

# THE DEVELOPMENT OF STATISTICS IN THE FIRST DECADE OF CZECHOSLOVAK REPUBLIC

Prokop Závodský – Ondřej Šimpach

---

## Abstract

The establishment of Czechoslovakia meant stormy development of statistics from the year 1919. Already in January 1919 was founded the State Statistical Office (SSO), that replaced three small provincial statistical offices with very limited powers. SSO had to in the short time handle all important fields of statistics, so-far centred in Vienna. Since 1920 it also published the first statistical journal at us “Čs. statistický věstník” and numerous other publications. In addition to the existing German and Czech universities statistics started to be taught also on newly established universities and faculties (Faculty of Natural Science of Charles University, University of Special Sciences and the University of Commerce at the Czech Technical University in Prague, Masaryk University in Brno, etc.). Non-existing Czech textbooks of modern statistical methods were firstly supplemented by the papers in above mentioned journal. Only in year 1926 there was published a translated version of famous textbook of G. U. Yule “Introduction to the Theory of Statistics”, which meant a significant contribution to the creation of Czech statistical terminology. A special chapter was the work of statisticians among Russian and Ukrainian emigrants in Czechoslovakia.

**Key words:** history of statistics, State Statistical Office, Stanislav Kohn

**JEL Code:** B16, B23, N33

---

## Introduction

The history of statistics at our land is not sufficiently elaborated unlike other scientific disciplines. Authors of this contribution are trying continuously contributing to the improvement of this state of art by set of papers about the development of statistics in XIX. and XX. centuries - e.g. Závodský (1992), Závodský and Šimpach (2014, 2015), Kodera, Závodský and Šimpach (2015) etc.

After the foundation of the Czechoslovak Republic, statistics underwent a significant development in a new state. The State Statistical Office became a new centre of statistical services and sciences. Shortly after the foundation of the Republic were founded new

universities and extended the activities of already existing which meant the need of highly qualified statisticians. Ministries and other central offices of the new state have obviously shown interest in other statistical experts. State Statistical Office shown from the beginning an effort to be at the forefront of progress in Europe, and statistics and its modern methods were perceived as progressive instruments for state management.

## **1 State statistical service in Czechoslovakia**

State statistics of the monarchy were concentrated in the time of Austria-Hungary in Vienna and Budapest. Statistical service in the Austrian part of the monarchy was managed by the Central Statistical Committee (K. k. Statistische Zentralkommission). However, administrative statistics concerned also many ministries, that founded own statistical bureaus and offices. This was mainly the Ministry of Commerce, whose statistical service was mainly responsible for statistics of foreign trade, statistics of trade with the Hungarian part of the monarchy, statistics of industry and transport.

Individual state administrations organized statistical surveys on their territory in fields that fell within their very limited competencies. It was particularly agriculture and forestry and activities of various institutions financed from land means. Only in year 1897 was founded and in the next year started his activities Land Statistical Office of Czech Kingdom<sup>1</sup>. Statistical Land Office of Margrave of Moravia was founded in year 1899<sup>2</sup>. Land Statistical Office for Silesia was founded in year 1898. It was an individual part of Land Office in Opava only since year 1907.

Thanks to the “father of Czechoslovakian statistics”, the head of Land Statistical Office in Prague, Dobroslav Krejčí (1869–1936), and professor of national economy at Czech Technique in Brno, Karel Engliš (1881–1961), the Revolutionary Parliament of the new state has already agreed a law on state statistics in Czechoslovakia already on 28<sup>th</sup> January 1919. This law established State Statistical Council (SSC) as authority deciding about main problems of statistical services and State Statistical Office (SSO) as an executive authority. Unlike during monarchy times all statistical activity was practically concentrated in SSO. Physical and legal persons were obliged to provide to SSO needed data in the framework of surveys decided by SSC. SSO did not have any regional branches. Land Statistical Office in Prague became the

---

<sup>1</sup> For details see Závodský and Šimpach (2016).

