

GOVERNMENT DEBT RATIO TO GDP TESTIMONY FOR EUROPEAN FINANCIAL CRISIS

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ABSTRACT

While the sovereign debt increases have been most pronounced in only a few euro zone countries (Greece, Ireland, Italy, Spain and Portugal; called PIIGS)they have become a perceived problem for the area as a whole. In May 2011, Greek public debt gained prominence as a matter of concern.

Concern about rising Government debt levels across the globe together with a wave of downgrading of European government debt created alarm in financial markets.

Greece's total debt as of end-April 2010 was approximately €319 billion. Of that figure, the vast majority - approximately €294 billion - was in the form of bonds, with another €8.6 issued as Treasury bills.

This paper we try to show statement with regression model and Results show rising government debt has universal function and extend one cause the markets will fall.

Keywords: European debt, PIIGS Countries, European Financial Crisis

JEL Classification: G01-G15-G18-G39

INTRODUCTION

In May 2010, Greece concluded an agreement with the Eurozone member states, with the backing of the IMF, for access to a €110 billion facility (€80 billion from the Eurozone and €30 billion from the IMF). That amount was judged to be sufficient to allow Greece to repay -- in full and on time -- all public sector debts maturing during the three-year IMF program period and to cover anticipated budget deficits during that period. One objective of this total bailout of Greece was to staunch any risk of contagion to the other European peripheral countries. The European Central Bank promptly embarked on a program of open market purchases of Greek and other Eurozone periphery debt in order to "ensure an orderly monetary policy transmission mechanism." This program continues, in fits and starts, as of this writing. The ECB is thought now to own €40-50 billion of Greek sovereign bonds

purchased in the secondary market. March 23, 2011 saw the release of a term-sheet for a permanent facility to assist distressed Eurozone sovereigns after 2013, the European Stabilization Mechanism (“ESM”). The term sheet makes clear that ESM loans will be given preferred creditor status.¹¹ A similar claim to preferred creditor status has not been made (or at least not yet been made) for the €80 billion EU contribution to the Greek bailout package. But now PIIGS countries and other countries in Eurozone have problem in debts.

For now, the solution is deep fiscal cuts. The EU said in its most recent review of Portugal's bailout that a "bold" 2012 budget was "consistent" with a tough deficit-cutting target. Deep cuts in the face of prolonged recession, however, was the solution proposed for Greece. It hasn't worked there.

RELATED LITERATURE

Our results add to an established literature on the role of financial frictions in international trade. A number of theoretical and empirical papers have shown that, in the presence of credit constraints, countries with more developed financial institutions have a comparative advantage in financially vulnerable sectors. While this literature exploits the same cross-sector variation in financial vulnerability as we do, it typically relies on country-level measures of financial development. By contrast, we explore the response of trade flows to short-term fluctuations in the cost of capital using high frequency (monthly) data. We also focus on export patterns before and during a financial crisis, instead of on conditions in steady state. The global liquidity squeeze has renewed interest in academic and policy circles alike in the effect of credit constraints on export performance at the firm level. There is now ample evidence from micro data demonstrating that more credit-constrained firms indeed display a lower capacity for exporting. For example, Amiti and Weinstein (2009) show that Japanese banks transmitted financial shocks to exporters during the systemic crisis that plagued Japan in the 1990s. Similarly, Bricongne et al. (2010) find that the exports of French firms in more external finance-dependent sectors were more adversely hit during the recent global crisis

Our paper also falls within a broader research agenda on the impact of banking and financial crises on economic outcomes such as sectoral growth (Kroszner et al., 2007; Dell'Ariccia et al., 2000) or firms' planned R&D, employment, and capital spending (Campello et al., 2010). With regard specifically to the impact on international trade, Iacovone and Zavacka (2009) find that annual export growth rates were hurt more during banking crises in sectors more dependent on external finance and in sectors with fewer tangible assets, but that these effects were mitigated in countries with stronger levels of financial development. Our results further suggest that movements in the cost of capital can have large real effects on trade in the short run even when broader financial institutions remain unchanged. Finally, our paper contributes to a fast-growing body of work investigating the trade effects of the 2008–2009 crises. Freund (2009) and Levchenko et al. (2010) document that the decline in world trade has become increasingly pronounced relative to the decline in GDP in recent downturns, especially during the global financial crisis

DATA AND METHODOLOGY

This section identifies the sources of our data, presents the data itself, and describes the regression model.

