Abhandlungen

Alexander Donges and Felix Selgert: Patent Law and Innovation in Europe during the Industrial Revolution

Abstract: Human capital, access to markets, and innovation-friendly institutions were important preconditions for the acceleration of technological change during the industrial revolution. In this context, the recent literature discusses the role of patents. Given their dual nature, patents may have either stimulated innovation through the creation of financial incentives for inventors or they may have hampered innovation, because they created monopolies that restricted the free flow of knowledge. For this reason, the overall effects of patents on innovation and, eventually, long-run economic growth are not clear. In order to develop a better understanding of the determinants of innovation, this special issue of the Economic History Yearbook therefore focuses on the causes and consequences of patent laws and patent law reforms in the nineteenth and early twentieth century in different European countries.

JEL-Codes: K 11, N 43, N 73, O 14, O 3

Keywords: Innovation, Intellectual Property, Patents, Patent Law, Technological Change, Innovation, geistiges Eigentum, Patente, Patentrecht, technologischer Wandel

Alexander Donges
is Postdoctoral Researcher in Economic History at the University of Mannheim. His research focuses on the economic history of Germany in the 19th and early 20th century. Alexander Donges holds a Ph.D. (2013) in Economics from the University of Mannheim. During his doctoral studies, he was visiting researcher at NTNU Trondheim and fellow of the research group "Thyssen in the 20th century" at the University of Bonn. Before, Alexander Donges studied Economics (degree: Diplom-Volkswirt) at the University of Mannheim.

Felix Selgert
is lecturer (Akademischer Rat) in Economic History at the University of Bonn, Germany. He studied Economics and History at the University of Mannheim between 2003 and 2007. In his Ph.D. thesis (2013, Mannheim) he analysed the implementation of administrative and legal reforms in the German state of Baden during the nineteenth-century. Between 2013 and 2016 he was a Post-Doc in the DFG-project “The Political Economy of Corporate Governance” at the Department of Economic and Social History at the University of Vienna.

Alexander Donges (Dr.), Universität Mannheim, Abteilung Volkswirtschaftslehre, L7, 3-5. D-68131 Mannheim, E-Mail: donges@uni-mannheim.de

Felix Selgert (Dr.), Rheinische Friedrich-Wilhelms-Universität Bonn, Abt. Verfassungs-, Sozial- und Wirtschaftsgeschichte, Konvikstraße 11, D-53113 Bonn, E-Mail: fselgert@uni-bonn.de

Sean Bottomley: Patents, Invention and Democracy in Britain and the United States to 1852

Abstract: This paper surveys the American and British patent systems in the period prior to the latter’s reform in 1852 and coinciding with the period of the first industrial revolution. It has been suggested that the British system’s archaic application procedure, extortionately high fees and hostile courts were indicative of an oligarchic socio-political system that purposely
sought to restrict access to patent protection, as was apparently typical across Europe. Conversely, the American system was an open and democratic one, intended to provide patent protection to as many sections of society as possible. This paper argues for a less stylized comparison. British courts were not so hostile to patents (and patentees) as has been commonly supposed. Neither was it so difficult to obtain patent protection: for all its faults, the evidence that the British patent system was designed to restrict access to its provisions is nugatory. Consequently, explanations for America’s technological catch-up and eventual supplantation of Britain and Europe as global technological leader cannot invoke ‘superior’ patent institutions as a contributory factor.

**JEL-Codes:** N 40, O 30, O 43

**Keywords:** patent institutions, technological development, Patentsysteme, technologische Entwicklung

**Sean Bottomley**

was awarded his PhD in History at the University of Cambridge in 2012; his dissertation on the British patent system won the Economic History Society’s Thirsk-Feinstein prize. He has subsequently expanded the scope of his research with papers in The Journal of Legal History, Explorations in Economic History and Economic History Review. He has also published a book with Cambridge University Press entitled 'The British Patent System during the Industrial Revolution 1700-1852′, for which he won the Economic History Society’s First Monograph Prize and the Selden Society’s David Yale Prize. He is currently a postdoctoral research associate at the Max Planck Institute for European Legal History.

