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Inflation, Money, Output.

Economic and financial data underpinning analysis and policy making

eabh (The European Association for Banking and Financial History e.V.)

Contents

Introduction 4
Jakub Kunert

Chapter 1 6
František Chudják
Andrea Leková
Origins of Slovak economic statistics: establishment and operation of the Economic Cycle Research Department of the Slovak National Bank.

Chapter 2 15
Daniel Wirt
Luncheon, tea and statistics. The development of 'low-key' cooperation at the Bank for International Settlements.

Chapter 3 25
José L. García-Ruiz
The rise and decline of research departments in the Spanish financial institutions, 1930-2015.

Chapter 4 42
Katrina Stierholz
Fraser: economic data and information preservation project at the Federal Reserve Bank of St. Louis

Chapter 5 49
Brindusa Costache
Kalina Dimitrova
Sophia Lazaretou
South-Eastern European monetary and economic statistics from the 19th century to World War II: a first look at the new historic database. What do we learn?

Chapter 6 71
Kim Abildgren
Experiences from ten years of research on Danish historical monetary and macro-economic statistics

Concluding remarks 81
Aurel Schubert

Biographies 84
Contributors and editors

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Introduction

Jakub Kunert[1]

The contributions collected in this publication are the outcome of a workshop organised by *eabh*, and hosted by the Czech National Bank in Prague on 14 May 2015. This workshop's title was 'Inflation. Money, Output. Economic and financial data underpinning analysis and policy making.' The main topics of discussion were historical statistics, charts and the analysis connected with them.

When preparing the workshop, two quotations immediately came to mind. Their authors were two famous, in the first case rather more infamous, men – one a politician and the other an economist. Both influenced with their actions and ideas not only the past but also the present.

The first one was the infamous Joseph Vissarionovich Stalin (1878-1953), who, even though his authorship is sometimes disputed, supposedly said: 'A single death is a tragedy; a million deaths is a statistic.'

The second one is Joseph Alois Schumpeter (1883-1950), born in the Czech lands, which were at that time a part of the Austro-Hungarian Empire. He wrote in his History of Economic Analysis: 'What distinguishes the scientific economist from all the other people who think, talk, and write about economic topics is a command of techniques that we class under three heads: history, statistics and theory. The three together make up what we shall call Economic Analysis.'

> **"A single death is a tragedy; a million deaths is a statistic."**
>
> Joseph Vissarionovich Stalin

When working on my paper about the deflation in Czechoslovakia during the 1930s, I came to the conclusion that both quotations are more than right. As for the first one, we are sometimes prone to consider statistics as something that is given, and we do not feel that behind these data are people and events that have profoundly affected those people's lives. The statistics are constructed in such a way that they summarize and even blend out single occurrences and realities, so that in the end we can see only the generalized facts.

1 Czech National Bank

As for Joseph Alois Schumpeter's quotation we can see that he considered the knowledge of history, statistics and theory as the most important skills any serious economist should possess. When I omit the theory, I am sure that our archives have a lot to say on this. History and statistics are exactly the topics that are at the core of this publication.

Our archives can contribute a lot to understanding the history of statistics. They show that the generated numbers are not without problems – some records make it clear that the data we tend to take for granted can often be disputed because of the way in which they were collected and assessed. Quoting Joseph Schumpeter again: 'It is impossible to understand statistical figures without understanding how they have been compiled. It is equally impossible to extract information from them or to understand the information that specialists extract for the rest of us without understanding the methods by which this is done - and the epistemological backgrounds of these methods.'

Let me give just two examples drawn from my own research. The minutes of the Bank Board of the National Bank of Czechoslovakia reveal that during the 1920s the indices of the cost of living of a clerk's family and worker's family in Prague were constructed from data based mostly (for up to 80%) on budget data of families of employees of the State statistical office. A perhaps understandable, but nonetheless somewhat peculiar bias. Similarly, the members of the Bank Board of the National Bank of Czechoslovakia regularly complained during the interwar period that discussions with representatives of other states and central banks in the different committees of the League of Nations were frustrating and sometimes pointless, because the statistics that underpinned these discussions were so different between countries and organizations, and nobody really knew how to compare them.

