Beta-convergence and sigma-convergence in corporate governance in Europe

Pedro Verga Matos,⁎ Horácio C. Faustino

aISEG-Technical University of Lisbon, Portugal
bAdvanced Research Centre, Portugal
cISEG-Technical University of Lisbon, Portugal
dSOCIUS—Research Centre in Economic Sociology and Sociology of Organizations, Portugal

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1. Introduction

The aim of this paper is to present a beta-convergence and sigma-convergence approach to analyse the evolution of corporate governance models for the major European firms listed on the Eurofirst 300 index.¹

The notion of convergence is commonly deployed in economic growth theory and is above all applied to questions bound up with trends in earnings levels and analysing whether or not regional and/or national disparities remain in effect. According to conventional neoclassical theory, lowering the barriers to trade enables greater efficiency in the allocation of resources, resulting in an increase in earnings per capita. Due to decreasing returns on factors, the growth rate of earnings per capita is greater in poorer regions and this fact would result in the long-term convergence to the same level of per-capita earnings (Fingleton et al., 1997), Barro and Sala-i-Martin (1992, 1999) have introduced greater explanatory depth into the model, based upon studying the importance of human capital, R&D and public policies on the behaviour of economies. These are the endogenous growth and human capital theories (see for example Lucas, 1988; Mankiw et al., 1992; Romer, 1986, 1990).

The motivation for the present research is to seek answers to the following questions: (i) Are companies with weaker levels of governance quality (expressed by a lower rating) able to overcome this lag? Based on the literature review, it is observed that there is no easy to be obtained; (ii) Should such convergence be proven, does it differ from country to country, that is, does it depend on the legal/institutional framework? Only by this means can we understand whether or not the cultural and political facets are relevant to convergence processes.² Hence, this paper makes a distinction first between the Anglo-Saxon model and the continental model and then between the Anglo-Saxon, Latin and Scandinavian models (see, La Porta et al., 1997).

This paper contributes to the literature in two ways. First, to the best of our knowledge, there are few empirical studies on convergence of corporate governance that apply econometric estimation techniques. Thus, our results expand on the previous results on this subject (see for example Wójcik, 2006). Second, the paper represents an attempt to apply in this scientific area the two convergence definitions developed by economic growth theorists.

The rest of this paper is organised as follows. The second section reviews the literature. Section 3 details the methodology adopted for the data analysis. Section 4 presents a discussion of the results. The last section offers some concluding remarks.

footnote{Dallas (2004, p.142) goes so far as to state: "The legal environment is arguably the most important external factor affecting individual company governance", while adding that "(...)it is important to understand both the scope of relevant written law and the effectiveness with which it is enforced." (see also Djankov et al., 2002).}
2. Literature review

Studies on corporate governance identify two major trends. On the one hand, some authors consider that globalisation exerts pressure on both companies and countries to adopt a common model of corporate governance (Coffee, 1999, 2000; Hansmann and Kraakman, 2001), furthermore discussing which model might be more efficient. On the other hand, some authors argue that a set of economic, financial, political and cultural factors places limits on the extent of this convergence process (Bebchuck and Roe, 1999; O’Sullivan, 1999).

The conceptual questions are multiple and start from the definition of the concepts involved, particularly that of corporate governance (Blair, 1995; Monks and Minow, 2011; Shleifer and Vishny, 1997). In practice, the systemic character of governance models hinders the identification and analysis of all the key factors, such as the legal framework (Hopt, 2002; La Porta et al., 1998, 1999), the relative importance of the stock market (Licht, 1998), the ownership structure of listed and non-listed companies (Faccio and Lang, 2002; Ibrahimi and Barros, 2009), the structure and level of remuneration paid to senior management (Conyon and Peck, 1998; Maassen, 2002), or the relative weighting of the diverse stakeholders (Charkham and Simpson, 1999; Roe, 1994).

Regarding the evolution of governance models, the strong inter-relationship between the multiple factors characterising such models means that, at least theoretically, they are able to obtain equally efficient results through different combinations of factors. Hence, this does not automatically exclude diverse models from coexisting in the future, even while resulting from the approximation of those currently existing. This is the position held by the OECD and Boutilier et al. (2002), who identify that the trends are not proceeding unilaterally towards the Anglo-Saxon model, but rather merging facets of both the Anglo-Saxon and the Continental models.

