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Management Challenges in Financial Crisis. Macroeconomy Imbalances in South European Ecountries. A straightforward Indicator of Social Prosperity and its Implication on Management

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Abstract

The financial crisis outbreak in the United States in year 2007, caused serious spill over effects around the globe. European Union countries were affected severely. Economic activity and subsequently, domestic demand dropped sharply. Corporate profits diminished, whereas business mortality rates peaked. Management had to adjust to an unknown business environment with questionable prospects. European Union (EU) is characterized by an abundance of Small and Medium Sized Enterprises (SME) that cannot afford executives with profound knowledge on macroeconomic variables and its implications to real economy activity. This handicap deprives them of useful input in corporate strategy. Countries that were adversely affected by the world financial crisis include Greece, Portugal, Spain and Cyprus. These countries share three common features; geographical location in the south of the EU, common currency (the Euro) and incapability to fund budget deficits and refinance their public debt. EU had to address the latter feature urgently, since it casted serious doubts on the prospects of the Euro and affected seriously European economic activity. EU with the assistance of the International Monetary Fund (IMF), run Economic Adjustment Programmes for the four countries (Note: The Spanish programme was run solely from EU authorities). The effectiveness of these programmes remains a matter of intense debate. Many suggest that these programmes were solely financially oriented and had serious adverse implications to social prosperity. In management terms, social prosperity is directly related to corporate decision making. Investment decisions, levels of production and employment are only some of the variables affected. This paper attempts to suggest a straightforward index that assesses social prosperity, namely the Social Prosperity Index (SPI). This tool could assist management in decision making during turbulent times.

*Keywords:*Management; European Union; Economic Indicators; Social Prosperity Index; Economic Adjustment Programmes.

1. Introduction

The US crisis spillover effect influenced the globe dramatically. Investors revisited the fundamentals. Suddenly, debt levels, budget deficits and trade imbalances attracted incremented interest. The creditworthiness of sovereigns was challenged. These phenomena affected the private sector. Corporate profits diminished, whereas business mortality rates peaked. This environment posed challenges to management.

EU business environment has a distinguishing characteristic; the role of SME. The SMEs account for 99.8% of all enterprises, 57.4% of value added and 66.8% of employment, whereas 93% of EU enterprises have less than 10 employees [1]. Corporate management of these enterprises does not have access to resources (executives, databases, methodology) that could assist effective decision making in turbulent times.

South Europe was seriously affected by the financial crisis. Overwhelming research work suggests that the financial crisis in the south EU-member countries is routed in competitiveness differences, trade and capital imbalances, as well as ballooning budget deficits and debt levels [2-3]. Growing deficits of the current account were a common characteristic for all peripheral Eurozone countries [4-5]. Public debt affects negatively economy's growth rates and potential. Many researchers stress the consequences to private capital and investments, as well as to the future generations' well-being [6-7].

European Union (EU) was challenged in 2010, for the first time in its history, to shape and implement an economic adjustment programme to contest a debt crisis in a member state, Greece. Portugal was the next victim of the turbulence, where the financial crisis shared similar features. Spain was unable to confront the capitalization requirements of the national banking system, whereas Cyprus was the first EU member state that was forced to implement "haircut" to domestic deposits (for amounts over the "securitized" threshold of 100.000,00 euros).

The programmes implemented in these countries aimed at the restoration of a climate of confidence, the maintenance of economic stability, the improvement of the public finances and competitiveness. The general objective was the rebound to growth rates [8]. Someone can easily depict the

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financially oriented scope of the programmes. However, the societies of these countries still suffer from the consequences of the implementation. Businesses argue that even though public debt can be refinanced, and banking system returned to normality, enterprises struggle to survive and flourish. Corporate management of small enterprises needs a compass to decide on investment, employment and production levels.

The financial consequences accruing from the financial crisis and the economic adjustment programmes implementation is well presented in the literature [9-10]. Nevertheless, social consequences also influence economic activity and business action. Brain drain for example, the phenomenon of migration of skilled workforce, affects economy performance in the long run [11-12]. Social consequences can be better evaluated using social rather economic indicators [13]. Economic rebound does not concise with social one [14]. Human geographers and economists challenge the mainstream focus on economic indicators [15-17].