Opening the archival boxes containing the records with unpublished statistics and analysis concerning statistics can enlarge our historical knowledge, and new research can lead to new insights that may profoundly change what was previously taken for granted.

The papers collected in this volume reflect on these issues from different perspectives. They deal with both the origins of data collections, and with the often novel ways in which these data collections are, or can be, used. They offer us a unique opportunity to compare our own experience with that of our colleagues.

Chapter 1

Origins of Slovak economic statistics: establishment and operation of the Economic Cycle Research Department of the Slovak National Bank.

František Chudják
Andrea Leková

Introduction

In the first half of the 20th century, various institutes studying economic growth, the business cycle and related issues were established in the United States and Europe. Some operated as independent entities while others were incorporated within a variety of different institutions such as statistical offices, central banks or universities.[2] This study presents a brief overview of the development and activities of one such research institute in Slovakia during the hectic years of the Second World War.

The first section of our contribution concentrates on the institutional development of this institute, which began as the Study Department of the Slovak National Bank (SNB). In 1940, the Economic Cycle Research Department was established within the SNB. This department's function was to observe and study economic movements and to prepare reports that could be used to improve regulation and provide support for economic development. For these purposes the SNB requested data from different companies related to their area of economic activity. The second section of our contribution focuses on the cooperation between the SNB Economic Cycle Research Department and similarly oriented foreign institutions, in particular the Institute for Business Cycle Research in Berlin and the Hungarian Institute for Economic Research. We highlight Imrich Karvaš's efforts to promote independent business cycle research and its further developments in Slovakia, which resulted in the Economic Cycle Research Department being spun off from the SNB in 1944 as the independent Institute for Economic Research.

Particular attention is paid to the publications issued by the SNB Economic Cycle Research Department and the successor Institute for Economic Research. These are made up primarily of regular economic reports, reports on prices and wages, as well as various analyses of national income or economic, foreign-exchange and export capacities of Slovakia. They give basic data on price and wage indices or an inception of an inflationary spiral. We briefly touch upon the intentional manipulation of the statistical data that the department supplied to its German partners. In this context we also tell the dramatic

Building of the Slovak National Bank, built between 1937 & 1938. Designed by renowned Slovak architect Emil Belluš.

2 For developments in Germany, a model country for Slovakia, see KULLA, Bernd. Die Anfänge der empirischen Konjunkturforschung in Deutschland 1925-1933. In Volkswirtschaftliche Schriften, Heft 464, Berlin: Duncker & Humblot, 1996, pp. 1-35 or Institut für Weltwirtschaft an der Universität Kiel 1914-1964. Kiel: Schmidt & Klaunig, 1964, pp. 1-66.

stories of the SNB Governor Imrich Karvaš and the Economic Cycle Research Department Director Vojtech Krajčovič.

Finally, we mention documents produced by the SNB Economic Cycle Research Department and the Institute for Economic Research that are of considerable importance for learning about economic developments in Slovakia between 1939 and 1947.

I

The year 1939 saw profound geopolitical changes in Central Europe, which had a serious impact on Czechoslovakia as well. On 14 March 1939, the Slovak Republic was declared to exist under the protection of the German Reich and on the following day Bohemia and Moravia were transformed into a German Protectorate. Since all the former Czechoslovak central government bodies had been seated in Prague, the new situation in Slovakia urgently required the creation of new, Slovak state authorities. The Slovak National Bank was established on 4 April 1939 under the governorship of Imrich Karvaš, a renowned expert respected in Europe, who put great emphasis on the development of specialised economic research. For this purpose a Study Department was created in the Slovak National Bank upon its establishment. The organisation and orientation of this department was inspired by the study department of the former National Bank of Czechoslovakia. In September 1940 this department was renamed the National Economy Department and reported directly to the governor. From its inception, the Study Department started to supply the SNB and other central government bodies with monthly economic reports and various analyses of national income, the country's economic, foreign-exchange and export capacities, or tax burden that fell on the people. The preparation of these reports and analyses was particularly difficult at the beginning since there

Imrich Karvaš

were no statistical data available. Moreover, due to the annexation of the fertile southern Slovakian lowlands to Hungary, dramatic changes had also occurred in the economic sectors of transport, agriculture and industry. Therefore, in its calculations and projections the Study Department had to rely on data from older publications by various authors, for example by Hugo Meszáros,[3] or on estimates by the Agriculture Council for Slovakia or the Central Association of Slovak Industry. Unlike several members of the Slovak Government, the department considered as most reliable the data and calculations of the former Czechoslovak State Statistical Office.[4]

The economic reports issued from August 1939 by the SNB Study Department were a continuation of the monthly reports published by the former National Bank of Czechoslovakia. However, the new reports were only intended for the SNB Bank Board members, members of the

3 MESZÁROS, Hugo. Národný majetok Slovenska (National Property of Slovakia). Bratislava, 1936.

4 Archives of Národná banka Slovenska, fonds 'Slovak National Bank' (hereinafter the 'ANBS, f. SNB'), Výpočet národného dôchodku Slovenska (Calculation of the Slovak national income) of 19.12.1939, inventory no (hereinafter the 'Inv. No') 2125, series 1045

Government, representatives of central economic bureaus and German economic authorities. As Imrich Karvaš said: 'For the interests of the war economy, the Government adopted a decision in the first year of the war prohibiting any publication of statistical papers on the economy. At the same time, economic censorship was imposed which also monitored compliance with this prohibition. The Ministry of Economy was responsible for it. These were confidential measures that all countries introduced when they went to war.'[5]

An example of these prohibiting measures was a decree of the Ministry of Interior of 5 February 1940 which stated: 'All periodicals in the Slovak Republic shall suspend the publication of articles, essays or papers concerning price levels, a rise in prices of items necessary for life, shortages of ordinary food products, or which would directly or indirectly initiate or support any wage movements. Such articles, essays and papers may only be released after preliminary censorship and if they contain an approval clause of the Presidium of the Ministry of Economy in Bratislava.'[6] Eventually, all economic statistics were declared strictly confidential and secret by a resolution of the Government of the Slovak Republic of 17 August 1941.[7]

The management of the Slovak National Bank decided to create, at Karvaš's initiative and based on similar foreign institutions, an institute, which would monitor economic movements, and study and analyse them for the purposes of the regulation and optimal development of the economy. Thus, on 4 October 1940 an Economic Cycle Research Department[8] was established in the SNB in accordance with Government Regulation No 267/1940 Coll. Imrich Karvaš had already considered the idea of establishing a similar institute in the inter-war years. His first attempt in this area was the opening of the Institute for National Economy of Slovakia and Ruthenia in 1932. His initiative to create an institute for business cycle studies was inspired by the activities of the Institut für Konjunkturforschung established in Berlin in 1925 by Professor Ernst Wagemann.[9] After the Slovak Republic was declared in 1939 and Imrich Karvaš was appointed as governor of the SNB, the SNB Study Department worked quite closely with the Institut für Konjunkturforschung in Berlin. Professor Ernst Wagemann visited Slovakia in the spring of 1940 to carry out research near the town of Piešťany. During this trip he was accompanied by Governor Karvaš, met the highest representatives of the Slovak state and gave a lecture on Liberalism and the managed economy in the world economy[10] at the Slovak University on 9 May 1940. Karvaš's discussions with Wagemann prompted the implementation of the idea that the SNB's research into business cycles in Slovakia should be supported by law. The Study Department of the SNB had no legal power to require any entities to supply reports and other data. As a result, it was not unusual that 'economically active entities were not willing enough to make voluntary reports to the Slovak National Bank and supply it with the information it required.'[11]

The Economic Cycle Research Department gathered economic information and reports both from Slovakia and abroad, analysed them and made them available for scientific and practical use. The department was also responsible for producing reports and offering information and consultation services to

5 SCHVARC, Michal – HALLON, Ľudovít. Kauza Karvaš. Štúdie a dokumenty k zatknutiu, zavlečeniu a internácii guvernéra Slovenskej národnej banky na území Nemeckej ríše. (The Karvaš Case. Studies and documents about the arrest, displacement and internment of the governor of the Slovak National Bank in the German Reich.) Bratislava: Institute of History, Slovak Academy of Sciences, 2014, p. 134.

6 SCHVARC – HALLON, The Karvaš Case, p. 139.

7 ANBS, f. SNB, Korešpondencia guvernéra SNB Imricha Karvaša so Štátnym úradom štatistickým (Correspondence of the SNB Governor Imrich Karvaš with the State Statistical Office), 16.4.1942, Inv. No 2137, series 1058.