<sup>2</sup> Sometimes stated year 1893 is an error year.

foundation for building of SSO, Land Statistical Office in Brno disappeared during the war. The miniature office in Opava was cancelled in year 1925.

Building of SSO was done often in tedious conditions during years 1919–1921. The Brief Law on State Statistics had to be supplemented by government regulations, which was dragging. The state of employees of SSO increased quickly from some tenths on 804 at the end of year 1921<sup>3</sup>. After the emergence of an independent state, there was a huge lack of buildings for the location of ministries and other central offices, foreign representations, new universities, etc. The building of Deaf Institute in today's Holečkova Street in Smíchov was given to SSO on November in year 1919. However, it did not suit well and was gradually abandoned.

**Fig. 1 – Object of State Statistical Office on former postcard**



Source: archive of authors

Let's name at least some the most famous scientific employees of SSO from first decades of their activities. The first head of SSO, Dobroslav Krejčí, resigned first on its function. His successor became se in February 1920 František Weyr (1879–1951), professor of constitutional law at University in Brno, who did not lack the experience from the Land Statistical Office in Prague and from the Vienna Central Statistical Commission. Due to Weyr's

---

<sup>3</sup> The number of employees has been gradually decreasing in the following years. See Podzimek (1979), p. 38.

frequent absence, Jan Auerhan (1880–1942) played a significant role in the management of the SSO as vice-chairman. He was active in land statistics in Prague already in year 1906. The 3<sup>rd</sup> department of SSO concerned with economic statistics was managed by Josef Mráz (1882–1934). Economic statistics and its fields were still concentrated in Vienna and there was no experience here with it. Statistics of foreign trade was on SSO from the beginning organized by Bohumír Hanosek (1883–1942) and after his leave Josef Ryba (1880–1960). He shall be mentioned also as the founder of Czechoslovakian statistics. He constructed the first retail and then wholesale price indices in the years 1920–1922.

He gradually developed the system of periodical and other publications. From the source works a brief Statistical Guide of the Czechoslovak Republic (*Statistická příručka Republiky Československé*) was published firstly already in year 1920 and the next in year 1925. Let us mention also at least the edition of source books *Československá statistika* that had been published since year 1922. *Československý Statistický Bulletin* (predecessor of today's *Statistika – Statistics and Economy Journal*) was the first scientific statistical journal on our territory. It started to be published by SSO since year 1920<sup>4</sup>.

SSO had half-scientific character during the First Republic era (conceptual officials were explicitly assumed to have own publishing activities). It was the main centre of the development of statistical science in Czechoslovakia and publisher of the most important scientific works and books in the area.

## 2 Statistics at universities

The development of statistics at universities has expanded considerably after the establishment of Czechoslovakia. At Law Faculty of the Charles University the statistics was taught together with national economy by Vilibald Mildschuh (1878–1939)<sup>5</sup>. He was an employee of Land Statistical Office in Prague between years 1904–1917. At Law Faculty of German University was the representative of the statistic branch Heinrich Rauchberg (1860–1938), who was known for his controversial demographic work *Der nationale Besitzstand in Böhmen* (1905). Dobroslav Krejčí came after his resignation on the function of chairman of SSO to the Law Faculty of Masaryk University in Brno. He taught here statistics until his death in year 1936.

It was possible to study the statistical methods at the Prague Technical University (reorganized in year 1920 on the Czech Technical University - CTU) already since year 1904.

---

<sup>4</sup> See Závodský (2005), p. 261.