Within this endeavor we revisit the SPI index, already presented in previous work [8]. SPI is a composite index. Composite indices are easier to understand and apply. They have been proved quite useful for country benchmarking [18].

This paper aims to provide an easy to use tool for corporate management that could be applied to ascertain social prosperity and therefore business potential.

2. Material and method

2.1 Social Prosperity Index(SPI) Background

Under SPI framework [8], social prosperity relies on six pillars; financial prosperity, employment, healthcare, education, governance and lastly, entrepreneurship. These pillars are comprised of indices, presented in the appendix (Tables 1 & 2). SPI is a composite index with equal weighting of all indices (see calculus in the Appendix - Equation 1 and Tables 3-13). Indices that present phenomena of negative nature are weighed also negatively in the calculus. SPI is expressed in percentage points and does not have any bounds or critical values. However, the more incremented values the better social prosperity levels are implied.

Data were derived from World Bank, OECD, Transparency International and Eurostat. Access is easy and free of any charge. This is a plus for the proposed index. Education pillar, despite its importance, was omitted from the calculus since there was no data availability for Greece. Additionally, "Access to funding" index debuted in year 2013, so it was not included in this analysis. Greece SPI indices were not included in the regression due to missing data. SPSS and MS-Excel assisted the calculus.

This work aims to reinforce the usefulness of SPI by testing its predictability of better business conditions. Business conditions are proxied by enterprises birth rate (BR). SPI predictability is proxied by lagged values of one and two years. SPI comprises twelve indices; inevitably BR was adjusted accordingly so that BR values correspond to SPI counterparts. The calculus of the SPI index is presented in the Appendix (Tables 3-13).

2.2 SPI Predictability

The equation tested (1) is presented below. Birth rate (BR) is regressed against SPI values of the previous one and two years respectively.

$$BR_n = SPI_{n-1} + SPI_{n-2} + e \quad (1)$$

This paper suggests this approach and runs the above regression on a small scale, namely for a time period covering years 2009-2016.

According to the theory discussed so far, a positive relationship is anticipated. SPI variables, if statistically significant, could provide guidance for future business prospects.

3. Results and discussion

The regression analysis presented in Tables 1-3supports a positive relationship between SPI and Birth Rates (BR) of enterprises.

The regression equation is statistically significant, as presented in Table 2. The explained variability is moderate (R square value in Table 1). The coefficients are statistically significant and positively related to the dependent variable. As anticipated the magnitude of the most recent SPI figure is more important in absolute value terms (SPI_1 > SPI_2 in Table 3).

The limitations of this analysis relate to the small sampling period and country sample. The constant in the regression equation is statistically important which implies other factors that influence the dependent variable and are not captured by the proposed model.

Table 1. Model Summary

Model	R	R Square	Adjusted R Square	Std Error of the Estimate
1	.387	.15	.037	41.43232

Table 2 ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regressions	4542.999	2	2271.499	1.323	.296
Residual	25749.561	15	1716.637		
Total	30292.560	17			

Table 3 Coefficients

Model	Unstandardized Coefficients		Standardised Coefficient	t	Sig.
	B	Std.Error	Beta		
Constant	-110.477	147.283		-.75	.465
SPI_1 (n-1)	.478	.362	.319	1.322	.206
SPI_2 (n-2)	.262	.370	.171	.709	.489

4. Conclusions

Contemporary macroeconomy imbalances are quite challenging and complex for all enterprises. EU distinguishing characteristic is SME's importance in the economy. The small size and subsequent few resources are considered to be an impediment to ascertain business conditions. Corporate management is challenged by this handicap.

This paper is based on a previous work of the authors [8]. It is argued that business conditions should not be judged on purely economic criteria. There is growing literature on the social dimensions of the economy, discussed briefly in the first section. Social prosperity and business flourishing are interrelated. On previously

published work [8] social prosperity is captured by a composite index. This index comprises six pillars; financial prosperity, employment, healthcare, education, governance and lastly, entrepreneurship. These pillars affect disposable income, general economic activity, business conditions. These variables determine to a great extent demand and turnover. If corporate management knows the tendency of social prosperity then it can adjust investment strategy, employment and production levels accordingly.