8 ANBS, f. SNB, Organizačný štatút odboru pre výskum konjunktúry z roku 1940 (Organisational Rules of the Economic Cycle Research Department, 1940), Inv. No 2115, series 1045.

9 KULLA, Bernd. Die Anfänge der empirischen Konjunkturforschung in Deutschland 1925–1933. In Volkswirtschaftliche Schriften, Heft 464, Berlin: Duncker & Humblot, 1996, ISBN 3-428-08693-7.

10 Weekly Slovák, year 22, 1940, No 109, 10.5.1940, p. 8.

11 Weekly Slovák, year 22, 1940, No 258, 30.10.1940, p. 8.

Vojtech Krajčovič

economic, political and scientific circles. For these purposes, the SNB was empowered to request information from economic entities on matters related to their industrial sector. As the name of the department suggests, its mission also included studying and analysing the progress of the business cycle. The department was led by Vojtech Krajčovič who first became its head. Later, on 1 July 1941, at the age of 27, he was appointed its director. Imrich Karvaš was keen to promote Krajčovič to this position because of his theoretical knowledge in the area of macroeconomics and good command of languages (he spoke English, German, French and Hungarian).[12] It is interesting that almost all employees of the department were graduates from Prague or Bratislava Universities who had spent longer or shorter periods studying in Berlin, Paris or London. They were hired purely on the basis of their specialist knowledge, without regard for their political and religious orientation. This was quite extraordinary in the then totalitarian regime. Many staff members of the department were strictly left oriented. Some participated in the communist movement (e.g. Ján Púll) and after the Second World War became prominent representatives of the newly installed communist regime.[13]

A consultation board was established alongside the Economic Cycle Research Department bringing together representatives of the Ministry of Finance, Ministry of Economy, the Agriculture Council for Slovakia, the Central Association of Slovak Industry, and chambers of commerce in Slovakia.[14]

The Economic Cycle Research Department cooperated with similar specialist institutions abroad. We have already mentioned the Institute for Business Cycle Research in Germany (in 1941 renamed to the German Institute for Economic Research – Deutsches Institut für Wirtschaftsforschung). The heads of the institutes, Vojtech Krajčovič and Ernst Wagemann, entered into extensive correspondence and exchanged their scientific findings.[15] Cooperation also developed very well with the Hungarian Institute for Economic Research (Magyar Gazdasagkutató Intézet), led by Dr Istvan Varga. The Slovak and Hungarian institutes shared their publications and information about statistical methods used for the calculation of national income and classification of economic sectors.[16] Collaboration with other institutions should be mentioned as well, including the National Economy and Statistical Section of the Reichsbank in Berlin (Volkswirtschaftliche und Statistische Abteilung der Reichsbank), the Reich Statistical Office in Berlin (Statistisches Reichsamt), and the Institute for the World Economy at the University in Kiel (Institut für Weltwirtschaft an der Universität Kiel).

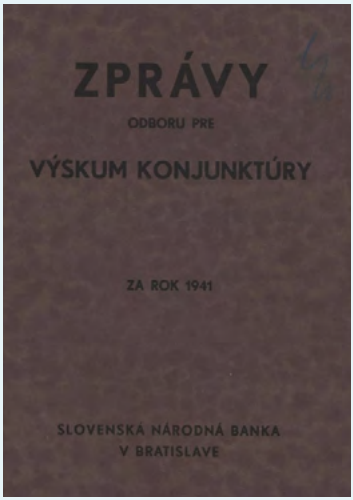
12 MAZÚR, Miloš. Vojtech Krajčovič. In Biatec, 2003, year 11, No 4, p. 25.

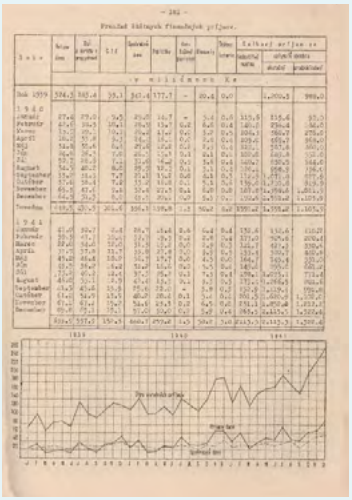
13 ANBS, f. SNB, Osobné štatusy zamestnancov Slovenskej národnej banky (Personal status of employees of the Slovak National Bank) 1942–1944, Inv. No 502, series 80.