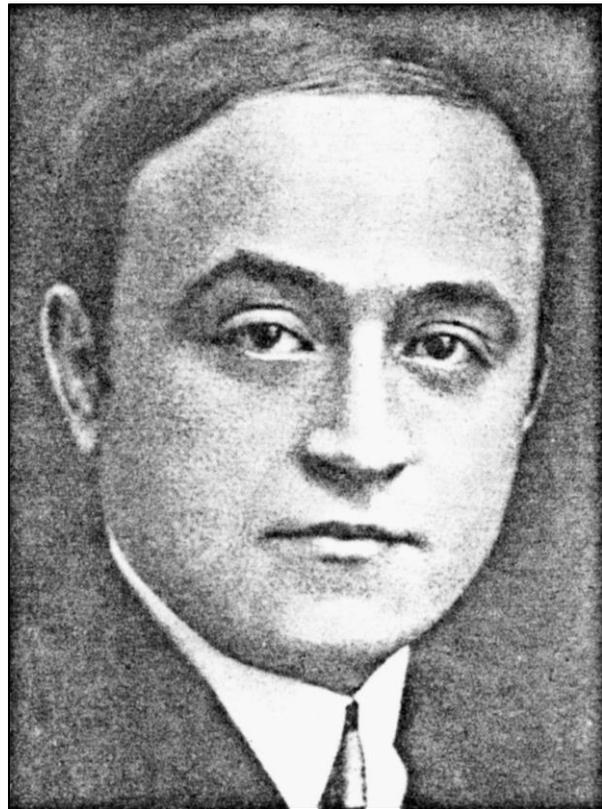
<sup>5</sup> See Havránek and Pousta (1998).

However, only as two-year study of insurance technics. This study was implemented on University of Special Sciences (USS, linked to CTU<sup>6</sup>) since year 1921. Josef Beneš (1859–1927), renowned theoretician and practitioner in actuarial and mathematical statistics, was a long-term representative of this course. Jaroslav Janko (1893–1965) became his dignified successor. Jan Stocký (1897–1959) participated in the national economy teaching at USS for the whole 1920s. He habilitated based on his work about the applications of the mathematics in national economy<sup>7</sup>. Two-year study of insurance technics was done since year 1906 also at German technics in Prague. Study program was similar as on Czech Technique. Insurance mathematics and mathematical statistics have been lectured here for almost three decades by Gustav Rosmanith (1865–1954). On German Technique in Brno was similar two-year course open since study year 1908/1909 always once in two years. The chair of insurance mathematics and mathematical statistics had never been established.

**Fig. 2 – Jaroslav Janko**



**Fig 3 – Jan Stocký**



Source: archive of authors

---

<sup>6</sup> See Závodský (2013), p. 368.

<sup>7</sup> Stocký, J. (1927). *Role matematiky v badání národohospodářském: Úvod do početních stránek národního hospodářství*. Praha 1927.

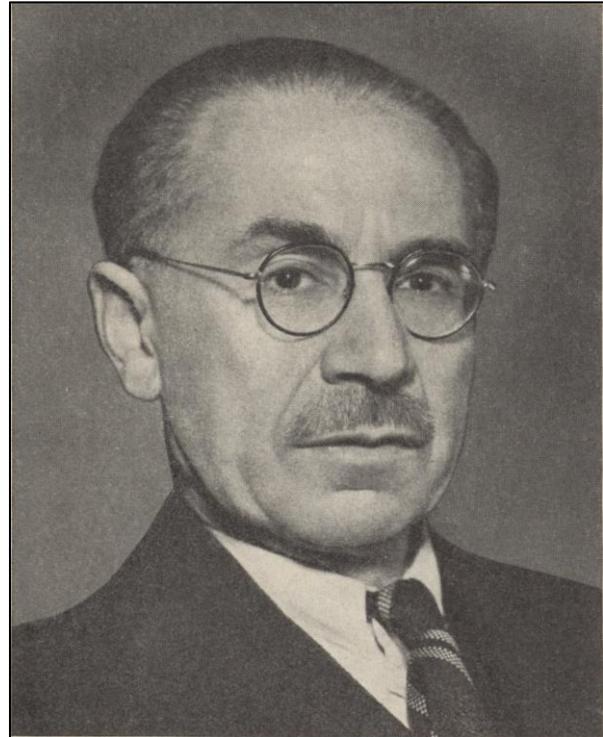
Two-year study established at Faculty of Science of Charles University in year 1921 had similar content and objectives. Its name was “A cycle of alternating lectures on actuarial and statistics”. Professor Emil Schoenbaum (1882–1967) was a representative of this branch since 1920s. He was internationally acknowledged expert in insurance theory, practice and legal issues.