**Sean Bottomley** (PhD), Max Planck Institute for European Legal History, Hansaallee 41, D-60323 Frankfurt, E-Mail: sean.bottomley@iast.fr

---

**Gabriel Galvez-Behar: The Patent System during the French Industrial Revolution: Institutional Change and Economic Effects**

**Abstract:** The influence of the patent system on the economic performance of Western countries during the Industrial Revolution is an important but difficult question to address. With the United Kingdom and the United States, France was one of the first countries to adopt a modern patent legislation in 1791. The aim of this paper is to understand the paradox of such a system, which was based on a democratic and natural-right conception of invention but turned out to be restrictive. It analyses the legal framework and its evolution from 1791 to the late 1850s and reveals its contradictory aspects: a natural right inspiration vs a restrictive access due to the cost of the patent. It shows how the 1844 Patent Act reform did not end the criticism of the French patent system. Then, in a second part, it considers the diffusion of patents in time, in different regions and industries and stresses the heterogeneity of the patent system.

**JEL Codes:** N 73, O 14, O 34

**Keywords:** innovation, patent system, France, industrial revolution, Innovationen, Patentsystem, Frankreich, Industrielle Revolution

**Gabriel Galvez-Behar**

is Professor of History at the University of Lille. His research focuses on the history of innovation and on the commercialization of scientific research. He is the author of La République des inventeurs: propriété et organisation de l’innovation en France (1791-1922) (Presses universitaires de Rennes, 2008). He has recently co-edited two special issues on the academic entrepreneurship: “Commercializing science: nineteenth- and twentieth-century academic scientists as consultants, patentees, and entrepreneurs”, History and Technology (2017, with Joris Mercelis and Anna Guagnini); “Academic entrepreneurship and institutional

Gabriel Galvez-Behar (Prof. Dr.), Université de Lille – Institut de recherches historiques du Septentrion, Domaine universitaire du Pont de Bois, F-59653 Villeneuve d'Ascq Cedex, E-Mail: gabriel.galvez-behar@univ-lille.fr


Abstract: In this article, we give an overview of the differences in German patent legislations between 1815 and 1876. German patent laws differed in particular with regard to the application and approval system, the treatment of foreign applicants, and patent fees. Differences in the former two categories provide an explanation why the number of patents was considerably lower in Prussia than in other states. While the number of Prussian patents per capita almost stagnated between 1840 and 1872, it increased in Baden, Bavaria and Saxony. Formal differences in patent law do not fully explain this pattern, but Prussian patent policy does. The Prussian patent authority set high barriers to get a patent by applying a thorough technical examination and a strict definition of novelty. Furthermore, we show that states using a registration system granted a considerably higher number of patents than states with technical examinations.

JEL-Codes: D 2, K 11, L 51, N 0, O 14

Keywords: innovation, intellectual property, patents, patent law, technological change, Innovation, geistiges Eigentum, Patente, Patentrecht, Technologischer Wandel

Alexander Donges is Postdoctoral Researcher in Economic History at the University of Mannheim. His research focuses on the economic history of Germany in the 19th and early 20th century. Alexander Donges holds a Ph.D. (2013) in Economics from the University of Mannheim. During his doctoral studies, he was visiting researcher at NTNU Trondheim and fellow of the research group "Thyssen in the 20th century" at the University of Bonn. Before, Alexander Donges studied Economics (degree: Diplom-Volkswirt) at the University of Mannheim.

Felix Selgert is lecturer (Akademischer Rat) in Economic History at the University of Bonn, Germany. He studied Economics and History at the University of Mannheim between 2003 and 2007. In his Ph.D. thesis (2013, Mannheim) he analysed the implementation of administrative and legal reforms in the German state of Baden during the nineteenth-century. Between 2013 and 2016 he was a Post-Doc in the DFG-project “The Political Economy of Corporate Governance” at the Department of Economic and Social History at the University of Vienna.

Felix Selgert is lecturer (Akademischer Rat) in Economic History at the University of Bonn, Germany. He studied Economics and History at the University of Mannheim between 2003 and 2007. In his Ph.D. thesis (2013, Mannheim) he analysed the implementation of administrative and legal reforms in the German state of Baden during the nineteenth-century. Between 2013 and 2016 he was a Post-Doc in the DFG-project “The Political Economy of Corporate Governance” at the Department of Economic and Social History at the University of Vienna.