14 ANBS, f. SNB, Korešpondencia Poradného zboru odboru pre výskum konjunktúry (Correspondence of the Consultation Board of the Economic Cycle Research Department) 1940–1941, Inv. No 2117, series 1045

15 ANBS, f. SNB, Korešpondencia Vojtecha Krajčoviča s prof. Ernestom Wagemannom (Correspondence of Vojtech Krajčovič and Professor Ernest Wagemann) 1940–1942, Inv. No 2137, series 1058.

16 ANBS, f. SNB, Korešpondencia Vojtecha Krajčoviča s Dr. Istvanom Vargom (Correspondence of Vojtech Krajčovič and Dr Istvan Varga) 1940–1942, Inv. No 2137, series 1058.





Report of the Economic Cycle Research Department of the Slovak National Bank (1941): cover page and table showing an overview of the Slovak state income.

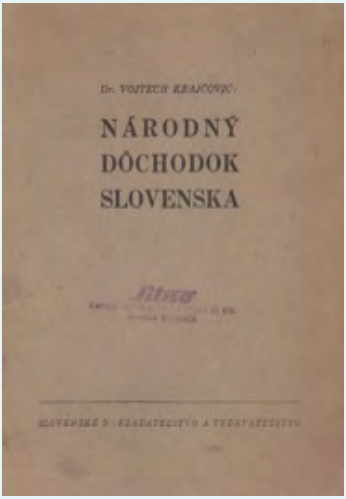
II

The Economic Cycle Research Department of the SNB produced monthly economic reports in Slovak and German for the Slovak National Bank and central government authorities. The reports consisted of a text part and tables. The text described basic price movements, information about metal and coal extraction, developments in industry and agriculture and data on tourism. Tables included data on central bank loans, giro and cheque accounts, deposits made with different groups of banking institutions, state income, and price indices.[17] From 1941 onwards, larger (quarterly, half-yearly and annual) Reports of the Economic Cycle Research Department of the Slovak National Bank were issued, dealing in more detail with state finance, money and capital markets, prices, wages and remuneration, industrial output, agricultural production, transport, and foreign trade.[18]

Alongside its regular publications, the SNB's Economic Cycle Research Department issued occasional specialised brochures. For example the *Special pocketbook of business cycle research No 1 – Prices* is a unique, highly professional document. It includes the methodology for the calculation of price indices, in particular the wholesale price index, retail price index and cost of living index. Its authors conducted a very detailed analysis of price movements, wages and remuneration, and household consumption. In the conclusion of the work they presented arguments for introducing fixed and regulated prices. This document became one of the source materials for the

17 ANBS, f. SNB, Hospodárske správy (Economic reports) 1939–1944, Inv. No 2133, series 1046–1055.

18 ANBS, f. SNB, Správy odboru pre výskum konjunktúry (Reports of the Economic Cycle Research Department) 1939–1944, Inv. No 2135, series 1056–1057.



The national income of Slovakia (1944), a book by Vojtech Krajčovič which dealt with the issues of national income generation

setting of stable price and wage levels in Slovakia between 1941 and 1944.[19]

The staff members of the Economic Cycle Research Department also wrote several papers on the economic capacity of Slovakia. Of particular note is the book by Vojtech Krajčovič entitled *The structure of the Slovak economy*, whose publication in German (*Die Struktur der slowakischen Wirtschaft*), aroused considerable interest amongst foreign, particularly Swiss, entrepreneurs.[20] A paradoxical situation arose in which, on the one hand, economic statistics on Slovakia were strictly confidential and censored, while, on the other hand, foreign entrepreneurs who wanted to export to or conduct business in Slovakia required reliable information. It is not surprising then that some sensitive information occasionally leaked from the Economic Cycle Research Department.[21] In response to strong interest from foreign investors, as well as for propaganda purposes, the Slovak Ministry of Economy issued a German – Slovak publication in 1942 entitled *The economic picture of Slovakia / Wirtschaftsbild der Slowakei*. The staff members of the SNB's Economic Cycle Research Department were closely involved in the production of this volume.[22]

Two other works by Vojtech Krajčovič also aroused a favourable response in expert circles. These works dealt with the issues of national income generation and formed part of his habilitation (associate

19 ANBS, f. SNB, Zvláštny zošit pre výskum konjunktúry č. 1 – Ceny (Special pocketbook of business cycle research No 1 – Prices), Inv. No 2136, series 1057.