This paper embarks on an effort to predict future business prospects by lagged SPI values. Enhanced business prospects are envisaged via business Birth Rates (BR). If SPI indices can predict future positive business prospects, then this straightforward index can prove a valuable, free of charge and easy to apply tool, to predict future business conditions.

The above suggestion is validated by the dataset. SPI indexes can predict positive business prospects. The variability explained by our model is nearly 15%. The regression is statistically significant at all conventional levels (10%, 5%, 1%). SPI of the preceded year explains better Birth Rates with a beta value of 0.478, whereas SPI index of the 2-year lag has a beta of 0.262. Both variables are statistically significant at all conventional levels.

The model also includes a constant of statistical significance. This implies the existence of other factors that explain the dependent variable and have not been captured by the model (1).

The implications of this study are quite interesting for corporate management. Business environment became extremely variable and difficult to grasp. Many enterprises do not have, or cannot afford to employ, executives with extensive expertise that can guide them through turbulent times. SPI can serve us a predictor of the future state of business climate. It is anticipated that business climate is properly addressed with business birth rates.

SPI can also be developed on sovereign basis. In this case, an enterprise can shape a view of an individual market status. The conclusions are limited by the small timeframe of the study, as well as the relatively few countries involved. The south European countries that had adopted Economic Adjustment Programmes were opted, based on the pattern of a previous work [8]. It would be interesting to expand this methodology further and compare the validity of the conclusions.

Finally, we conclude that SPI index can serve as a straightforward tool for corporate management decisions.

References

1. European Commission (2016) “Annual Report on European SMEs 2015/2016”, November 2016.
2. Blundell-Wignall, A. (2012) “Solving the financial and sovereign debt crisis in Europe”, OECD Journal: Financial Market Trends, no 2, pp. 201–224.
3. Hallet H.A. and Oliva J.C.M., (2015) “The importance of trade and capital imbalances in the European debt crisis”, Journal of Policy Modeling, vol.37, pp.229-252.
4. Sklias P., R. S. and Maris G. (2014) “Keynes and the Eurozone’s Crisis: Towards a Fiscal Union”, Elsevier, Procedia Economics and Finance, vol.9, pp. 66–73.
5. Guerreiro, D. (2014) “Is the European debt crisis a mere balance of payments crisis? Economic Modelling”, vol.44, pp.S50-S56.
6. Modigliani, F. (1961) “Long-run implications of alternative fiscal policies and the burden of the national debt”, The Economic Journal, vol.71, no 284, pp. 730-755.
7. Diamond, P. (1965) “National Debt in a Neoclassical Growth Model”, American Economic Review, vol. 55, no 5, pp. 1126–1150.
8. Zoumpoulidis V., Simitsis G., Bilmpili V. (2018) “Effectiveness of the Economic Adjustment Programmes for Debt Crises Implemented in the Southern European Union Countries”, EBEEC 2018, KnE Publishing.
9. OECD, 2017a. Household disposable income (indicator). doi: http://dx.doi.org/10.1787/dd50eddd-en
10. OECD, 2017b. Real GDP forecast (indicator). doi: http://dx.doi.org/10.1787/1f84150b-en
11. Labrianidis, L., (2011) “Investing in Leaving: The Greek Case of International Migration of Professionals in the Globalization Era” Kritiki, Athens (in Greek).
12. Labrianidis, L., Sykas, T., (2015) “Why high school students aspire to emigrate: evidence from Greece” Journal of International Migration and Integration http://dx.doi.org/10.1007/s12134-015-0468-3.
13. Mohseni-Cheraghlou, A.,(2016) “The aftermath of financial crises: a look on human andsocial wellbeing” World Development vol.87, pp. 88–106.
14. Boarini, R., Johansson, A., Mira d'Ercole, M., (2006) “Alternative measures of well-being”,Social, Employment and Migration Working Papers 33. Organization for EconomicCooperation and Development, Paris, France. Brennan.
15. Dasgupta, P., (2000) “Valuation and evaluation: Measuring the quality of life and evaluating policy” Background paper prepared for the World Bank’s annual World Development Report, World Bank.
16. Dunford, M., (2005) “Growth, inequality and cohesion: a comment on the Sapir Report” Journal of Regional Studies, vol.39, pp.972–978.
17. Murias, P., Novello, S., Martinez, F., (2012) “The regions of economic well-being in Italyand Spain”, Journal of Regional Studies, vol.46 (6), pp.793–816.
18. Saltelli A. (2007) “Composite indicators between analysis and advocacy”, Social Indicators Research, vol.81, pp.65-77.

