

Growth and returns to new products and pack varieties: the case of UK pharmaceuticals

Anna Rita Bennato, Farasat A.S. Bokhari, Franco Mariuzzo

KEYWORDS: Pharmaceuticals, growth, product differentiation, non-linear pricing

BACKGROUND

- In pharmaceuticals, product differentiation and price discrimination are sometimes achieved by introducing new varieties of existing products. A new variety may introduce a different molecule or a new delivery mechanism for an existing drug that allows a firm to differentiate their drug from that of a competitor, such as an extended release drug, or it may be a variation in pack size or strength that allows the firm to price discriminate by charging different price per unit of quantity. The use of these two different approaches is not peculiar to modern pharmaceutical companies, as both strategies have been widely recognized in the industry in the past.
- Thus, building on the insights gained from the literature on innovation, growth and firm size (inter alia Hall, 1987; Geroski and Machin, 1992, Freel, 2000), we quantify the returns from introducing additional drugs or products within the same therapeutic class, and from introducing additional packs for a given drug on a business unit's growth. We think of the introduction of new products within the same therapeutic class as a product differentiation strategy that requires innovation and R&D by the firm, and that of introducing additional packs that vary by strength or size as a non-linear pricing strategy by the firm

METHODOLOGY

- We use quarterly sales data from the UK pharmaceutical prescription market during the 2003-2014 period in a dynamic lag adjustment growth model to measure firms' growth by therapeutic class, i.e., by the business unit, and identify the impact of additional product forms and of new pack varieties on growth. We treat the introduction of new products and packs as potentially endogenous and instrument for these variables in a dynamic growth model.
- The primary difficulty regarding identification is that previous growth in previous periods may have an impact on both the current growth, and any change in the number of products and packs by the business unit. Moreover, other unobserved factors may explain changes in both of the variables. To overcome this problem, we use the lagged values of growth in the specification but also use a firm's propensity to introduce products and packs – as measured by the average values of these same variables in other periods and related anatomical classes – as instruments for the endogenous variables.

KEY FINDINGS

- We find that smaller firms grow faster than larger ones. Our main result is that the introduction of new formulations, as well as of new packs, has a significant impact on growth in the short run, but only new forms have a long term effect on growth. A new product contributes to 18 per cent growth of the business unit while a new pack variety leads to 7 per cent growth for the business unit in the long run.
- Further, we find that new product introductions and new pack varieties have a stronger effect on growth for smaller business units than larger ones. For instance, the long run marginal effect of new products on growth is positive and much greater for small business units than for large business units. However, the difference in marginal effect

W: www.competitionpolicy.ac.uk

T: +44 (0)1603 593715

A: UEA, Norwich, NR4 7TJ

with respect to pack variety by size of business unit is smaller and not statistically different by size of the unit.

POLICY ISSUES

- Small variations of existing products by molecule or form within a therapeutic class are called follow-on or me-too drugs. The introduction of such drugs has been criticized as a work around to intellectual property rights and its limits and some have even called for a ban on authorizing me-too drugs unless they demonstrate clinical superiority over the existing original drugs arguing that they do not increase any consumer welfare. However, to the extent that additional products in an anatomical class can be thought of as me-too drugs, we interpret the first result on new products as empirical evidence that innovation is an important driver of a firm's growth. We also find that strategies of second degree price discrimination, such as increasing pack variety, can contribute to triggering short term growth for the firm.

SUGGESTED CITATION

Bennato, Anna Rita, Bokhari, Farasat A.S. and Mariuzzo, Franco, Growth and returns to new products and pack varieties: the case of UK pharmaceuticals. CCP Working Paper No. 16-2. Available at <http://competitionpolicy.ac.uk/publications/working-papers>

THE CCP

The Centre for Competition Policy (CCP), at the University of East Anglia, undertakes competition policy research, incorporating economic, legal, management and political science perspectives, that has real-world policy relevance without compromising academic rigour.

FOR MORE INFORMATION

More information about CCP and its research is available from our website:
www.competitionpolicy.ac.uk

ABOUT THE AUTHORS

- Anna Rita Bennato is a Senior Lecturer in the Department of Accounting, Finance and Economics at Oxford Brookes University and also a member of the Centre for Competition Policy at the University of East Anglia.
- Farasat Bokhari is a Senior Lecturer (Associate Professor) in Economics at the UEA School of Economics and a member of the Centre for Competition Policy at the University of East Anglia.
- Franco Mariuzzo is a Lecturer in Economics at the UEA and also a member of the Centre for Competition Policy at the University of East Anglia.