



ELSEVIER

Information Economics and Policy 13 (2001) 439–460

**INFORMATION
ECONOMICS
AND POLICY**

www.elsevier.com/locate/econbase

The impacts of innovations and standards on trade of measurement and testing products: empirical results of Switzerland's bilateral trade flows with Germany, France and the UK

Knut Blind*

Fraunhofer Institute for Systems and Innovation Research, Breslauer Str. 48, D-76139 Karlsruhe, Germany

Received 8 December 2000; accepted 15 March 2001

Abstract

Nowadays, the impact of the measurement and testing infrastructure on economic performance and trade is theoretically and even politically widely accepted. However, there are no empirical studies on this issue. The purpose of this paper is to elucidate the impact of innovative capacity and technical standards as one important part of the measurement and testing infrastructure on international trade flows and competitiveness. In order to focus on the direct causality between innovative technology and measurement and testing standards and the respective market, the empirical analysis concentrates on the trade of measurement and testing products of a country with a top position in measurement and testing technology. In its empirical analysis of Switzerland's trade flows with Germany, France and the UK, the paper follows the approach of the pioneering paper of Swann et al. (*Economic Journal* 106 (1996) 1297), who integrated for the first time technical standards as a technology indicator in the estimation of UK trade performance. The trade flows in measurement and testing products from 1980 until 1995 are explained by both an indicator for innovative capacity and for the degree of standardisation. The first indicator is based on the patent applications at the European patent office. The latter uses the stocks of technical standards in the countries differentiated by their regional scope. Four different trade equations are analysed, besides an export and an import function, the trade balance and the intra-industry trade. The results clearly show that both Switzerland's innovative capacity and its stocks of standards are able to explain its export performance in the three countries. Secondly, especially the stocks of international standards in Switzerland have a positive

*Tel.: +49-721-6809-212; fax: +49-721-6809-260.

E-mail address: kb@isi.fhg.de (K. Blind).

impact on imports into Switzerland from the three countries, confirming their positive role for fostering trade in general. Thirdly, Switzerland's export surplus concerning the three trade partners is positively affected by the stocks of international standards in Switzerland, which seem to be an important factor for international competitiveness. Finally, the results of the intra-industry model underline the common view of the general trade-fostering effect of even national standards in the case of the trade with the three countries. © 2001 Elsevier Science B.V. All rights reserved.

Keywords: Innovation; Measurement and testing products; Patents; Technical standards; Trade flows

JEL Classification: D8; F23; L15; O34

1. Introduction

In 1998, the European Commission published a brochure *Setting the Standard: 25 Years of Quality Measurement*. The description of the 25-year-old tradition of standardisation, measurement and testing underlines in an impressive manner the importance of measurements and standards in our lives. The quality of the products and services we consume, the competitiveness of our industries and the quality of our environment depend on being able to make accurate and reliable measurements. However, the economic analysis of measurement and testing has not been well developed until today. Although Kindleberger (1983: 377) has stated that standards of measurement can be classified as a public good in the sense that they are available for use by all and that use by any one economic actor does not hinder the use by others,¹ there are no broad follow-up studies about this economic dimension of standards.¹ In addition to their public good character, they produce economies of scale, in that the more economic actors use a given standard, the more everybody gains from use by others caused by increased comparability and interchangeability. Standards of measurement and testing are designed to reduce transaction costs.

The regional dimension of standards is affecting both the economies of scale and the transaction cost aspect of standards. Concerning the first, the larger its economies of scale the wider the regional scope of a measurement and testing standard. Secondly, the reduction of transaction costs will be higher, when transnational transactions are considered, because the saving potential is larger compared to intranational transactions. Consequently, international standards may increase international trade flows more intensively, compared to national standards. Still, the economic impact of measurement and testing on international trade has been not well developed. Furthermore, the system of measurement and testing standards and conformity assessment based upon it represent an important part of the technological infrastructure of a country, which may cause economies of scale for the producers and contributes to their competitive advantage.

¹ This evaluation is confirmed by the extensive survey of David and Greenstein (1990).

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات