higher debts We have debts of 49% of GDP With debts above 60% of GDP we cannot switch to the Euro currency We have high debts It is not good to borrow What if we end up like Greece? Everyone borrows Future generations will pay back the borrowed money	Budget spending is growing too much, especially pensions

According to EU statistics in Romania, food is the cheapest, even though ordinary people consider inflation high and life expensive. There will be higher and higher prices and it is not worth keeping money in the bank because interest rates are lower than inflation. Specialists recommend that in these times it is better to invest in mutual funds that really reflect the market trend (Table 5).

Table 5. Variant E

Real ideas	False ideas
Inflation is high Life is expensive There will be higher and higher prices It's good to invest in mutual funds Interest rates are low EU says food is cheapest in Romania	It is not worth keeping the money in the bank

The EU must subsidise us if they want higher quality standards. To achieve this we get free money from the EU, but there is an old saying that nothing is free because what is good is expensive and what is expensive is not necessarily healthy. Quality standards have always risen and they must rise further because as a rule what is cheap is bad and not qualitative, as a general conclusion cheap and good is not possible (Table 6).

Table 6. Variant F

Real ideas	False ideas
Quality standards have always risen Quality standards need to keep rising What is expensive is not necessarily healthy We also get free money	Cheap is not quality Cheap and good can't be Cheap is bad Good is expensive They must subsidize us if they want higher quality standards Nothing is free

Sooner or later, we will have the same prices as in developed countries, we must catch up, what we don't know is when the wages will be like in the West. For these the EU is forcing many reforms on us, they want us to do what they want although people think they do what they want with us. To have the same degree of integration with the developed countries at some point taxes will have to increase to the same level as theirs, higher wages should be taxed more (Table 7).

Table 7. Variant G

Real ideas	False ideas
When will wages be like in the West ? We must catch up with them It is forcing a lot of reforms Taxes will go up We must tax higher wages more	We will have the same prices as in developed countries They do what they want with us They want us to do what they want

3. A Multi-Criteria Analysis for the Working Variants

3.1. Establishing the analysis criteria and determining the weight of each criterion

Six analysis criteria were established:

Criterion 1 (C_1): Implications for logistics management
Criterion 2 (C_2): Implications for the digitisation of procurement
Criterion 3 (C_3): Implications for the European Green Deal
Criterion 4 (C_4): Implications for the PNRR
Criterion 5 (C_5): Impact on quality engineering
Criterion 6 (C_6): Impact on electric forklift truck refurbishment business

The criteria are analysed two by two, giving a value of 1 for the most important criterion and 0 for the least important. In case of equality between criteria and in case of comparison of the same criteria with each other, the value 1/2 (0.5) is used (Table 8).

Table 8. Determining each criterion's weight [6]

	C_1	C_2	C_3	C_4	C_5	C_6	Total	Level	Weight
C_1	1/2	1	0	0	1	1	3.5	3	2
C_2	0	1/2	0	0	1	1	2.5	4	1.17
C_3	1	1	1/2	0	1	1	4.5	2	3.25
C_4	1	1	1	1/2	1	1	5.5	1	5.33
C_5	0	0	0	0	1/2	0	0.5	6	0.13
C_6	0	0	0	0	1	1/2	1.5	5	0.57

Mathematical formula chosen [6]:

$$P_i = \frac{\mathrm{p} + \Delta\mathrm{p} + \mathrm{m} + 0.5}{-\Delta\mathrm{q} + \frac{Nr_{criteria}}{2}} \tag{1}$$

in which:

P_i – weight
p – criterion total
Δp – the difference between considered criterion's total and the lowest total
m – number of criteria passed, by score
Δq – the difference between considered criterion's total and the highest total
$Nr_{criteria}$ – total number of criteria

C_1: (3.5 + 3 + 3 + 0.5) / [-(-2) + 6/2] = 10 / 5 = 2
C_2: (2.5 + 2 + 2 + 0.5) / [-(-3) + 6/2] = 7 / 6 = 1.17
C_3: (4.5 + 4 + 4 + 0.5) / [-(-1) + 6/2] = 13 / 4 = 3.25
C_4: (5.5 + 5 + 5 + 0.5) / [-(-0) + 6/2] = 16 / 3 = 5.33
C_5: (0.5 + 0 + 0 + 0.5) / [-(-5) + 6/2] = 1 / 8 = 0.13
C_6: (1.5 + 1 + 1 + 0.5) / [-(-4) + 6/2] = 4 / 7 = 0.57

3.2. Establishing the final ranking of the variants analysed

Scores (S_i) from 1 to 10 are given after analysing each criterion with each working variant (Table 9).

