

Happiness and Public Expenditure: Evidence from a Panel Analysis

Kamal Kasmaoui, Othmane Bourhaba

▶ **To cite this version:**

Kamal Kasmaoui, Othmane Bourhaba. Happiness and Public Expenditure: Evidence from a Panel Analysis. 2017. hal-02625987

HAL Id: hal-02625987

https://univ-pau.hal.science/hal-02625987

Preprint submitted on 26 May 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Working Papers Series



Centre d'Analyse Théorique et de Traitement des données économiques

CATT WP No. 8
April 2017

HAPPINESS AND PUBLIC EXPENDITURE: EVIDENCE FROM A PANEL ANALYSIS

Kamal KASMAOUI
Othmane BOURHABA

CATT-UPPA
UFR Droit, Economie et Gestion
Avenue du Doyen Poplawski - BP 1633
64016 PAU Cedex
Tél. (33) 5 59 40 80 61/62
Internet : **http://catt.univ-pau.fr/live/**

UNIVERSITÉ DE PAU ET DES PAYS DE L'ADOUR

Happiness and Public Expenditure: Evidence from a panel analysis

Kamal KASMAOUI • Othmane BOURHABA

Abstract

The present study examines empirically the relationship between Happiness and public spending. We use a panel data from 2006 to 2015 for about 132 countries. We first estimated a Pooled, fixed effect and finally a GMM model to deal with the endogeneity problem. Our main findings suggest, first, that high levels of public expenditure are associated with greater Happiness around the world. Second, as expected, social support, Healthy life expectancy, Freedom to make life choices and confidence in national government contribute significantly to Happiness.

Keywords: Happiness, Public choice, Government spending, GMM

JEL Codes: H11, H40, H50, I31

Kamal KASMAOUI
Centre d'analyse théorique et de traitement des données économiques, Université de Pau et des Pays de l'Adour Pau Business School, France
e-mail: kamal.kasmaoui@univ-pau.fr

Othmane BOURHABA
Faculté des sciences juridiques économiques et sociales, Mohammedia, Hassan II University of Casablanca
e-mail: othmane.bourhaba-etu@etude.univcasa.ma

1. Introduction

Thomas Jefferson (1809) said: "*The care of human life and happiness is the first and only legitimate object of good government*". Aristotle and Ibn Khaldun argued, also, that promoting Happiness is one of the important roles of a government. Hence, a good government is supposed to be the one who encourage and spends in the pursuit of Happiness of its citizens. However, the policies of the near majority of governments around the world put aside the subjective well-being of individuals to focus, instead, on indicators such as GDP, fiscal deficit, public debt, etc. (Layard, 2005; Stiglitz, Sen and Fitoussi, 2009; Stiglitz, 2012 ; O'donnell et al. 2014)

Happiness or Subjective well-being is usually used by specialists as an umbrella term to denote the positive perception of individuals about their lives. Happiness can be defined as a state of mind where individuals have a feeling of satisfaction. What is sure about Happiness concept is that there is no consensus on the term's definition. It's a subjective concept that differs from an individual to another. We are witnessing a growing interest of economists in the study of Happiness. Looking at the determinants of Happiness is a specialty of sociologists and psychologists, but in the last few years economists started to take a serious interest in it.

Governments can really affect the subjective well-being of individuals? Public expenditures are the main economic instrument in the hand of a government to infuse the well-being of citizens. Through this instrument governments can affects Happiness by developing, for example, a good social security system or investing in healthcare and education. However, there still a debate among economists about the sign of the causality Happiness - Public expenditures.

According to Perovic and Golem (2010) government spending affects positively Happiness in transition countries. Kiyia (2012) finds using micro data from United States, that the government expenditures influences positively life satisfaction. However, some studies find a negative relationship between Happiness and public expenditure. Bjørnskov et al. (2007) demonstrated that government spending has a negative impact on life satisfaction. But this result does not hold in countries where the government size is already small. Using Japanese prefecture-level data, Yamamura (2009) presents evidence that government size has a detrimental effect on life satisfaction in economic developing stage. A recent study by Knoll and Pitlik (2016) shows that higher government spending affects negatively Happiness in 25 European countries. Furthermore, Hessami (2010) using a panel of 15 European countries finds the existence of an inversely U-shaped relationship between public spending and Subjective well-being. Very cited in the literature Ram (2009) finds the non-existence of a significant relationship between government spending and Happiness. He concludes that an increase of government spending does not lower Happiness.

Except Hessami (2010), all previous studies dealing with this subject use cross-section data. Our study differs from the literature by offering, first, System GMM estimation from large panel data sets and, second, a new estimation based on recent data. We believe that a panel analysis will give us more robust results.