Appendix

Table 1 Pillars of social prosperity.

Financial Prosperity	Employment	Healthcare
Real GDP Growth Rate	Unemployment	Healthcare Expenditure
Government Deficit / Surplus (% of GDP)	Employment	(% of Public to Total
Balance of Payments. Deficit / Surplus (% GDP)		Spending)

Table 2 Pillars of social prosperity (cont.)

Education	Governance	Entrepreneurship
Total Expenditure to Public Spending	Transparency Index	Access to Funding
	Government Effectiveness (WGI)	Foreign Direct
	Political Stability and Absence of Violence (WGI)	Investment as % GDP

Source: Authors' own work

1. "Access to Funding" is a survey administered by the European Commission to assess funding conditions in the member states from year 2013 and onwards.
2. WGI - Worldwide Governance Indicators, the survey is administered by World Bank

Equation 1

$$SPI = \sum_{i=1}^{n} w_i * index_i \qquad (1)$$

Notes for the calculus:

The effect of each index is either positive (e.g., Employment) or negative (e.g., Unemployment). Consequently, the higher the value of the index is, the better the attained classification. While some indices have the virtue of a maximum value, like employment (since it cannot exceed the threshold value of 100%), there are others that could theoretically expand beyond the threshold value of 100 in a percentage scale (e.g., Foreign Direct Investment as % GDP). This fact has a consequence that SPI index can only be applied on a comparability mode among sovereigns without possessing a maximum value.

Table 3 Social Prosperity Index (2009-2016)

Country	2009	2010	2011	2012	2013	2014	2015	2016
Greece	240,83	237,39	222,63	215,61	218,13	233,70	232,68	241,95
Portugal	323,66	323,64	321,26	329,81	332,35	335,70	349,28	365,62
Spain	272,82	280,78	294,65	285,31	289,04	303,78	311,54	321,27
Cyprus	322,39	370,17	281,27	340,83	272,91	290,38	342,65	323,82

Table 4 Real GDP Growth Rate

Country	2009	2010	2011	2012	2013	2014	2015	2016
Greece	-4,30%	-5,50%	-9,10%	-7,30%	-3,20%	0,40%	-0,20%	0,00%
Portugal	-3,00%	1,90%	-1,80%	-4,00%	-1,10%	0,90%	1,60%	1,40%
Spain	-3,60%	0,00%	-1,00%	-2,90%	-1,70%	1,40%	3,40%	3,30%
Cyprus	-1,80%	1,30%	0,30%	-3,20%	-6,00%	-1,50%	1,70%	2,80%

Source: Eurostat

Table 5 Budget deficit or surplus as percent of GDP.

Country	2009	2010	2011	2012	2013	2014	2015	2016
Greece	-15,10%	-11,20%	-10,30%	-8,90%	-13,10%	-3,70%	-5,90%	0,70%
Portugal	-9,80%	-11,20%	-7,40%	-5,70%	-4,80%	-7,20%	-4,40%	-2,00%
Spain	-11,00%	-9,40%	-9,60%	-10,50%	-7,00%	-6,00%	-5,10%	-4,50%
Cyprus	-5,40%	-4,70%	-5,70%	-5,60%	-5,10%	-8,80%	-1,20%	0,40%

Source: Eurostat

Table 6 Balance of payments – deficits or surpluses as % of GDP.

