

# **Susanne Warning, *The Economic Analysis of Universities: Strategic Groups and Positioning***

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The higher education sector is becoming increasingly competitive. In *The Economic Analysis of Universities: Strategic Groups and Positioning*, Susanne Warning raises many interesting questions about the implications of such competition on research and teaching quality. Unfortunately, she does not provide, in my view, many convincing answers.

The book focuses mainly on publicly funded universities and uses German public universities as a case study. The analysis is based on two different theoretical approaches — the strategic-groups model from management theory, and the product-differentiation model from industrial organization — which are tested using data from the German higher education sector.

In Chapter 2, Warning describes the German higher education sector. She provides information on the institutional background, particularly regarding teaching, research, financing and staff numbers in German universities.

She deploys three types of research indicators: the number of publications, the amount of research grants and the number of ‘habilitations’, which is a formal qualification to teach in a tenured position rather specific to scientific universities in Germany. Concerning the evaluation of publications, she gathers evidence on Citation Indexes from the Institute for Scientific Information (ISI). Even though such an exercise can give a very rough picture of research quality, it has been argued by several papers on rankings of journals and departments (see, for instance, Kalaitzidakis *et al.* 2003 and Lumbrano *et al.* 2003) that Citation Indexes by themselves are rather imperfect measures of research quality. I think that some discussion or acknowledgement of this would have been pertinent, as the author cites them in a later section when she examines German higher education in the international context and notes that, according to Kalaitzidakis *et al.* 2003, only one German institution ranks among the top 50 economics institutions. In this section she also uses data from *Education at a Glance* (OECD

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2003) that I think could have been updated by the time the book was published in 2007.

In Chapter 3, Warning includes a survey of the theoretical and empirical contributions in the literature on positioning, focusing on the two main functions of universities: teaching and research. She claims that the theoretical literature has correctly identified the basic trade-off universities face between teaching and research but argues that it has failed to explain the strategic positioning of universities, particularly concerning research. In her view, empirical research based on Data Envelopment Analysis (DEA) suggests that heterogeneity in research is significant and greater than that in teaching, contradicting theoretical studies that have identified heterogeneity in teaching but have largely ignored heterogeneity in research.

In Chapters 4 and 5, Warning develops two theoretical approaches to explain the positioning of German universities, paying particular attention to the specific characteristics of a publicly funded university system. In Chapter 4, she applies the concept of strategic groups, common in the business literature, to universities. She considers teaching and research as the two main strategic variables affecting performance and industry structure, and derives the following testable hypothesis: that heterogeneity is greater in research than in teaching (H1) and that the impact of teaching quality and of research quality is greater for the group of high-ranked universities than for the group of low-ranked universities (H2a, H2b). Although the concept of strategic groups offers an explanation of how strategic variables affect university performance, it does not explain how universities position themselves in teaching and research quality in equilibrium. Warning then develops a complementary two-dimensional differentiation model, familiar in the industrial organization literature, to fill this gap in Chapter 5. This model is a variant of Vandenbosch and Weinberg (1995) in which universities receive a fixed amount per student from the State and provide support to students to attract them. The model concentrates on teaching and research as separate tasks. A demand effect pulls universities together in one dimension and a strategic effect forces them apart in the other dimension. The result is that they choose minimum differentiation in one dimension (teaching) and maximum differentiation in the other dimension (research). The reason why maximum differentiation takes place in research is, in her view, linked to the fact that investments in research are more specific than in teaching, which makes changing positions in research quality more difficult. From this model the author derives additional testable hypotheses: that universities attach greater weights to teaching than to research (H3), and that the probability of being a high-ranked university depends more on research quality than on teaching quality (H4).

Warning then tests the theoretical hypothesis, using both non-parametric and parametric empirical methods, in Chapters 6 and 7. She employs Data

Envelopment Analysis (DEA)<sup>2</sup> to evaluate the performance of universities in Chapter 6. She argues that DEA provides the most appropriate measure in environments with multiple inputs and outputs and unavailable or nonexistent market prices (for outputs, inputs or both), which is the case of a university sector that is largely publicly financed. She claims that the results obtained lend support to the hypothesis that heterogeneity is greater in research than in teaching (H1) and suggest the existence of significant differences in overall performance across institutions (H2a, H2b). In subsection 6.4.2 the author finds that all universities put a high weight on teaching while only some do so on research, with larger average weights for teaching overall (H3). The efficiency scores are then used in an econometric analysis that aims to explain these performance differences in Chapter 7. In section 7.3 she presents several probit regressions that aim to evaluate the influence of research quality and teaching quality on the predicted probability of being in the high- or low-performance groups. The results obtained suggest that high research quality has a positive effect on the probability that a university is in the high-performance group (H4).

In my view, however, the time span of the data used — from 1997 to 2000 — is rather too short for the kind of issues that are investigated — in particular, positioning in research and teaching — and I have doubts about the appropriateness of the interpretations of many results.

It is clear that Warning has read thoroughly and drawn from a very diverse set of sources, which is highly commendable. I find the idea of establishing a bridge between different disciplines quite interesting. I am left, however, with the impression that the attempt is not completely successful. Some of the author's original contributions would have greatly benefited from a proper refereeing process if she had attempted to publish them in peer-reviewed journals rather than in a book. I truly believe that some of her ideas deserved more and that a peer-reviewed refereeing process would have contributed to improve the content and polish the form.

The prose is certainly quite poor throughout the book, excepting, perhaps, in the concluding chapter. This makes reading and understanding the arguments exposed a challenging task. I do not blame the author herself for this deficiency: I am not a native English speaker, and fully understand the difficulties involved. However, I do fault the editors for not doing their job properly. Despite the author's acknowledgements to three anonymous referees in the Preface, it seems

<sup>2</sup> Data Envelopment Analysis (DEA) is a non-parametric method for the estimation of production frontiers. It is used to measure the productive efficiency of decision-making units (or DMUs), where a DMU is a distinct unit within an organisation that has flexibility with respect to its decisions, but not necessarily complete freedom over these decisions. University departments are one example. DEA is based on linear programming techniques and is capable of measuring the efficiency of multiple DMUs when the production process presents a structure of multiple inputs and outputs with no need to explicitly specify a mathematical form for the production function.

as if nobody read the manuscript before it went to press. If this had been done I imagine that the many grammatical mistakes and typos present in the text would not have gone uncorrected. In its present state I cannot recommend its purchase.

## References

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