This paper offers a reexamination of the relationship between Happiness and public expenditure. Following a Panel analysis, we will use first a pooled estimation, then, fixed effects and random effects estimation, and finally, a Generalized Method of Moments in order to control endogeneity bias.

This paper is structured as follows. Section 2 describes the data and methodology adopted in this study. Section 3 presents the estimation's results and section 4 provides conclusions.

2. Data description and Methodology

2.1. Data

We use annual data to investigate the relationship between Happiness and Public Spending. We obtain data from, both, the International Monetary Fund, World Economic Outlook Database, and the World Happiness Report (2016). Our study uses Panel data for 132 countries, with time intervals between 2006 and 2015. The variables used in this research are:

Happiness, our dependent variable, is an indicator of Subjective well-being. It represents the national average response to the question of life evaluations. This indicator gives the perceived level of Happiness ranging from 0 (the worst possible life) to 10 (the best possible life).

Public Spending indicates the general government total expenditure as a percentage of GDP. According to the IMF this index illustrates the total expenditure consists of total expense and the net acquisition of nonfinancial assets. The assumption is that public spending has a positive impact on the subjective well-being of individuals; hence, the expected sign of the coefficient associated with *Public Spending* in our estimation would be positive.

Social Support gives a response if a person can rely on somebody (friends or relatives) to help him during times of trouble. It's an average of the binary responses, either Yes or No.

Healthy life expectancy at birth. The average number of years that a newborn can expect to live in "full health". Unlike the simple life expectancy, we take into account years lived in less than "full health" due to injuries and/or diseases.

Confidence in national government is used to measure if Yes or Not people trust their government. The index constitutes the average of the binary responses (0, 1).

Freedom to make life choices. Measure the annual average of binary responses, if a person feels satisfied or not with his freedom to choose what he does with his life.

Democratic quality reflects a simplified version that combines the indicators of "Worldwide Governance Indicators project". See *"*World Happiness Report 2016*"* for more details.

Gini of household income. This index measures inequality within a country using a survey with local currency. Then, we convert local currency into International Dollars using purchasing power parity ratios[1].

[1] For more details see Gallup (2012),"Worldwide research methodology and codebook"

GDP per capita. We use Gross Domestic Product converted into international dollars using purchasing power parity rates (PPP). Data are in constant 2011 international dollar.
Table 1 gives a summary statistics for all the variables used in this study:

Table 1. Descriptive statistics

Variable	Observations	Mean	Std. Dev.	Min	Max
Happiness	1166	5.4520	1.1017	2.8078	8.0189
Public Spending	1260	31.3194	11.3397	4.27	65.2
Social Support	1158	0.8144	0.1147	0.2913	0.9873
Healthy Life	1166	62.2499	7.9599	36.1676	76.0446
Freedom	1139	0.7176	0.1461	0.2575	0.9799
Confidence	1021	0.4591	0.1759	0.0687	0.9735
Democracy	1040	-0.1253	0.8471	-2.0824	1.5381
Gini	1005	0.4175	0.0862	0.2097	0.7697
LogGDP_Capita	1148	9.2153	1.1456	6.3546	11.4695

Source: authors' calculations

2.2. Methodology

On the basis of the framework presented above, we test the contribution of public spending on Happiness. In order to be able to compare our results with previous empirical works, we estimate the effects of public spending on Happiness and other control variables using an unbalanced panel analysis. The model's specification flow Bjørnskov et al. (2007) and Ram (2009). The model employed in the analysis takes the following form:

$$HAPP_{it} = \alpha_0 + \alpha_1 PS_{it} + \alpha_2 GDP_{it} + \alpha_3 SS_{it} + \alpha_4 HLE_{it} + \alpha_5 FLC_{it} + \alpha_6 CNG_{it} + \alpha_7 DEMOC_{it} + \alpha_8 GINI_{it} + \varepsilon_{it}$$

Where *i* represents each country and *t* represents each time period, $\boldsymbol{HAPP_{it}}$ is the indicator of Happiness, $\boldsymbol{GDP_{it}}$ is the *GDP per capita*, $\boldsymbol{PS_{it}}$ is the Public spending, $\boldsymbol{SS_{it}}$ indicates the Social support, $\boldsymbol{HLF_{it}}$ is the Healthy life expectancy, $\boldsymbol{FLC_{it}}$ is the Freedom to make life

choices, CNG_{it} represents the Confidence in national government, $DEMOC_{it}$ is Democratic quality, $GINI_{it}$ *is* Gini of household income and ε_{it} is the error term.

In order to estimate our model, firstly, we used the standard methods of panel estimation (Pooled panel analysis, fixed effects and random effects). Then, we made a Hausman specification test to compare random and fixed effects specifications.

Secondly, we used the Generalized Method of Moments (GMM) system introduced by Blundell and Bond (1998) to deal with the suspected endogeneity problem between our dependent variable and independent variables.

3. Results

Table 2 presents the results of the different estimation using OLS, fixed-effects and GMM. For the three estimations' technique, the model is estimated with and without GINI. The Hausmann specification test[2] applied here indicates that the fixed-effects model should be used.

The coefficient on public expenditure estimated by Ordinary Least Square (OLS) is not significant confirming the results of Ram (2009), who found no relationship between public spending and Happiness. In contrast, using fixed effects, we found a positive and significant association between public spending and Happiness.

When using the System GMM estimator, the coefficient on public spending is positively significant confirming the positive association between public expenditure and Happiness.

The coefficients on Social support, Health, Confidence in government and Freedom to make a choice are found to be statistically significant and positive using the System GMM model. The coefficient on GINI turns out to be non-significant using the System GMM model. And the coefficients on GDP per capita and Democracy show a significant and negative relationship in the system GMM model. We rely on System GMM model because we believe it gives us a robust estimation comparing to OLS and fixed effect models.

When GINI variable is entered in equations (4) and (6), the coefficients associated to public spending drop slightly but remain significant in the case of System GMM model and no statistically significant when using fixed effect model.

The validity of the instruments is confirmed in the case of our two models[3] (5) and (6). Arrelano-Bond (1991) tests show the presence of a negative first-order autocorrelation,

[2] The test statistic is χ^2 (8) = 151.96. This rejects the null hypothesis at any standard of significance

[3] The Hansen test shows that we cannot reject the null hypothesis that the error term is uncorrelated with the instruments.

whereas we cannot reject the null hypothesis of absence of autocorrelation of order 2. We accept thus, the specification retained in the model and the validity of all the used instruments.

Table 2. Estimations' results

	Pooled		**Fixed effects**		**GMM**	
VARIABLES	Happiness	Happiness	Happiness	Happiness	Happiness	Happiness
	(1)	(2)	(3)	(4)	(5)	(6)
Happiness					0.870***	0.858***
					(0.073)	(0.074)
Public Spending	0.00189	0.000348	0.00935**	0.00479	0.00971*	0.010*
	(0.00235)	(0.00252)	(0.00402)	(0.00418)	(0.00514)	(0.00521)
LogGDP_Capita	0.315***	0.303***	1.328***	1.581***	-0.0692*	-0.0674*
	(0.0406)	(0.0417)	(0.181)	(0.198)	(0.0374)	(0.0363)
Social_Support	1.897***	1.891***	1.312***	1.202***	1.011***	0.984***
	(0.252)	(0.258)	(0.269)	(0.275)	(0.235)	(0.236)
Health	0.0346***	0.0316***	-0.0468***	0.0732***	0.0102**	0.0105**
	(0.00471)	(0.00509)	(0.0137)	(0.0147)	(0.00451)	(0.00507)
Freedom	2.310***	2.453***	0.580***	0.546***	0.476**	0.545**
	(0.213)	(0.224)	(0.196)	(0.201)	(0.215)	(0.213)
Confidence	-0.337**	-0.348**	0.532***	0.503***	0.225*	0.215*
	(0.144)	(0.148)	(0.130)	(0.132)	(0.124)	(0.126)
Democracy	-0.0729*	-0.0692*	-0.00164	-0.0330	-0.0756**	-0.0755**
	(0.0394)	(0.0411)	(0.0913)	(0.0950)	(0.0313)	(0.0333)
GINI		-0.869***		-0.585**		-0.091
		(0.325)		(0.236)		(0.260)
Constant	-2.689***	-2.064***	-3.110***	-6.055***	-0.850***	-0.820**
	(0.269)	(0.385)	(1.074)	(1.459)	(0.247)	(0.331)
Observations	882	853	1,124	853	717	714
Number of id	131	119	131	119	116	116
R-squared	0.710	0.710	0.100	0.190		
Hansen test					8.20	8.75
					(0.831)	(0,791)
AR (1)					-4.84	-4.82
					(0.00)	(0.00)
AR (2)					-1.05	-1.00
					(0.293)	(0.317)

Source: authors' calculations

Note: Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1 indicate significance at the 1%, 5% and 10% respectively.

4. Conclusion

The main purpose of this article is to examine the impact of public spending and Happiness through a Panel analysis. In contrast with Ram (2009) and Bjørnskov et al. (2007), we demonstrated the existence of a positive link between public spending on Happiness in 132 countries around the world. Unlike most empirical studies on this subject, we use a GMM model in order to have robust estimations. In this regard, we believe that policy-makers should have as a main objective: the pursuit of Happiness of the citizens by spending and make from indicators like the GDP and public debt rate, a way to achieve and not a goal in itself.

