

Market Structure and Equilibrium

Heinrich von Stackelberg

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Translated by Damien Bazin (Scientific Director),
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 Springer

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1905–1946
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To my wife, Isabelle, with love.

About the Translators



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Comments On The Translation

The idea of translating the work of German economist Heinrich Freiherr von Stackelberg (1905–1946) came to me as I was teaching international economics and economic game theory in a university context. My students constantly confound the concepts of monopoly, oligopoly (simple, bilateral or contested) and oligopsony, but also the concept of perfect competition. This inability to classify the different markets reappeared when I was teaching abroad. Rather than cast doubt on the aptitudes of my students to understand, I chose to examine my own approach as a teacher. On asking my learned colleagues if they too had experienced this phenomenon in their teaching, it came as no surprise to me when they responded that unfortunately Stackelberg's famous market classification table was only memorised by their students for a limited period. It is true that our memories are selective and that something learned out of context is not internalised and indeed often quickly forgotten. If we support Nicolas Boileau's view then, "Whatever we conceive well we express clearly, and words flow with ease" (an extract from *Art poétique*). This quote contains a degree of truth. My students did not have the means to assimilate how and why the problems associated with competition and the effective organisation of markets were of key importance and remain vital to this day.

When we undertook to translate *Marktform und Gleichgewicht* my first goal was to make the founding concepts of Heinrich Freiherr von Stackelberg more accessible. Such an access would have to stem from the contextualisation of the author's thinking as this would enable us to find the paths he followed and the intrinsic reasons that motivated him to present his own particular view of modern economics. In a more specific sense, his vision of the world in relation to what influences competition was refined by way of dyopoly (duopoly) models. Stackelberg both revisits the work of the French mathematician-economists Antoine Augustin Cournot and Joseph Louis François Bertrand and provides a perspective on the subject of conjectural interdependence (situational issues involving company leaders and satellite companies).

If the intention of this translation project is to highlight one of the cornerstone pieces of work in Economic Science, it has to be added that this book would not have seen the light of day but for the skill and enthusiasm of other professionals who from the outset were willing to participate in the project. I would like to acknowledge the work of Lynn Urch and Rowland Hill who collaborated fully on the translation of the book. Indeed, the scale of the work, its conceptual richness, the use of very specific and technical terms, but in addition the difficulty in interpretation led us to work together as an academic team throughout. Their valuable help with the German and the English has more than amply contributed to the success and to the fullness of this translation, which could not have been achieved without regular exchange, suggestions and necessary improvements. I would also like to thank Barbara Fess, Dr. Werner A Müller and Dr. Martina Bihn from *Springer Publishing Company* for their confidence. Naturally, as a science researcher I had to make both scientific and linguistic decisions in order to preserve the wholeness of the book; I take full responsibility for these choices. By deciding to translate this pivotal text from German to English and hence make it available to many more readers, we hope in some small way to be able to offer a new insight.

Nevertheless, the reader needs to be aware of the risks involved in translating any work. To translate is to unequivocally accept the likelihood of subjectivity and hence the risk of a subjective interpretation of the author's words, even if all attempts have been made to remain as faithful as possible to the original text. We aimed to "stay true" to the German on every occasion and where lexical choices however did have to be made they were made in order to facilitate the ease of access to the book by the reader. In a spirit of candidness we wish to make this clear right from the start.

Dr. Damien Bazin

Translators' Commentary

We have assumed that the target audience of this English translation will include international academics and students whose mother tongue may not be English. Therefore, on occasion we have opted for a lower register lexical choice to try to optimise the accessibility of this translation e.g. "*gave up* his own market dominance 'rather than' renounced" pp. 18. Furthermore, where Stackelberg has used synonyms for stylistic reasons, we have intentionally repeated a lexical noun choice in our translation firstly to avoid confusion ("circumstance(s)" (Umständen; Tatbestände), see pp. 9) and secondly as a reaction to the conceptual richness of the work, especially in the Mathematical Appendix e.g. (Voraussetzung pp. 6; Prämisse pp. 2: "assumption"). The verb "sich richten" is used frequently by Stackelberg in Chapter 2 (e.g. pp. 16) and although Leontief (pp. 555) translates this as "to follow", we have decided to use the literal translation, "to orientate oneself". It is the translators' subjective decision to stay closer to the text than Leontief. The decision has also been taken to split some lengthy paragraphs appearing in the original text to increase accessibility to the modern reader.