Table 9. Criteria scores according to variants

	V (A)	V (B)	V (C)	V (D)	V (E)	V (F)	V (G)
Criterion	S_i	S_i	S_i	S_i	S_i	S_i	S_i
C_1	8	7	8	8	7	9	9
C_2	7	8	8	9	8	9	9
C_3	9	9	9	8	8	10	8
C_4	10	8	9	7	8	10	9
C_5	6	9	8	8	7	8	8
C_6	7	8	8	8	7	8	8

Calculate the consequence matrix as a product of the scores and weights for each variant, summing them up to a total value and establishing a final ranking (Table 10).

Table 10. Matrix of consequences [6]

	V (A)	V (B)	V (C)	V (D)	V (E)	V (F)	V (G)
Criterion	$S_i \times P_i$	$S_i \times P_i$	$S_i \times P_i$	$S_i \times P_i$	$S_i \times P_i$	$S_i \times P_i$	$S_i \times P_i$
C_1	16	14	16	16	14	18	18
C_2	8.19	9.36	9.36	10.53	9.36	10.53	10.53
C_3	29.25	29.25	29.25	26	26	32.50	26
C_4	53.30	42.64	47.97	37.31	42.64	53.30	47.97
C_5	0.78	1.17	1.04	1.04	0.91	1.04	1.04
C_6	3.99	4.56	4.56	4.56	3.99	4.56	4.56
Total value	111.51	100.98	108.18	95.44	96.90	119.93	108.10
Final ranking	(2)	(5)	(3)	(7)	(6)	(1)	(4)

Place 1 - Variant F: the EU must subsidise us if they want higher quality standards. To achieve this we get free money from the EU, but there is an old saying that nothing is free because what is good is expensive and what is expensive is not necessarily healthy. Quality standards have always risen and they must rise further because as a rule what is cheap is bad and not qualitative, as a general conclusion cheap and good is not possible.

Place 2 - Variant A
Place 3 - Variant C
Place 4 - Variant G
Place 5 - Variant B
Place 6 - Variant E
Place 7 - Variant D

4. Conclusions

The objective of presenting the positive and negative aspects of PNRR, through the method of brainstorming and advanced multi-criteria analysis, has been achieved. The 1st place option best expresses the advantage of accessing cheap money through grants, in order to quickly increase the quality standards but also the disadvantage of higher prices that come with the increase in the level of indebtedness and the risk of increasing inefficient investments. It provides a quick overview through a simple and suggestive qualitative analysis of the impact of EU cohesion policies.

Accession to the European Union is a magnet for poor countries, which benefit from European funds and private investment in search of new and cheap resources, both natural and human. This can lead to an improvement in the differences between countries, with the GDP of poorer countries growing faster than that of richer ones.

Developed countries are facing the problem of economic maturity and ageing, as their growth rates are declining. These countries need large investments in research and development, access to cheap resources from less developed countries and regions, and finally borrowing to finance the push for economic growth beyond potential.

To be able to access this additional funding, the misguided idea of a budget deficit of maximum 3% of GDP has been agreed at government level. Although 3% seems a small figure, it should be related to the level of national budget revenues, which at EU level vary between 30% of GDP (in poor countries) and 45% of GDP (in rich countries). The real annual budget deficit varies between 10% and 7% of national budget revenues, which represents an accelerated increase in the tax burden, especially for poorer countries.

Unfortunately, poorer countries have copied this wrong model of developed countries and suffer the most, because in crisis situations they are the first to exceed these limits. Normally the budget deficit should be 0 (zero), with budget surpluses being preferable in boom years. The money collected in boom years should be used to finance deficits in down years.

The indebtedness of countries only overheats economies, generating inflation, and it is only a matter of time before a natural correction occurs, called a crisis. The strange thing is that developed countries are the most indebted and poor countries are less indebted, the latter often mistakenly believing that indebtedness leads to prosperity. This is also the case for Romania, which currently has the highest GDP (240 billion euros) in history and the highest public debt in history (almost 50% of GDP). We are not talking about serious economic growth but quantitative growth, which is at the expense of quality.