**Fig. 4 – Gustav Rosmanith<sup>8</sup>**



Source: archive of authors

**Fig 5 – Emil Schoenbaum**



Bohuslav Hostinský (1884–1951) devoted himself to statistics along with the theory of probability at the Faculty of Science of Masaryk University in Brno. His works about Markov’s chains are particularly important.

In the same year as Masaryk University (1919) also College of Business started its activities. It joined an older two-year study program at Czech Technique in Prague so in autumn 1919, so it could open the first two years. Statistics was taught here shortly by professor Jan

---

<sup>8</sup> Photo was reproduced from publication, that was devoted to professor Janko.

Koloušek (1859–1921) known of his phenomenal memory on statistical data. After his death, it was taught for some time by famous macro-economists František X. Hodáč (1883–1942). Since study year 1922/1923 the teaching was overtaken by one of our the most important statisticians, doc. Josef Mráz (1882–1934). He was long-term worker of Land Statistical Office and State Statistical Office. Mráz's lectures contained both, statistical theory, and economics statistics, including the basics of demographic and social statistics. Statistics was examined in the framework of national economy during the second stat exam.

### 3 First study book of statistical methods

Modern study book of statistical methods was missing at our territory at the beginning of 1920s. There was not also any Czech scientific terminology. There were only minor contributions in *Selected chapters from mathematical statistics* from polyhistorian in the area of natural sciences, Václav Láska (1862–1943)<sup>9</sup> and comprehensive paper about book of Armand Julin from Josef Mráz<sup>10</sup>. Handbooks of Dobroslav Krejčí were aimed particularly on popularization of statistics and organization of data collection.

Translation into Czech of the extensive work of a representative of the English biometric school George Udna Yule *Introduction to Statistics* (Prague 1926) was a great progress. The translators were: professor of physics on Czech Technique in Brno Vladimír Novák (1869–1944) and Josef Mráz. The translation was initiated and issued for own expenses by SSO. Named scientists contributed by the translation of this extensive book (over 500 pages) to the creation of Czech statistical terminology, mainly used until nowadays.

First original Czech written book of statistical methods was issued also thanks to SSO three years later. It was *The Basics of theory of statistical methods (Základy teorie statistické metody)* (Praha 1929) by Stanislav Kohn. They have almost the same scope as the works of Yule, but are more modern, capture better the newest development of statistics in the world, and contain wider set of statistical methods.

Stanislav Kohn<sup>11</sup> was born in year 1888 in Jude family in Warsaw that belonged at that time to Tsarist Russia. He studied in v Saint Petersburg. Consequently, he gave lectures in (today's Tbilisi). After the start of Bolshevik regime, he left to exile and in year 1923 he settled in Prague, that became thanks to support of government and president Masaryk himself a centre

---

<sup>9</sup> *Československý Statistický Bulletin*, vol. II (1921), pp. 225-258 a 313-342 and also individual publication. It contains only some statistical problems and is unintelligible to readers without mathematical education.

<sup>10</sup> Julin's "Basics of theoretical and practical statistics". *Československý Statistický Bulletin*, vol. III (1922) pp. 284-316.

<sup>11</sup> See Mráz (1933).

of educated Russian and Ukraine people in exile at that time. For example, famous statistician A. A. Čuprov (1874–1926) worked here as same as economist and statistician S. N. Prokopovič (1871–1955) with his important National Economy Institute, economist a historian P. B. Struve (1870–1944), and Čuprov, long-term friend of Kohn. Kohn, beside other, lectured statistics on Russian Law Faculty in Prague and worked for National Economy Institute for Prokopovič.

**Fig. 6 – Stanislav Kohn**



**Fig 7 – Vilibald Mildschuh**



Source: archive of authors

Let's return to Kohn's above mention text book. Its title comes from the reality that Čuprov and his pupils declared statistics as special methodological science – theory of statistical method<sup>12</sup>. The first part of the book is devoted to descriptive statistics where the author implemented also the theory of indices. Second, significantly wider part, is about the probability theory and regression analysis (including the examination of the dependence between qualitative characters), and also about time series analyses. Completely new chapter is for example the paper about time series where Kohn uses the newest works of Harvard school, but

---

<sup>12</sup> See foreword to Kohn (1929), p. V.

also its critics and assess beside other also the issue of time series correlation, lag correlations etc. It is the first systematic interpretation of this issues in Czech literature. In particular, in these original chapters, Kohn's textbooks contributed to the development of Czech statistical terminology. However, J. Mráz, E. Schoenbaum and other specialists who helped Kohn with the preparation of the Czech text have also contribution on this<sup>13</sup>.

Despite that Kohn's text book was published in Czech and not in some foreign language, it raised a significant attention abroad etc. A professor from Berlin and otherwise dreaded critic Ladislaus von Bortkiewicz (1868–1931) expressed his admire on the amount of assessed issues<sup>14</sup> and recommended to translate the work to German. The text book was positively valuated by professors G. U. Yule, O. Anderson, O. Lange etc. Negotiations on the German and Polish issues were eventually unsuccessful, mainly for Kohn's worsening health condition and later death. Kohn died in less than 45 years in 1933 and is buried in the New Jewish Cemetery in Prague, near the grave of Franz Kafka.

#### **4 Czechoslovakian Statistical Society**

Already since the beginning of 1920s there were stated the proposals for the establishment of a statistical society, which at that time existed in a number of developed countries. Initially, these suggestions failed. The statistical community was still small in our country and virtually all reputable statisticians met regularly in the State Statistical Council (SSC) since 1920 – in plenum and its different committees.

As we showed above, during 1920s the number of statistical specialists significantly increased. The main initiator of establishment of the Statistical Society was František Weyr, that was going to end up his almost 10-year management of SSO. He argued to his opponents, that pointed out on the existence of SSC, that SSC has official character and its members also work here mainly as the deputies of the institutions, that delegated them. Contrary to that the Statistical Society will bring together the most important statisticians working in different fields, enabling them to exchange experience and support scientific activity in statistics<sup>15</sup>.

Preparation committee with 10 members met on 28<sup>th</sup> November 1928, decided about the foundation of the Society, and discussed the draft of statutes. Preparation committee organized constituent meeting of the Czechoslovak Statistical Society on 30<sup>th</sup> January 1929. As a chairman was elected Vilibald Mildschuh, a professor of statistics and national economy on

---

<sup>13</sup> See also Závodský (2012).

<sup>14</sup> Despite his tremendous erudition, he did not decide to write a comprehensive work on statistics.

<sup>15</sup> See also Závodský (2010), pp. 3-4.

Law Faculty of Charles University. Society became by words of its status an academic institution with limited number of members. At the constituent meeting, 30 regular members and 22 members were also elected. The youngest regular member, doc. Jaroslav Janko, was elected the Society's Managing Director.

The first General Assembly of the Society met on 26<sup>th</sup> April 1929, and others followed at annual intervals. At the General Assemblies and at other meetings (most often held six times a year), the participants listened to the planned lectures, followed by discussions that often continued at the next meetings. Text of the lectures and discussion contributions was regularly published in *Československý Statistický Bulletin*. The Society's activity was largely subsidized by SSO, membership fees had not been paid. Czechoslovakian Statistical Society successfully developed its activities over 10 years, until the end of Czechoslovakia at the spring of 1939.

## Conclusion

We briefly describe in our contribution the initial development of statistics in new Czechoslovakian republic in the first decade that enabled consequent development and modernization in 30s years. Due to short scope, our contribution cannot be exhaustive. We had to for example make shorter the section about the activities of emigrants from Soviet Russia on the field of statistics. For briefness, we were forced to limit also the notes, at particular persons we also often omitted their scientific titles and data of their gaining despite that it is a common custom of the science history. When selecting the illustration, we often gave priority to less known persons rather than to statisticians which photos are relatively known.

## Acknowledgment

Supported by the Internal Grant of the University of Economics Prague no. 39/2017 "Initial development of activities of the State Statistical Office".

## References

- HAVRÁNEK, J., POUŠTA, Z. (eds.) (1998). *Dějiny Univerzity Karlovy IV. 1918–1990*. Praha, Univerzita Karlova, vydavatelství Karolinum. ISBN 80-7184-539-6.
- KODERA, J., ZÁVODSKÝ, P., ŠIMPACH, O. (2015). Jan Stocký, Southern Bohemia and Mathematical Methods in Economics. In: *HRONOVÁ, S., VLTAVSKÁ, K. (ed.): Applications of Mathematics and Statistics in Economics – AMSE 2015*. Prague: University of Economics, Prague, Oeconomica Publishing House, 11 p. ISBN 978-80-245-2099-5.

KOHN, S. (1929). *Základy teorie statistické metody*. Praha 1929.

MRÁZ, J. (1933). + Doc. Stanislav Kohn (Posmrtné vzpomínky). *Čs. statistický obzor*, vol. no. XIV, pp. 162–167.

PODZIMEK, J. (1979). *Vývoj československé statistiky 1919–1945 v událostech a datech*. Praha 1979.

ZÁVODSKÝ, P. (2005). 85 let od vzniku státní statistické služby na území České republiky. *Statistika*, vol. 42, no. 3, pp. 254–262.

ZÁVODSKÝ, P. (2010). Meziválečná Československá statistická společnost. *Informační Bulletin České statistické společnosti*, vol. 22, no. 4, pp. 3–8.

ZÁVODSKÝ, P. (2012). První původní česká učebnice statistických method a její autor – Stanislav Kohn. *Informační Bulletin České Statistické Společnosti*, vol. 23, no. 4, pp. 93–100.

ZÁVODSKÝ, P. (2013). 60 let statistiky na Vysoké škole ekonomické v Praze. *Politická ekonomie*, vol. 61, no. 4, pp. 367–387.

ZÁVODSKÝ, P., ŠIMPACH, O. (2014). J. N. Müllner and the Beginnings of Demographic Statistics in the Czech Lands. In: *The 8th International Days of Statistics and Economics*. Slaný: Melandrium, pp. 1687–1695.

ZÁVODSKÝ, P., ŠIMPACH, O. (2015). Statistical and Topographical Description of the Czech Lands in the 18th and 19th Century. In: *The 9th International Days of Statistics and Economics*. Slaný: Melandrium, pp. 1804–1813.

ZÁVODSKÝ, P., ŠIMPACH, O. (2016). The Development of Provincial Statistical Office in Bohemia in Historical Context. In: *The 10th International Days of Statistics and Economics*. Slaný: Melandrium, pp. 2096–2106.

## Contact

Prokop Závodský

University of Economics Prague, Faculty of Informatics and Statistics

W. Churchill sq. 4, 130 67 Prague 3, Czech Republic

prokop.zavodsky@vse.cz

Ondřej Šimpach

University of Economics Prague, Faculty of Informatics and Statistics

W. Churchill sq. 4, 130 67 Prague 3, Czech Republic

ondrej.simpach@vse.cz