SPC Network

Regulation and Investment:
A Brief Note on the ECTA Scorecard and Investment 2007
7th October 2009

We continue to find a strong relationship between the effectiveness of the regulatory environment and investment. Countries which score highest in the ECTA Regulatory Scorecard, tend to enjoy higher levels of investment.

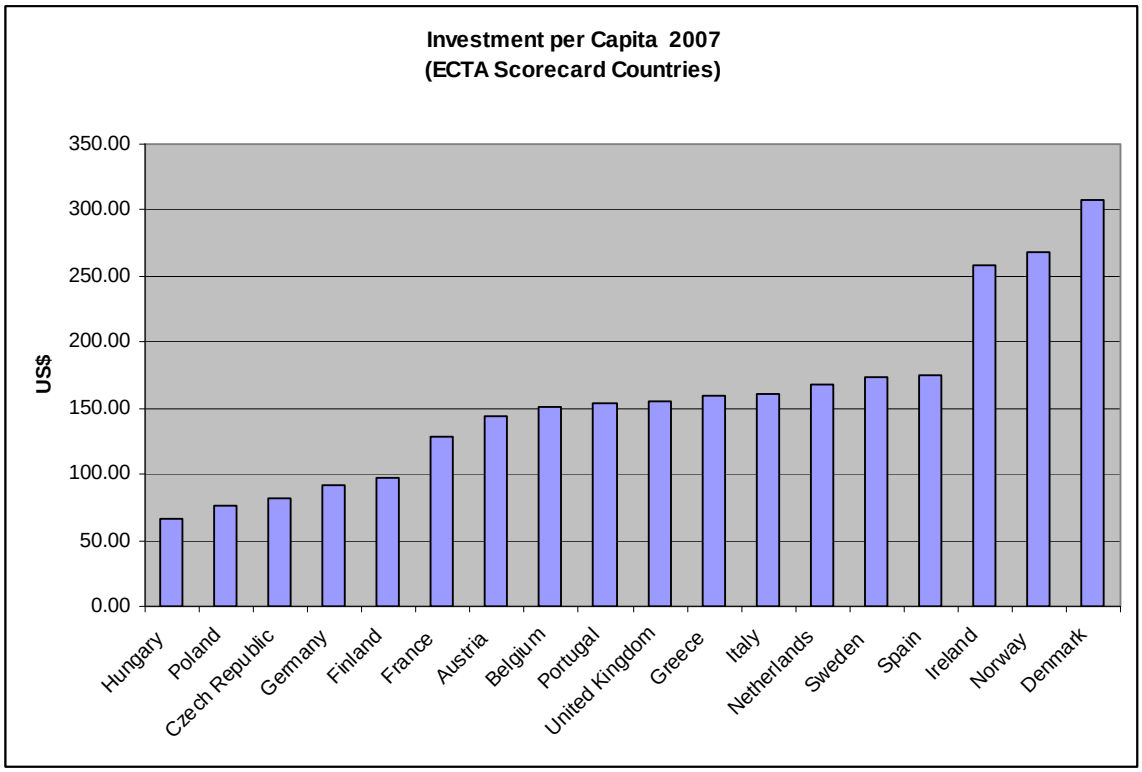
Introduction

Since the first ECTA Regulatory Scorecard was first published in 2002, we have consistently found a strong relationship between the results of the Scorecard and investment levels as published by the OECD in their bi-annual "Communications Outlook". We published a detailed analysis in November 2007 using investment data and the ECTA Regulatory Scorecard results from 2005. In this brief note, we use the most recent investment data published by the OECD in Communications Outlook 2009, which reports investment for 2007 and previous years, together with the Scorecard for 2007 and earlier years.

Background

OECD data show that investment by electronic communications companies across Europe varies significantly. The leading countries (Denmark, Norway and Ireland) each invested over $250 per capita in 2007, compared with less than $85 per capita in the New Member States of Hungary, Poland and the Czech Republic (See chart).

Our interest is what causes this variation in investment levels and specifically whether there is a significant relationship between investment and regulation.



Source: OECD, Communications Outlook 2009

Modelling

In our previous analysis we found that, in addition to regulation, there is a positive relationship between the wealth of a country, measured by Gross Domestic Product (GDP) per capita, and investment: wealthier countries tend to invest more than less wealthy countries. In the models that we have produced using the 2007 data, therefore, we have again included both the results of Scorecard and GDP per capita as explanatory variables. We report below the results of four models:

- Model 1 is a cross-section regression model using data for 2007 for 16[1] countries.
- Model 2 is a pooled model using data for the years 2005, 2006 and 2007, again for 16 countries. Pooling the data provides 48 data points.
- Model 3 is also a pooled model, but uses the log of the percentage change in GDP (DLOG) since the previous period and introduces a dummy variable (EU15) which distinguishes EU15 countries from the new member states (Czech Republic, Hungary and Poland in our sample).
- Model 4 is as Model 3 but Scorecard is lagged by one period and produces slightly stronger results.

In all four models the dependent variable is log(investment per capita). The results are presented in the table below (t-stats in brackets).

	Model			
	1	2	3	4
Constant	-6.1	-9.1	-4.4	1.4
Log(Scorecard)	0.5 (4.43)	0.3 (2.2)	0.3 (2.0)	
Log(Scorecard(t-1))				0.58 (3.1)
Log(GDP)	0.8 (6.15)	1.2 (13.1)		
DLog(GDP)			5.1 (2.7)	6.0 (3.4)
EU15 Dummy			-0.8 (-9.7)	-0.8 (-13.0)
Adjusted R^2	0.83	0.81	0.83	0.89
Durbin Watson		0.73	1.85	1.99

Source: SPC Network

As all models use log values of the variables, the resulting coefficients can be interpreted as elasticities. For example, in model 4, a 1% increase in the Scorecard result in the previous year would lead to a 0.58% increase in investment per capita. The results are consistent across the four models: the Scorecard elasticity of investment ranges between 0.3 and 0.58.

All models have strong predictive abilities (indicated by the adjusted R^2 being close to 1.0) and all variables are significant at 5% or less. The Durbin Watson (DW) statistic indicates whether there is a problem with autocorrelation, i.e. correlation between values in a time series with the previous period in the same time series. A DW close to 2.0, as in models 3 and 4, indicates that there is no such problem.

We conclude that there continues to be a strong and positive relationship between regulation of electronic communications market and investment. Firms appear to be looking for economies which are open to effective competition and where they are unlikely to encounter entry barriers as a result of poorly applied regulation allowing SMP operators to behave strategically. These findings are consistent with the analysis of previous versions of the Scorecard and its relationship with investment.

[1] Austria, Belgium, Czech Republic, Denmark, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Poland, Portugal, Spain, Sweden, UK. These were the 16 countries included in the 2005 Scorecard.