Access by developed countries to cheap natural and human resources in developing countries is more difficult because of borders, barriers and differences in cohesion. The idea of geopolitical constructs, like the EU, makes these differences lessen to the benefit of both entities. Rich countries continue their development by using poor countries and poor countries accelerate their development based on know-how and financing from economically mature countries.

As in life, some win and some lose. Developed EU countries contribute more financially while poor countries benefit more in terms of allocation of EU funds, but in practice, developed countries benefit more from the whole EU system through easier access to human and natural resources. The labour force chasing higher wages can easily leave for developed countries, leaving the poorer countries without skilled labour, with ageing populations and serious social problems.

Most of the European funds allocated to poor countries for investment go into machinery and equipment brought in from developed countries and the rest of the money that remains goes largely into the consumption of imported products and services, as poor countries have large trade deficits with their donors.

The two poles of the EU funds are Germany, the biggest donor, and Poland, the biggest beneficiary. Strangely, the countries in question are neighbours and good friends, and throughout history Germany has helped Poland by ceding its current territory. A comparison can be made between the democracies in the West and the former communist countries in the East, which have been struggling for 30 years to make up for historical differences.

Germany has had to finance countries like Poland to avoid an accelerated invasion of labour from the East, and in addition to public EU funds there has been much private investment in search of cheap resources and new markets. Germany has experience of developing poor territories, let's not forget the union of the FRG and GDR in 1990, the EU being nothing more than an extrapolation of that achievement. A shocking trend is that some old people's homes in Germany are closing and moving to Poland, also as a cost-cutting strategy, which can be interpreted as a strategy to deport the elderly to the East.

We consider the mobility of human resources as the most important aspect to be analysed. There are poor (beneficiary) countries like Romania that invest in the university studies of its citizens and lose them very easily through emigration. We are dealing with major investments in the education system, which do not ensure the permanence and stability of a qualified workforce. Developed (tax-paying) countries benefit practically for free from a young and qualified workforce, which helps progress, economic development and solving social problems.

The whole mechanism is more like the diversified portfolio of an investment fund where investors (taxpayers) are careful not to spend more than they can earn, with each component of the fund being analysed in detail. No doubt we are talking about a win-win situation, but for developed countries "WIN" is written with "capital letters".

The main contributions of this research are related to analysing the advantages and disadvantages of PNRR for the future of Romania. A brainstorming session with 5 fellow doctoral students from the field of engineering and management provides a broad multidisciplinary vision. The application of an advanced multi-criteria analysis ensures the quality of the research by establishing a final hierarchy of options resulting from the ideas put forward. A mathematical model was chosen for the measurement of values and the criteria analysed were chosen based on the practical experience of the members.

The advantages of this research are expressed by the simplicity of the understanding of the principles of the functioning of the EU and the increase of cohesion between the member states, with the logistical advantages and financial disadvantages for developed countries and the financial advantages and disadvantages of emerging economies for poorer and newly acceded countries. The realization of a simple brainstorming session, the use of a small number of criteria and the mathematical model chosen are providing a quick hierarchy of the variables resulting from the ideas presented. The conclusions of the research are based on the results obtained but also on the multidisciplinary background and experience of the authors.

The limits of this research are related to the PNRR principles, as the EU plan for Romania for the period 2021-2026, with the 15 negotiated implementation chapters. Limitations are also given by the brainstorming method, in which the subjects were PhD colleagues, as opposed to the Delphi method which involves specialists. The Delphi method can provide an in-depth and detailed picture of the evolution of the Romanian economy in the coming years, as specialists in management positions are best placed to comment on the implications of the PNRR for all branches of the economy. The multi-criteria analysis involves only six criteria, a much larger number of criteria could have given a much higher value on the outcome of the research. The hierarchy is relative because in some cases the difference between the variants is small in terms of the total value calculated.

The problem is that the implementation of the PNRR is just at the beginning, we are in the midst of a pandemic and a supply chain crisis, which are causing a lot of volatility and turbulence in the markets with long-term impact. Commodity prices are rising sharply again due to the war generated by Russia in Ukraine, following a dramatic rise in recent years due to the supply chain blockade caused by the pandemic.