20 ANBS, f. SNB, Korešpondencia Vojtecha Krajčoviča so Schweizerische Zentrale für Handelsforderung (Correspondence between Vojtech Krajčovič and Schweizerische Zentrale für Handelsforderung) 27.1.1942, Inv. No 2137, series 1058.

21 ANBS, f. SNB, Upozornenie riaditeľa Úverového odboru SNB Jozefa Trnovca na únik informácií z Odboru pre výskum konjunktúry SNB (Notice by Jozef Trnovec, Director of the SNB's Credit Department, of the information leakage from the SNB's Economic Cycle Research Department) of 20.9.1941, Inv. No 2137, series 1058.

22 Hospodársky obraz Slovenska (The economic picture of Slovakia) / Wirtschaftsbild der Slowakei. Bratislava: Ministry of Economy / Concordia, 1942.

XV. VOJNOVÉ ŠKODY.

XV/1. Hodnota vojnových škôd v r. 1938—1945.

Číslo skup.	Predmet	Dovršená škoda (v mil. Kčs)
1	Cestný, železničný a vlnový	5 838,1
2	Riečnych zariadení a verejných prístavov	6 136,0
3	Telefón, cestné papiere a ďalšia pozostalosť	27 194,7
4	Iný inventár	10 564,9
5	Zvieratá	779,9
6	Stroje, nástroje, nástroje a náradie	7 361,1
7	Obytné budovy	9 985,8
8	Priemyselné stavby	1 613,1
9	Zemnomerské prevádzkové a hydrot.	1 043,2
10	Iné stavebníctvo	12 760,6
11	Verejné budovy a komunikácie	1 000,5
12	Iné škody	19 943,4
	Dovedna	114 401,4

XV/2. Počet zničených a poškodených domov.

Číslo skup.	Okres	Počet obyvateľov		Počet domov	
		spolu	z toho na vojnové škody zničených	zničených	poškodených a na vojnové škody zničených
1	2	3	4	5	6
1	Bánovce n/Bebravou	32	26	611	91
2	Banská Bystrica	71	60	1 703	20
3	Bardejov	71	26	126	61
4	Bratislava-mesto	5	—	242	204
5	Brezno n/Hronom	14	13	149	91
6	Bytča	28	10	1 207	75
7	Čadca	18	17	1 556	200
8	Detva	40	13	37	3
9	Dolný Kubín	23	9	35	—
10	Galanta	23	6	40	22
11	Gelnica	24	6	37	25
12	Hlohovec	55	29	23	11
13	Humenné	44	1	15	5
14	Ilava	20	16	158	150
15	Kežmarok	40	25	1 767	5
16	Komárno	42	13	36	30
17	Košice-okolie	68	9	267	191
18	Krupina	25	2	1	—
19	Levice	33	11	77	309
20	Liptovský Mikuláš	69	30	97	92
21	Lučenec	24	19	85	188
22	Malacky	20	11	3	17
23	Martin	34	24	244	—
24	Michalovce	1	1	26	20
25	Nové Zámky	101	64	156	710
26	Nitra	31	24	417	262
27	Poprad	73	53	258	—
28	Rožňava	30	15	58	14

264

Slovak statistical handbook (1947): cover page and table showing the volume of the war damage in Slovakia.

professorship) thesis at the Slovak University. The second of them, *The national income of Slovakia,* published in 1944, was the most important of Vojtech Krajčovič's works. After being forgotten for a longer time, it has returned to a place at the centre of interest of Slovak economic historians.[23]

In 1942 Imrich Karvaš proposed the restructuring of the SNB's Economic Cycle Research Department as an autonomous Institute for Economic Cycle Research, because he believed that '*only this can guarantee the independence of the institute and its further development*'[24] After lengthy discussions, the department was spun off from the Slovak National Bank in 1944 in accordance with Act No 81/1944 Coll. and renamed as the Institute for Economic Research.[25] The new institute was to be financed, according to a set formula, by the Slovak National Bank and central government bodies represented on the Institute's Board of Trustees. Staff members of the SNB who worked in the new institute remained employees of the SNB.[26] The Institute for Economic Research operated until 1947 when it was merged with the State Statistical and Planning Office.

The last notable publication prepared by the staff members of the Institute for Economic Research was the Slovak statistical handbook published in 1947. This book is one of the most essential sources for the understanding of the Slovak economic structure between 1939 and 1944 and in particular in the transitional post-war period of 1945–1947, as its authors

23 KRAJČOVIČ, Vojtech. Národný dôchodok. (National income) Martin: Matica slovenská, 1942. Krajčovič, Vojtech. Národný dôchodok Slovenska. (Slovak national income) Bratislava: Slovenské nakladateľstvo a vydavateľstvo, 1944.

24 ANBS, f. SNB, Zápisnica z porady konanej dňa 18. októbra 1942 o organizácii Ústavu pre výskum konjunktúry (Minutes of a meeting held on 18 October 1942 concerning the organisation of the Institute for Economic Cycle Research), Inv. No 2118, series 1045.

25 ANBS, f. SNB, Štatút Ústavu pre výskum hospodárstva z 12. decembra 1944 (Statutes of the Institute for Economic Research of 12 December 1944), Inv. No 2120, series 1045.

26 ANBS, f. SNB, Korešpondencia týkajúca sa financovania Ústavu pre výskum hospodárstva 1944 – 1945 (Correspondence concerning the funding of the Institute for Economic Research 1944–1945), Inv. No 2122, series 1045.

tried to sum up the volume of war damages. It counts as one of the few comprehensive and reliable statistical publications in Slovakia prior to 1993.[27]

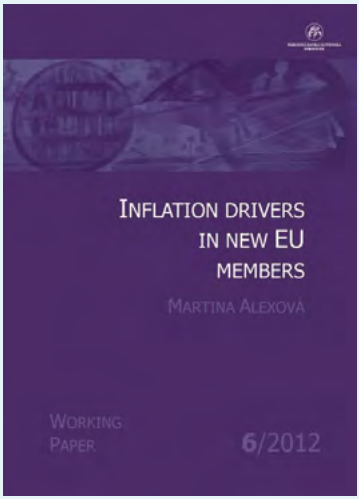
The statistical reports of the SNB's Economic Cycle Research Department that were submitted to its German partners were intentionally altered by order of Governor Karvaš, so that Germany would not have precise knowledge of the economic capacity of Slovakia. Shortly after the outbreak of the Slovak National Uprising, Imrich Karvaš, who participated in the anti-fascist movement, was arrested by the Gestapo on 3 September 1944. He was accused, among other acts, of falsifying statistical reports. Imrich Karvaš denied this accusation when he was interrogated by the Gestapo at their office in Brno on 20 September 1944, stating: 'It is obvious that statistical data and works have been available to the allied Reich every month. Relevant information has been delivered directly to the German Embassy by the Ministry of Foreign Affairs, and the Reich's representative on the national bank's Board has received it from the bank's Directorate. It is thus impossible that Slovakia would hold back from the Reich any information about its economic productivity. The truth is that the Economic Counsellor at the German Embassy has always had all statistical surveys at his disposal.'[28] The modification of statistical and economic data that were sent to Germany is also mentioned in the memoires of Peter Zaťko, Director General of the Central Association of Slovak Industry and a close colleague of Imrich Karvaš.[29] Even though the Gestapo were unable to prove most of the accusations, Imrich Karvaš was sentenced to death in February 1945. However, he had the good fortune to survive.