Alexander Donges (Dr.), Universität Mannheim, Abteilung Volkswirtschaftslehre, L7, 3-5. D-68131 Mannheim, E-Mail: donges@uni-mannheim.de

Felix Selgert (Dr.), Rheinische Friedrich-Wilhelms-Universität Bonn, Abt. Verfassungs-, Sozial- und Wirtschaftsgeschichte, Konvikstraße 11, D-53113 Bonn, E-Mail: fselgert@uni-bonn.de

**Abstract:** In 1864, the patent law of the Kingdom of Sardinia was extended to the newly created Kingdom of Italy. In this paper, on the basis of a new dataset containing all Italian patents granted over the period 1855-1872, we examine the formative years of this crucial institutional change. Firstly, we map the characteristics of the inventors before and after the 1864 reform. In particular, we look at their nationality and geographical distribution within the country, the technological fields in which they were active, the intensity of use of the system (sporadic versus “systematic” patentees), and their investments in patent protection (measured in terms of the fees they were paying). We find that the reform of the patent system prompted a reconfiguration of the geographical structure of Italian inventive activity, producing an increasing participation of the inventors of the other pre-unitary states, and, at the same time, becoming more attractive for inventors on a large international scale. This can be interpreted as a sign of an effective integration policy, at least in this specific domain of government activity.

**JEL-Codes:** N 73, O 31, O 34

**Keywords:** patents, Risorgimento, innovation, Italy, Patente, Risorgimento, Innovation, Italien

**Alessandro Nuvolari**
is Professor of Economic History and Director of the Institute of Economics at Scuola Superiore Sant’Anna. He was educated at Bocconi University, Milan, Italy and at Eindhoven University of Technology, the Netherlands, where he received a PhD in Economics. His main research field is the study of the role played by science and technology in the emergence and consolidation of modern economic growth with a particular focus on the Industrial Revolution in England and the early industrialization of Italy. He has also studied the connection between patents and inventive activities both in historical and contemporary contexts. His research papers have been published in a wide range of journals including: *Economic History Review, Technology and Culture, Industrial and Corporate Change, Explorations in Economic History, Journal of Economic History, Business History Review, Research Policy, Cambridge Journal of Economics and Transactions of the Newcomen Society*.

**Michelangelo Vasta**
received his D.Phil at the University of Oxford. He is Professor of Economic History at the Department of Economics and Statistics of the University of Siena. Most of his research work has dealt with Italian economic development from the Unification to the present. His fields of research range over macro and micro perspectives and focus on technical change, institutions, international trade, corporate networks and entrepreneurship. He has been published extensively in the major economic and business history journals such as: *Cliometrica, Economic History Review, European Review of Economic History, Explorations in Economic History, Journal of Economic History, Business History, Business History Review and Enterprise and Society*.

**Alessandro Nuvolari** (Prof.), Institute of Economics, Scuola Superiore Sant’Anna, Piazza Martiri della Liberta 33, I-56127 Pisa, E-Mail: alessandro.nuvolari@santannapisa.it

**Michelangelo Vasta** (Prof.), Department of Economics and Statistics, University of Siena, Piazza San Francesco 7, I-53100 Siena, E-Mail: vasta@unisi.it

Abstract: In this essay, we trace the evolution of four different patent laws in Sweden; from the first Swedish law of privilegia exclusiva in 1819 to the country becoming only the third country in the world to introduce novelty searches into the law of 1884. We discuss the ensuing contemporary public debates surrounding new proposals for legislation, as well as discernible effects of new patent laws. From being mainly a question about the “tyranny of monopolies” in the early laws to being one of “life and death for Swedish industry” in the subsequent laws, we show how changes in patent legislation resulted in three different types of innovation; technological, market and organizational. The results show that although the early laws implied severe litigation problems and considerably shorter patent terms, an early market for technology emerged as legislation had clearly established that intellectual property could be sold, bought and inherited. Concurrently the law of 1856 created a market for patenting services and patent agencies by requiring the use of Swedish agents by foreign patentees. Finally, foreign patenting increased as restrictions on patentees being non-Swedish citizens were gradually phased out.