As future directions, in the next five years we will see the implementation of the PNRR, which will generate much analysis and discussion. Future results will be the subject of further research, which will take into consideration new variables that will appear, the war in Ukraine or the galloping inflation. It is interesting to analyse what will happen from 2027 when the implementation of the PNRR will be completed and the additional European funds will disappear. Will the EU continue to expand the EU budget as a percentage of total GDP? Will we be able to talk about an EU government and army? Will the EU at some point function as a country in its own right?

In terms of managerial implications, the PNRR will help develop infrastructure and optimise logistical processes, which will further finance companies to increase turnover. Management will have to focus on the implementation and continuous increase of quality standards, compliance with legislation, investment in research, development and innovation. Romania's country rating must increase, it is time for foreign investment to increase and allow more multinational companies to enter the market. In the next 20 years, Romania can develop at an accelerated pace by copying the models of other developed countries, but in the long term this can only be achieved through additional funding of the research and development sector, in strong collaboration with the educational system, universities and research institutes.

References

1. https://mfe.gov.ro/pnrr. Accessed 2022-02-27
2. https://mfe.gov.ro/planul-national-de-redresare-si-rezilienta-al-romaniei-aprobat-de-comisia-europeana. Accessed 2022-03-04
3. https://ec.europa.eu/commission/presscorner/detail/ro/ip_21_4876. Accessed 2022-03-04
4. https://ec.europa.eu/info/strategy/recovery-plan-europe_en. Accessed: 2022-02-19
5. https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_ro. Accessed 2022-02-20
6. Bobancu Ş. (2015): *Creativitate şi Inventică* (*Creativity and Inventics*). Editura Universității Transilvania din Braşov (in Romanian)
7. Boşcoianu M., Prelipcean G., Lupan M. (2018): *Innovation enterprise as a vehicle for sustainable development - A general framework for the design of typical strategies based on enterprise systems engineering, dynamic capabilities, and option thinking*. Journal of Cleaner Production, ISSN 0959-6526, Vol. 172, pp. 3498-3507, https://doi.org/10.1016/j.jclepro.2017.06.120
8. Prelipcean G., Boşcoianu M. (2020): *Risk Analysis of a Hedge Fund Oriented on Sustainable and Responsible Investments for Emerging Markets*. Amfiteatru Economic, ISSN 1582-9146, Vol. 22, no. 55, pp. 653-667, DOI: 10.24818/EA/2020/55/653, http://www.amfiteatrueconomic.ro/temp/Article_2923.pdf
9. Prelipcean G., Boscoianu M., Lupan M., Nastase C. (2014): *Innovative Financing Solutions Based on Venture Capital and Private Equity to Support the Development of Entrepreneurship in Romania*. Transformation in Business and Economics, ISSN 1648-4460, Vol. 13, no. 3C, pp. 331-347, http://www.transformations.knf.vu.lt/33c/article/inno
10. Vrăjitoru E.S., Boşcoianu M., Boşcoianu E.C. (2021): *Aligning Complementary Funding Opportunities – through TAS – the Smart Answer to the Challenges of Industry 4.0 Transformation*. RECENT, ISSN 1582-0246, Vol. 22, no. 1(63), pp. 50-54, https://doi.org/10.31926/RECENT.2021.63.050
11. Puiu I.R., Boşcoianu M., Vrăjitoru E.S., Boşcoianu E.C. (2021): *Procurement in Automotive Industry*. RECENT, ISSN 1582-0246, Vol. 22, no. 2(64), pp.69-73, https://doi.org/10.31926/RECENT.2021.64.069
12. https://www.consilium.europa.eu/ro/policies/green-deal. Accessed 2022-02-25
13. Linstone H.A., Turoff M. (1975): *The Delphi Method: Techniques and Applications.* Addison Wesley Publishing Company, First Edition, ISBN 978-0201042948
14. Wilson C. (2013): *Brainstorming and Beyond: A User-Centered Design Method.* Elsevier Science, ISBN 9780124071667
15. Howard C. (2017): *Thinking Like a Political Scientist: A Practical Guide to Research Methods.* University of Chicago Press, ISBN 9780226327686
16. https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility/recovery-and-resilience-plan-romania_en. Accessed 2022-03-15