Finally, the correct definition of convergence also remains subject to some outstanding controversy even though Gilson’s (2001) classification, which distinguishes between formal convergence and de facto convergence based on the adoption of shared practices, gains broad agreement.

The classification (rating) of corporate governance quality in (listed) companies is relatively recent and the emergence of this type of information is closely bound up to crises and scandals such as that of Enron in 2001. Despite the diverse scope of criticism of such measures, they are increasingly sought out by investors, given that ratings emerge as a powerful indicator of the extent to which a company is currently adding, or has the potential to add shareholder value in the future. A company with good corporate governance is generally perceived as more attractive to investors than one without it (Mallin, 2009, p.73).

The ratings issued by Deminor (2003) are based upon analysis of over 300 indicators gathered from regularly published data and grouped into four categories: Rights and Duties of Shareholders, Range of Takeover Defences, Disclosure on Corporate Governance, and Board Structure and Functioning. The rating reflects the level of adoption and/or compliance with the principles of good corporate governance (Deminor Rating Standard), in accordance with a scale of 1 (more questionable practices) to 5 (best practices), resulting in an overall rating arrived at by aggregating the four aforementioned categories and hence forming an evaluation range of between 4 and 20.

Nevertheless, we should stress the limitations of applying theoretical economic growth models to the evolution of ratings-based evaluations of corporate governance models. In effect, while per-capita production levels are not capped in any way, the rating does come with a pre-established maximum value. Hence, theoretically, from a certain point, it becomes impossible to improve further. Considering the hypothesis that all companies are keen on boosting their rating, it may be expected for all companies to converge on the same value in the long term. It should also be noted that applying changes in the rating is the correct approach, given that such ratings are produced by an independent entity and with no value judgement associated with any alteration. Consequently, this allows us to analyse whether or not companies converge on a common standard and hence test our convergence hypothesis.

3. Methodology

3.1. Beta convergence and sigma convergence hypotheses

The most common methodology to analyse economic convergence was developed by Barro (1991) and Barro and Sala-i-Martin (1992) and consists of estimating the following model:

\[ Z_t = \beta_0 + \beta_1 P_t + U_t \]

in which:

- \( Z_t \) per-capita (or product) growth rate of a country or region at period \( t \);
- \( P_t \) initial level of per capita income (or product) of a country or region at period \( t \) (\( t=t_0 \));
- \( \beta_0, \beta_1 \) parameters to be estimated;
- \( U_t \) random residual.

The model generally includes a set of control variables, such as investment, capital stock, education levels and public expenditure, as well as qualitative variables that reflect the importance of the prevailing legal framework, political stability or even cultural and religious factors (Barro, 1991, 1996, 2001; Barro and McCleary, 2003; Bils and Klenow, 2000).

Should the earnings levels of different countries converge, then the estimate for \( \beta_1 \), should be negative corresponding to a production growth rate higher in countries/regions with lower starting levels of output. This is denominated as beta convergence, given that it is evaluated by the coefficient estimate associated with the independent variable.

Raising both conceptual and econometric questions, some authors, such as McGrattan and Schmitz (1999), focus their analysis not on economic convergence, but rather on the range of income dispersion at a particular point in time, due to a consideration that the concept of convergence incorporates a lower level of per-capita sectional income dispersion and that a negative estimate for \( \beta_1 \) does not guarantee such a decrease in dispersion. These authors thus defend convergence studies based on levels of per-capita income dispersion, thus determining estimates for standard dispersion deviation (sigma-convergence). The fact that beta-convergence is a necessary but insufficient condition for sigma-convergence has led to these two topics being analysed in parallel.

Lichtenberg (1994) demonstrated that the two convergence definitions are not equivalent. Effectively, the verification of sigma-convergence – measured by the ratio of dispersion of results observed over two different periods of time – depends not only on verifying beta-convergence, but also the coefficient of determination of his growth rate model.

3.2. Linear models in parameters and variables

The characteristics of the problem and the variables under study enable an analytical approach to corporate governance models based on linear models. The item scale runs from one to five (partial ratings); given that each company is evaluated across four items, its minimum possible rating is four against a feasible maximum of twenty. We excluded all companies that were not rated across all four components, rather studying only total company ratings (the sum of the four partial ratings) in 2000 and in 2003 (198 companies).
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