JEL Codes: O 34, O 38, O 31, O 14, O 43

Keywords: patent laws, innovation, markets for technology, patent agencies, Sweden, Patentgesetze, Innovation, Märkte für Technologie, Patentagenten, Schweden

David E. Andersson
is a post-doctoral researcher at the Department of Business Studies at Uppsala University and an assistant professor at the Department of Management and Engineering at Linköping University. His research focuses on markets for technology, the economics and history of innovation, patent systems, economic performance and economic growth. He was visiting researcher at Universidad Autónoma de Madrid and Universidade de São Paulo.

Fredrik Tell
is Professor and Chair of Business Studies at Uppsala University. His research covers management, economics and the history of innovation, with a special interest in knowledge integration and organizational capabilities. He previously has held permanent and visiting positions at Linköping University, London School of Economics, Stanford University, University of New South Wales, and University of Sussex.

David E. Andersson (Dr.), Uppsala University, Department of Business Studies, Box 513, S-751 20 Uppsala, E-Mail: david.andersson@fek.uu.se

Fredrik Tell (Prof. Dr.), Uppsala University, Department of Business Studies, Box 513, S-751 20 Uppsala, E-Mail: fredrik.tell@fek.uu.se


Abstract: During the 1870s and 80s many countries revised their national patent laws. This was also a period when international co-operation was intensified to reach an agreement on patent legislation. It culminated in the Paris Patent Convention of 1880, leading to an increased harmonization of the various national patent laws. In Norway the revision of the patent law was set in motion in the 1870s, culminating in a new law in 1885. The paper analyses this process, and in particular how it related to legislative work that went on abroad.

JEL-Codes: K 49, N 63, O 25, O 30, O 31, O 38

Keywords: Patent history, patent legislation, patent convention, international cooperation, the Second Industrial Revolution, Patentgesetzgebung, Patentkonvention, internationale Kooperation, Zweite Industrielle Revolution
Bjørn L. Basberg (b. 1952) is a Professor in Economic History at the Norwegian School of Economics. His main research interests are within the history of technology and economic history relating to 20th century maritime industries (whaling and shipping). His doctoral thesis (1984), submitted to the Norwegian School of Economics, was about patents and technological development in Norway, 1840-1980. He has published papers on the history of patents, whaling history, maritime history and industrial history among others in the journals: Scandinavian Economic History Review, Research Policy, International Journal of Maritime History, Polar Record and Business History.

Bjørn L. Basberg (Prof. Dr.), Norwegian School of Economics, NHH, Helleveien 30, N-5045 Bergen, E-Mail: bjorn.basberg@nhh.no

Peter Scott and Anna Spadavecchia: Fundamental Patents, National Intellectual Property Regimes, and the Development of New Industries in Britain and America during the Second Industrial Revolution

Abstract: Several “new” industries of the second industrial revolution were characterised by one, or few, “fundamental” patents, without which manufacture of a viable product was not practicable. The degree of monopoly control that such patents conveyed was mediated by national socio-legal regimes, encompassing both patent law and its interpretation and enforcement. Using four case studies (two for the UK – a low anti-trust environment, and two for the USA – a high anti-trust environment) we show that fundamental patents were major determinants of monopoly power, industry structure, barriers to competition, and consumer prices. Impacts could extend beyond the life of the patents, owing to first mover advantages and path-dependent processes. Meanwhile national socio-legal environments, the nature of the fundamental patents, the strategies of the patent owners, and the nature of the specific product technology could have important (and sometimes unforeseen) consequences.

JEL-Codes: N 70, 0 31, 0 32, 0 33, 0 34, 0 38

Keywords: fundamental patents, barriers to competition, anti-trust, intellectual property, patent regulation, grundlegende Patente, Wettbewerbsbarrieren, Wettbewerbspolitik, geistiges Eigentum, Patentgesetzgebung

is Professor of International Business History at the University of Reading’s Henley Business School. His research encompasses industrial evolution; path dependence; consumption; and consumer goods. His most recent (2017) Oxford University Press monograph, The Market Makers. Creating Mass Markets for Consumer Durables in Inter-War Britain, explores the factors influencing the early development of Britain’s consumer durables’ sectors, including the role of patents.