Data

Our main data source from the Central bank of france & World Federation Of Exchanges. Coverage comprehensive. The real GDP growth and Debt for 4-year.

Table 1. This table reports the number of General government receipte , general government expenditure , general government budget balance and general government gross debt all percentage to GDP.

	% GDP											
	General Government Receipts		General Government Expenditure		General Government Budget Balance				General Government Gross Debt			
	(A)	(B)	(C)	(D)	(B)-(C)	(D)-(C)	(D)-(A)	(D)-(B)	(B)-(D)	(C)-(D)	(D)-(A)	(D)-(B)
	2009	2010	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
France	48.7	49.2	56.2	56.2	-2.7	-3.3	-7.5	-7.0	63.9	67.7	78.3	81.7
Germany	44.5	43.3	47.5	46.6	0.3	0.1	-3.0	-3.3	64.9	66.3	73.5	83.2
Austria	48.8	48.3	53.0	53.0	-0.9	-0.9	-4.1	-4.6	60.7	63.8	69.6	72.3
Belgium	48.1	48.9	54.1	53.1	-0.3	-1.3	-5.9	-4.1	84.2	89.6	96.2	96.8
Cyprus	39.8	41.3	45.8	46.6	3.4	0.9	-6.0	-5.3	58.3	48.3	58.0	60.8
Spain	34.7	35.7	45.8	45.0	1.9	-4.2	-11.1	-9.2	36.1	39.8	53.3	60.1
Estonia	43.4	40.1	45.2	40.0	2.5	-2.8	-1.7	0.1	3.7	4.6	7.2	6.6
Finland	53.4	52.3	56.3	55.1	5.2	4.2	-2.6	-2.5	35.2	34.1	43.8	48.4
Greece	37.3	39.1	52.9	49.5	-6.4	-9.8	-15.4	-10.5	105.4	110.7	127.1	142.8
Ireland	33.9	34.6	48.2	67.0	0.1	-7.3	-14.3	-32.4	25.0	44.4	65.6	96.2
Italy	46.5	45.9	51.8	50.3	-1.5	-2.7	-5.4	-4.6	103.6	106.3	116.1	119.0
Luxembourg	41.3	39.5	42.2	41.2	3.7	3.0	-0.9	-1.7	6.7	13.6	14.6	18.4
Malta	39.5	38.7	43.2	42.3	-2.4	-4.5	-3.7	-3.6	62.0	61.5	67.6	68.0
Netherlands	45.9	45.9	51.4	51.2	0.2	0.6	-5.5	-5.4	45.3	58.2	60.8	62.7
Portugal	39.7	41.5	49.8	50.7	-3.1	-3.5	-10.1	-9.1	68.3	71.6	83.0	93.0
Slovakia	33.6	33.1	41.5	41.0	-1.8	-2.1	-8.0	-7.9	29.6	27.8	35.4	41.0
Slovenia	43.1	43.4	49.0	49.0	-0.1	-1.8	-6.0	-5.6	23.1	21.9	35.2	38.0
Euro area	44.5	44.5	50.8	50.4	-0.7	-2.0	-6.3	-6.0	66.2	69.9	79.3	85.1
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Bulgaria	36.0	34.5	40.7	37.7	1.1	1.7	-4.7	-3.2	17.2	13.7	14.6	16.2
Denmark	55.6	55.3	58.4	58.2	4.8	3.2	-2.7	-2.7	27.5	34.5	41.8	43.6
Hungary	46.1	44.6	50.5	48.9	-5.0	-3.7	-4.5	-4.2	66.1	72.3	78.4	80.2
Latvia	34.6	35.2	44.2	42.9	-0.3	-4.2	-9.7	-7.7	9.0	19.7	36.7	44.7
Lithuania	34.5	34.2	44.0	41.3	-1.0	-3.3	-9.5	-7.1	16.9	15.6	29.5	38.2
Poland	37.2	37.8	44.5	45.7	-1.9	-3.7	-7.3	-7.9	45.0	47.1	50.9	55.0
Romania	32.1	34.3	40.6	40.8	-2.6	-5.7	-8.5	-6.4	12.6	13.4	23.6	30.8
United Kingdom	40.3	40.6	51.4	50.9	-2.7	-5.0	-11.4	-10.4	44.5	54.4	69.6	80.0
Sweden	54.2	52.7	55.2	53.0	3.6	2.2	-0.7	0.0	40.2	38.8	42.8	39.8
Czech Republic	40.1	40.5	45.9	45.2	-0.7	-2.7	-5.9	-4.7	29.0	30.0	35.3	38.5
European Union	44.0	43.9	50.8	50.3	-0.9	-2.4	-6.8	-6.4	59.0	62.3	74.4	80.0
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Table 2. This table reports to the number of end year closed benchmark indices .also we use to NASDAQ OMX Nordic Exchange index For FINLAND , DENMARK and SWEDEN