Country	2009	2010	2011	2012	2013	2014	2015	2016
Greece	-12,30%	-11,40%	-10,00%	-3,80%	-2,00%	-1,60%	0,10%	-0,60%
Portugal	-10,40%	-10,10%	-6,00%	-1,80%	1,60%	0,10%	0,10%	0,80%
Spain	-4,30%	-3,90%	-3,20%	-0,20%	1,50%	1,10%	1,40%	2,00%
Cyprus	-7,70%	-11,30%	-4,10%	-6,00%	-4,90%	-4,30%	-2,90%	-5,30%

Source: Eurostat

Table 7 Unemployment.

Country	2009	2010	2011	2012	2013	2014	2015	2016
Greece	9,60%	12,70%	17,90%	24,50%	27,50%	26,50%	24,90%	23,60%
Portugal	10,70%	12,00%	12,90%	15,80%	16,40%	14,10%	12,60%	11,20%
Spain	17,90%	19,90%	21,40%	24,80%	26,10%	24,50%	22,10%	19,60%
Cyprus	5,40%	6,30%	7,90%	11,90%	15,90%	16,10%	15,00%	13,00%

Source: Eurostat

Table 8 Employment (age 20-64).

Country	2009	2010	2011	2012	2013	2014	2015	2016
Greece	65,60%	63,80%	59,60%	55,00%	52,90%	53,30%	54,90%	56,20%
Portugal	71,10%	70,30%	68,80%	66,30%	65,40%	67,60%	69,10%	70,60%
Spain	64,00%	62,80%	62,00%	59,60%	58,60%	59,90%	62,00%	63,90%
Cyprus	75,30%	75,00%	73,40%	70,20%	67,20%	67,60%	67,90%	68,80%

Source: Eurostat

Table 9 Public spending to total healthcare expenditure.

Country	2009	2010	2011	2012	2013	2014	2015	2016
Greece	68,53%	69,05%	65,97%	66,04%	61,78%	57,99%	59,09%	59,25%
Portugal	69,92%	69,77%	67,69%	65,57%	66,92%	66,08%	66,22%	66,24%
Spain	75,40%	74,78%	73,79%	72,20%	71,08%	70,01%	71,03%	70,60%
Cyprus	44,73%	47,35%	46,53%	45,86%	46,53%	45,22%	-[1]	-

Source: Eurostat

Table 10 Transparency index.

Country	2009	2010	2011	2012	2013	2014	2015	2016
Greece	38	35	34	36	40	43	46	44
Portugal	58	60	61	63	62	63	64	62
Spain	61	61	62	65	59	60	58	58
Cyprus	66	63	63	66	63	63	61	55

Source: Transparency International

Table 11 Government effectiveness index.

Country	2009	2010	2011	2012	2013	2014	2015	2016
Greece	71,29%	69,38%	68,25%	63,03%	67,77%	69,23%	64,42%	62,50%
Portugal	83,25%	80,38%	78,20%	81,52%	85,31%	79,33%	86,06%	85,58%
Spain	77,99%	78,95%	81,52%	82,46%	82,94%	84,13%	85,10%	83,17%
Cyprus	88,04%	90,91%	92,42%	88,15%	88,15%	83,65%	81,25%	78,37%

Source: World Bank

Table 12 Political stability index.

Country	2009	2010	2011	2012	2013	2014	2015	2016
Greece	37,91%	40,76%	41,71%	39,34%	40,28%	40,48%	38,57%	41,90%
Portugal	72,99%	71,09%	69,67%	70,62%	68,72%	74,29%	78,10%	88,10%
Spain	30,33%	33,65%	48,34%	42,65%	46,92%	55,24%	55,71%	61,90%
Cyprus	57,82%	61,61%	66,82%	66,82%	64,93%	63,81%	62,86%	65,71%

Source: World Bank

Table 13 Foreign direct investment (FDI) percentage of GDP.

Country	2009	2010	2011	2012	2013	2014	2015	2016
Greece	0,80%	0,20%	0,40%	0,70%	1,20%	1,10%	0,60%	1,60%
Portugal	2,30%	3,50%	4,00%	10,10%	4,70%	5,70%	1,10%	4,10%
Spain	0,90%	2,80%	2,20%	1,80%	3,80%	2,50%	2,10%	2,50%
Cyprus	10,80%	53,30%	-43,50%	30,50%	-25,00%	-2,20%	41,0%	25,00%

Source: Eurostat

[1]No available data