Anna Spadavecchia

is Associate Professor at the University of Reading’s Henley Business School. Her research encompasses the development of clusters in the 20th century; regional innovation in Britain; innovation and the Italian economic performance in the long run. Her publications include book chapters for Oxford University Press and Boydell Press as well as articles in Business History, The Economic History Review, Enterprise and Society and Oxford Economic Papers.

Peter Scott (Prof. Dr.), Henley Business School at the University of Reading, Whiteknights, Reading, UK RG6 6UD, E-Mail: p.m.scott@henley.ac.uk

Anna Spadavecchia (Dr.), Henley Business School at the University of Reading, Whiteknights, Reading, UK RG6 6UD, E-Mail: a.spadavecchia@henley.ac.uk
Forschungs- und Literaturberichte

Ulrich Pfister: The Inequality of Pay in Pre-modern Germany, Late 15th Century to 1889

Abstract: The study explores relative labour scarcity in a broad range of activities and relates it to the long-run dynamics of structural change, supply and demand of human capital, and the inequality between men and women. It builds on two recent compilations of wage data and complements these with additional information, particularly on wages in agriculture. From the second quarter of the seventeenth century the skill premium was stable; the first phase of industrialization did not lead to a differentiation of the individual return to human capital. Labour demand from the modern sector stabilized real wages of males from the second quarter of the eighteenth century at least and increased them from the mid-1850s onwards. This opened a wedge between the agricultural and the non-agricultural sectors already for considerable time before the beginnings of industrialization. Finally, the modern era saw two phases of labour market segmentation along gender lines, one in the later sixteenth and the early seventeenth centuries, the other from the 1840s to the 1870s.

JEL-Codes: J 22, J 23, J 24, J 31, N 13, N 33

Keywords: labour markets, standard of living, structural change, gender inequality, Arbeitsmärkte, Lebensstandard, Strukturwandel, Geschlechterungleichheit


Ulrich Pfister (Prof. Dr.), Universität Münster, Historisches Seminar, Domplatz 20–22, D-48143 Münster, E-Mail: pfister@uni-muenster.de

Mark Schiefer: Ideologiepolizei und Auftragsverwaltung. Über die Ursachen der Expansion der Staatssicherheit in der Planwirtschaft am Beispiel der DDR-Chemieindustrie

Abstract: The Stasi, the secret police in the GDR, was an integral part of the planned economy. Over time, Stasi officers took on tasks related to economic planning and adopted the mentality and behaviour typical of the field. This paper takes a closer look at their aims and the ensuing consequences as illustrated by the GDR chemical industry. It focuses on a contradictory phenomenon: the co-existence of growth and inefficiency. Although the secret police enjoyed growing responsibilities, resources and partners, they were surprisingly inept at achieving their own economic and security targets. This phenomenon can be explained in two ways: Historically, by identifying the Stasi as the profiteer of economic crisis, or in terms of organization theory, by revealing some typical bureaucratic characteristics of the secret service (MfS).
JEL-Codes: P 2, P 27, P 21, P 31

Keywords: Stasi, Ministry for State Security, Secret Police, surveillance of the economic sphere, East Germany, petrochemical industry, buna plant, socialist economy, economic crisis, compensation, distributor, foreign trade, bureaucracy, organization theory, Principal-agent-theory, Niskanen, Staatssicherheit, MfS, Wirtschaftsüberwachung, DDR, Chemieindustrie, Buna-Werke, Planwirtschaft, Wirtschaftskrise, Kompensationsprojekte, Vertretergesellschaft, Außenhandel, Bürokratie, Organisationstheorie, Prinzipal-Agenten-Theorie, Niskanen


Mark Schiefer (Dr.), Anton-Saefkow-Straße 54, D-10407 Berlin, E-Mail: mark.schiefer@bstu.bund.de