Europe - name of exchange	Name of the index	2,007	2,008	2,009	2,010
Athens	ATHEX Composite Price Index	5,178.83	1,786.51	2,196.16	1,413.94
BME Spanish Exchanges Barcelona	BCN Global-100	1,193.94	694.44	935.54	751.32
BME Spanish Exchanges Bilbao	Bolsa Bilbao 2000	2,626.55	1,589.90	1,921.55	1,615.18
BME Spanish Exchanges Madrid	General Index (IGBM)	1,642.01	975.97	1,241.72	1,003.73
BME Spanish Exchanges Valencia	IGBV Index	1,359.19	844.79	1,138.56	976.93
Borsa Italiana	MIB Index	28,525.00	14,623.00	17,651.79	16,121.00
Budapest SE	BUX	26,235.63	12,241.69	21,227.01	21,327.07
Cyprus SE	CSE General Price Index	4,820.72	1,101.42	1,597.23	1,055.21
Deutsche Börse	DAX 30	8,067.32	4,810.20	5,957.43	6,914.19
Irish SE	ISEQ Overall Index	6,934.35	2,343.27	2,974.93	2,885.10
Ljubljana SE	SBI Top	NA	NA	982.67	850.35
London SE	FTSE All Share	3,286.67	2,209.29	2,760.80	3,062.85
Luxembourg SE	LuxX Price Index	2,419.28	980.91	1,371.47	1,542.12
NASDAQ OMX Nordic Exchange	OMX Nordic All Share- PI	229.67	110.19	154.74	207.08
NYSE Euronext Amsterdam	AAX All Share Index	784.78	380.61	521.04	557.94
NYSE Euronext Brussels	BAS	12,947.59	6,572.80	8,191.60	8,552.46
NYSE Euronext Lisbon	PSI General	4,123.90	2,073.59	2,902.26	2,721.99
NYSE Euronext Paris	SBF 250	3,956.31	2,251.35	2,789.32	2,800.66
Warsaw SE	WIG	55,648.54	27,228.64	39,985.99	47,489.91
Wiener Börse	Wiener Börse Index (WBI)	1,653.79	644.72	926.49	1,104.39

METHODOLOGY

We Follow Use A Linear Model Of Regression Now We Exponential Model

1. There is a true or population line (or equation): $y_i = \beta_0 + \beta_1x + \varepsilon_i$, where β_0 is the y-intercept and β_1 is the slope, which defines the linear relationship between the independent variable, x , and the dependent, y . The random deviations, ε_i 's, allow the points to vary about the true line. (The estimated line is: $\hat{y}_i = b_0 + b_1x$.)
2. The ε_i 's have mean zero, $\mu_e = 0$.
3. The standard deviation of the ε_i 's is constant, σ_e is not dependent on the x 's.

4. The ε_i 's are independent of each other.
5. The ε_i 's are normally distributed.

We use the residuals, e_i 's, to estimate the ε_i 's. Combined, this say each of the ε_i 's are independently, identically distributed $N(0, \sigma^2)$ or $\varepsilon \text{ iid} \sim N(0, \sigma^2)$. This means that the y 's are also normal, and each $y \sim N(\beta_0 + \beta_1 x, \sigma^2)$.

Note: we now have 2 parameters, β_0 and β_1 we have to estimate for μ_y , which is why the df for the t -test = $n-2$.

ANOVA Table for Simple Linear Regression

Source	df	Sum of Squares	Mean Squares	F value	p-value
Model	1	$\Sigma(\hat{y}_i - \bar{y})^2 = \text{SSModel}$	SSM = MSM	MSG/MSE = $F_{1, n-2}$	Pr ($F > F_{1, n-2}^*$)
Residual	$n-2$	$\Sigma e_i^2 = \text{SSResidual}$	SSR/($n-2$) = MSE		
Total	$n-1$	$\Sigma(y_i - \bar{y})^2 = \text{SSTotal}$	SST/($n-1$) = MST		

Residuals are often called errors since they are the part of the variation that the line could NOT explain, so

MSR = MSE = sum of squared residuals/df = σ^2 = estimate for variance of the population regression line

SSTot / (n-1) = MSTOT = s_y^2 = the total variance of the y 's

$F = t^2$ for Simple Linear Regression. The larger the F (the smaller the p -value) the more of y 's variation the line explained so the less likely H_0 is true. We reject when the p -value $< \alpha$.

R^2 = proportion of the total variation of y explained by the regression line = $\text{SSM} / \text{SST} = 1 - \text{SSResidual} / \text{SST}$

In next we can see the regression test 4 year for GDP to debt. Results showed the consolidation conditions were in European countries .

We compare 4 year results in GDP to debt with financial markets reaction.

Regression Test b Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	GDP 2007 a		Enter

- Note:** a. All requested variables entered
 b. Dependent Variable: indices 2008

Variables Entered/Removed

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.182a	0.033	-0.036	21.04059

Note: a. Predictors: (Constant), GDP 2007

bANOVA

Model	Sum of squares	df	Mean Squar	F	Sig
Regression	212.989	1	212.989	0.481	0.499a
Residual	6197.89	14	442.706		
Total	6410.879	15			

Note: a. Predictors: (Constant), GDP 2007
 b. Dependent Variable: Indices 2007

Coefficients a

Model	Unstandardized Coefficients		Standardized Coefficients		sig
	B	Std. Error	Beta	t	
(Constant)	17.037	12.389		1.375	0.191
GDP 2007	-0.138	0.199	-0.182	-0.694	0.499

Note: a. Dependent Variable: Indices 2007

In our methodology we use , results show has solidarity between markets and growth GDP to debt ratio in 2007.

Regression Test For 2008

bVariables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	GDP 2008 a		Enter

Note: a. All requested variables entered
 b. Dependent Variable: indices 2008

Variables Entered/Removed

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.97 a	0.009	-0.061	12.38188

Note: a. Predictors: (Constant), GDP 2008

b ANOVA

Model	Sum of squares	df	Mean Squar	F	Sig
Regression	20.26	1	20.26	0.132	0.722 a
Residual	2146.354	14	153.311		
Total	2166.614	15			

Note: a. Predictors: (Constant), GDP 2008
 b. Dependent Variable: Indices 2008

Coefficients a

Model	Unstandardized Coefficients		Standardized Coefficients	t	sig
	B	Std. Error	Beta		
(Constant)	-56.34	7.973		-7.066	0
GDP 2008	0.044	0.12	0.097	0.364	0.722

Note: a. Dependent Variable: Indices 2008

In our methodology we use , results show has no solidarity between markets and growth GDP to debt ratio in 2008.