It has been possible to maintain a high degree of lexical consistency and thus cohesion throughout the book by using a computerised translation memory which prompts target text selections through recognition of individual words and phrases chosen earlier in the text by the translator, and even manages multiple meanings. As early as 1934, *Marktform und Gleichgewicht* was reviewed in English and a corpus of these and other relevant publications was constructed as a primary source of terminology for translation. These lexical choices have been clearly cited in the text as bracketed translator's notes citing the source text and page number, see pp. 2. Where possible, 1930s technical terminology has been used even if this has been superseded by later additions. As the first of these reviewers, Leontief has been given precedence over the others and his terms have been used even in instances where an alternative spelling has become common nowadays, for example, a translator might have decided on "duopoly", but Leontief (pp. 555) states that Stackelberg uses "dyopoly" in English, see pp. 16. The internet has been selectively used as a corpus of material to supplement other valuable online resources, notably

the Oxford English Dictionary and the British National Corpus (100 million word collection of samples of spoken and written English), especially to check collocation.

Frustratingly, despite the extensive online resources available now, the translators have been unable to entirely confirm the translation of certain terms, such as "directional tangent vector" (Richtungstangenz) pp. 121, "quantity independence point" (Mengenunabhängigkeitspunkt) and "price independence point" (Preisabhängigkeitspunkt) pp. 58, "comparison combination" (Vergleichskombination) pp. 54. as well as "with the highest index" (mit dem absolute höchsten Index) pp. 42. Terms that were queried and the translations confirmed include "marginally" (auf dem Rande) pp. 42 and "combinations" (Kombinationen) pp. 44. Examples of those that were supplied by other members of the translation team include "non-negative part" (dem nicht negativen Teil) pp. 42 and "sequence of reactions" (Reaktionsreihe) pp. 59.

In the course of such online searches, it was interesting to note that Stackelberg's book is cited in very recent publications, the economic crisis of 2007 in some ways mirroring that of the 1930s when the author was writing. Aside from his ideas, the richness of Stackelberg's language is also impressive. He was a polyglot, able to communicate in multiple European languages which he did as a lecturer in various universities across Europe. He clearly expected his reader to read many languages too, as evidenced by his inclusion of quotations in this book, some lengthy, in Greek (pp. 2), French (pp. 65), Italian (pp. 71; 72), Danish (pp. 77) and English (pp. 80), and by the fact that he did not offer a single translation of any foreign title, quotation, etc. into German.

In order to help guide the reader in his or her bibliographical research we took the decision to provide the title of a foreign work in English where this title has already been translated. These translations, in *italic*, are located in square brackets immediately after the original title (only included after the first appearance of the title).

It has been a pleasure and a privilege to be involved in the translation of such a work.

Damien Bazin, Lynn Urch and Rowland Hill

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Chapter 1

Stating the Economic Problem and Basic Principles

§ 1. Stating the Economic Problem

Classical theory – which also includes classical doctrines from both the marginal utility and in particular the mathematical schools of economic thought – has primarily focused on a market structure characterised by a large number of independent economic agents, or market participants, competing with one another. Here price is rightly regarded as a variable, independent of the behaviour of the individual. It appears that a well-defined equilibrium under this market can be derived from the given premise that such a market is therefore a functioning mechanism in the whole structure of the economy. In addition, the problem of monopoly in its narrowest sense has also been thoroughly investigated in some detail. It appears that when the supply sides or the demand sides are combined in the hand of a single economic agent, a similarly well-defined but different equilibrium occurs.

However, the clash of opinions concerning treatment of the hybrid form has not yet been resolved. There is also no systematic investigation of the problem that encompasses all conceivable market structures and analyses the relationships of mutually interdependent markets. In the following work we will seek to establish the principles to fill in these gaps. To begin with we will immediately determine the market structures themselves. We therefore do not intend to examine how the various market structures can come about due to specific development trends that have a dynamic impact on the economy. The results of our study always arise whenever and wherever specific market structures occur, for whatever reason. Thus preliminary work is carried out in order to review these remodelling tendencies. We will be able to directly extract from this study the final link in a logical chain of conclusions reached for a particular market structure.