According to the estimate coefficient of public spending in the Sytem GMM estimation, public expenditure plays an important role in the increase of Happiness. It does for at least two reasons first; public spending can play a role in the regulation of the malfunction of the market in a way to strengthen social solidarity. Second, it can contribute in increasing of the level of Happiness by building infrastructure, establish a good education system or promote health care services, etc.

Estimation's coefficient of GDP per capita in the GMM model walks on the same path with the Easterlin paradox. In fact, Easterlin et al. (2010) demonstrated that there is no long term relationship between an increase in revenue and an increase in Happiness. Easterlin et al. (2010) highlights that people who live in rich countries are happier than those who live in poor countries and rich people are happier than poor people within the same country. But when analyzing the time series relationship between Happiness and income, the conclusion is that an increase of income does not lead to an increase in Happiness.
According to our results, a raise in the GDP per capita leads to reduce the level of subjective well-being.

The coefficients associated with control variables remain also strongly correlated with Happiness. Social support variable has a large and highly significant impact on Happiness. Which means people feel happier when they have relatives on their side in time of trouble. Health plays, also, a big role in the positive feeling of satisfaction. Freedom to make a choice and Confidence in government play a positive and significant impact. According to our estimations, democracy has a negative effect on the feeling of Happiness, whereas inequality does not impact subjective well-being.

Finally, from a public choice perspective we believe that these results are important to have a real view on the determinants of the subjective well-being of individuals, because traditional indicators may lead a government to implement the wrong economic policy. Public expenditure remains among factors that contribute to the citizens' Happiness, but when will governments, around the world, devote their interest in establishing policies that make citizens happy?

Bibliography:

Arellano, M., Bond, S. (1991). "Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations". *The Review of Economic Studies*, 58, 277-297.

Blundell, R., Bond, S. (1998). "Initial Conditions and Moment Restrictions in Dynamic Panel Data Models". *Journal of Econometrics*, 8, 115-144.

Bjørnskov, C., Dreher, A., & Fischer, J. A.V. (2007). "The Bigger the Better? Evidence of the Effect of Government Size on Life Satisfaction Around the World". *Public Choice*, 127, 267-292. doi: 10.1007/s11127-006-9081-5

Bjørnskov, C., Dreher, A., & Fischer, J.A.V. (2008). "Cross-country determinants of life satisfaction: exploring different determinants across groups in society". *Social Choice and Welfare*, 30, 119-173.

Easterlin R. A., McVey L. A., Switek M., Sawangfa O., & Zweig J. S. (2010). "*The happiness-income paradox revisited"*. Proceedings of the National Academy of Sciences, 107, 22463–22468. doi: 10.1073/pnas.1015962107

Gallup, (2012) Worldwide research methodology and codebook. Gallup, Inc.

Helliwell, J., Layard, R., & Sachs, J. (2016). *World Happiness Report, Update, Volume 1,* New York: Sustainable Development Solutions Network.

Hessami, Z. (2010). "The Size and Composition of Government Spending in Europe and Its Impact on Well-Being". *Kyklos*, 63, 346-382. doi: 10.1111/j.1467-6435.2010.00478.x

Ibn Khaldūn, The Muqaddimah. (trans) Franz Rosenthal. "An Introduction to History", Volume 1, New York: Princeton University Press, 1958.
International Monetary Fund, (2016). World Economic Outlook Database

Knoll, B. & Pitlik, H. (2016). "Who benefits from big government? A life satisfaction approach". *Empirica*, Springer. 43, 533-557.

Kiyia, K. (2012). "Life Satisfaction and Public Finance: Empirical Analysis Using U.S. Micro Data". Department of Economics, University of Washington, Seattle.
http://dx.doi.org/10.2139/ssrn.2126357

Layard, R. (2005)."Happiness: Lessons from a New Science". New York: Penguin Press.

Letter to the Republican Citizens of Washington County, Maryland. (1871). The Writings of Thomas Jefferson, ed. H. A. Washington, 8, 165.

O'donnell, G., Deaton, A., Durand, M., Halpern, D., Layard, R. (2014). "Well Being and Policy". Legatum Institute, 94p.

Perovic, M. L. & Golem, S. (2010). “Investigating Macroeconomic Determinants of Happiness in Transition Countries“. *Eastern European Economics*, 48, 59-75.

Ram, R. (2009). “Government spending and happiness of the population: additional evidence from large cross-country samples”. *Public Choice*, 138, 483-490. doi:10.1007/s11127-008-9372-0

Stiglitz, E. J., Sen, A., Fitoussi, J.P. (2009). “Mismeasuring Our Lives: Why GDP Doesn’t Add Up”, New York: The New Press.

Stiglitz, E. J. (2012). “Le prix de l’inégalité“. Paris, Les liens qui libèrent, 509p.

Yamamura, E. (2009). “The influence of government size on economic growth and life satisfaction. A case study from Japan“. *MPRA Paper* 18439.