Regression Test For 2009

b Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	GDP 2009 a		Enter

Note: a. All requested variables entered
 b. Dependent Variable: indices 2009

Variables Entered/Removed

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.170 a	0.029	-0.4	14.10388

Note: a. Predictors: (Constant), GDP 2009

b ANOVA

Model	Sum of squares	df	Mean Squar	F	Sig
Regression	82.785	1	82.785	0.416	0.529 a
Residual	2784.852	14	198.918		
Total	2867.638	15			

Note: a. Predictors: (Constant), GDP 2009
 b. Dependent Variable: Indices 2009

Coefficients a

Model	Unstandardized Coefficients		Standardized Coefficients	t	sig
	B	Std. Error	Beta		
(Constant)	38.341	9.915		3.867	0.002
GDP 2009	-0.085	0.131	-0.17	-0.645	0.529

Note: a. Dependent Variable: Indices 2009

In our methodology we use , results show has slight solidarity between markets and growth GDP to debt ratio in 2009

Regression Test For 2010

bVariables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	GDP 2010 a		Enter

Note: a. All requested variables entered
b. Dependent Variable: indices 2010

Variables Entered/Removed

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.399 a	0.159	0.099	16.37119

Note: a. Predictors: (Constant), GDP 2010

b ANOVA

Model	Sum of squares	df	Mean Squar	F	Sig
Regression	710.723	1	710.723	2.652	0.126 a
Residual	3752.222	14	268.016		
Total	4462.944	15			

Note: a. Predictors: (Constant), GDP 2010
b. Dependent Variable: Indices 2010

Coefficients a

Model	Unstandardized Coefficients		Standardized Coefficients	t	sig
	B	Std. Error	Beta		
(Constant)	14.333	11.702		1.225	0.241
GDP 2010	-0.23	0.141	-0.399	-1.628	0.126

Note: a. Dependent Variable: Indices 2010

In our methodology we use , results show has solidarity between markets and growth GDP to debt ratio in 2010

CONCLUSIONS

Can be seen factor calculated showed financial markets may suffer further. Major contributing factors are the sizes of net government debt, primary budget deficits and negative current account (trade) balances, each expressed as a percent of GDP.

The main impact of the Eurozone crisis could be via the impact on financial markets, with a bout of renewed volatility possibly dragging parts of the world economy back into a double-

dip recession. But the downturn in the Eurozone would have to be prolonged, and would probably have to have more of an impact on some of the medium-sized economies, before the financial markets begin to undermine prospects for other regions in the world. In the meantime, the weakness of the euro – which we now expect to fall to as low as 1.05 to the US\$ by the end of next year given the weakness of the economy and uncertainty about the course of fiscal policy – will give a boost to Eurozone exports over the coming 12-18 months, although it is causing concern in countries that are significant exporters to the Eurozone.

Despite the large EU/IMF rescue package, the financial markets remain nervous, concerned about the fiscal deficit problems in some of the Eurozone members and whether the governments in these countries will be able to deliver on their austerity measures in the face of mounting social unrest.

The sovereign debt crisis in the Eurozone periphery could also have a more subtle negative effect on global growth by undermining faith in government bonds as a ‘safe’ asset and inducing precautionary fiscal tightening in countries outside the Eurozone who would prefer not to risk being sucked into the kind of market turmoil recently suffered by Greece. Such moves could offset the policy stimulus previously expected to be a strong growth support this year, damaging the global growth outlook. While the new support packages have averted a rapid spiral toward default, which would have been a huge shock for financial markets, the problem of sovereign debt and deficits could continue to weigh on the world economy for some time.

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