Similarly dramatic was the fate of the director of the Institute for Economic Research, Vojtech Krajčovič. Having made an agreement with the former Minister of Foreign Affairs Ferdinand Ďurčanský, he planned a fairly extensive study trip to Hungary, Croatia, Germany and Switzerland in 1944. Therefore, he applied to the then Governor of the SNB Rudolf Kubiš for permission to travel abroad and draw an allowance for the trip. Rudolf Kubiš declined the request on 3 November 1944 as the Institute had ceased to be under the Bank's competence from 15 August 1944 and was now the responsibility of the special Board of Trustees. Undaunted, Vojtech Krajčovič decided to travel to Croatia in mid-November 1944 without any official approval. In Croatia he was arrested together with four other persons and accused of attempting to contact the local resistance movement and of multiple attempts to bribe the authorities. In his statement he claimed to be in the country to study the local economic situation. Croatian police nevertheless contended that Krajčovič wanted to get to the coast and travel to Great Britain with the help of British officers. The Slovak Embassy in Zagreb realised that the situation was serious and tried to arrange the repatriation of the arrested persons to Slovakia at the beginning of 1945. As the Gestapo was starting to sniff around the case, there was a serious risk that Krajčovič and his co-detainees would be executed. Referring to the Slovak – Croatian agreement on mutual assistance in criminal matters, Ambassador Viktor Bečko took steps to have them handed over to Slovakia. Unfortunately, he was not successful. Krajčovič was first interned in Sarajevo and Zagreb and then transported to Vienna and deported to Germany. He was held at the Mauthausen concentration camp and sentenced to death there. Before the sentence could be carried out, the camp was liberated by an allied army and Krajčovič

27 Štatistická príručka Slovenska 1947. (Slovak statistical handbook 1947) Bratislava – Martin, 1947.

28 SCHVARC, Michal – HALLON, Ľudovít. Kauza Karvaš, Dokument č. 11, Zápisnica z výsluchu I. Karvaša na úradovni Štátnej tajnej polície (gestapo) v Brne 19. – 20. septembra 1944 (The Karvaš Case, Document No 11, Record of the interrogation of I. Karvaš at the State Secret Police bureau (Gestapo) in Brno on 19 and 20 September 1944), p. 134.

29 TEREN, Štefan (ed.). Národohospodár Peter Zaťko spomína. (National Economist Peter Zaťko Remembers) Liptovský Mikuláš: Tranoscius, 1994, p. 102.



Working paper of the National Bank of Slovakia Research Department.

was set free. His health had deteriorated during the months he had spent in prison and he decided to undergo a treatment in France, more specifically in Paris. He never returned to Slovakia because of the rise to power of the Communists there.[30] Information about his subsequent activities is hard to come by: all that is known is that he immigrated to the United States in 1946 where he set up and led an émigré organisation called the Committee for Liberation of Slovakia.[31]

30 MAZÚR Miloš. Vojtech Krajčovič. In Biatec, 2003, year 11, No 4, p. 25.

31 VARINSKÝ, Vladimír. Vznik organizácií Bielej légie na Slovensku. (The establishment of the White Legion's organisations in Slovakia) In: PEŠEK, Ján a kol. Kapitolami najnovších dejín. (Through the Chapters of Recent History) Bratislava: Institute of History, Slovak Academy of Sciences, 2006, p. 176.

Conclusion

Regardless of the very short period for which the SNB's Economic Cycle Research Department and the Institute for Economic Research operated, these institutions laid the foundations of economic statistics in Slovakia. Reports, papers and publications issued by the department are essential sources of information on the development of the Slovak economy between 1939 and 1945. They include basic data on price and wage index developments or on the occurrence of an inflationary spiral in 1943-44. Several staff members of the department later became outstanding personalities of Czechoslovak economics, such as Štefan Heretik, Adela Hornová and others.

Economic research focussed on monetary issues only returned to Slovakia in 1993 when the Institute of Monetary and Financial Studies was established as part of the National Bank of Slovakia (the NBS - Národná banka Slovenska). Current economic research in the NBS is carried out primarily by the Research Department with input from other units (e.g. the Economic and Monetary Analyses Department or the Statistics Department). Research is intended to serve the needs of the National Bank of Slovakia, the economy of the Slovak Republic and the implementation of economic policy. Most research is applied research with potential applications in the economic policy of the Slovak Republic and the euro area. Key topics are monetary developments, macroeconomics and financial stability. As part of its tasks, the Research Department prepares research studies across the spectrum of underlying macroeconomic risks and financial sector developments. It also analyses the effects of economic and monetary policy measures on developments in the Slovak national economy and its interactions within the economic and monetary union. In its activities, the department cooperates with partner institutions in Slovakia and abroad.

Chapter 2

Luncheon, tea and statistics. The development of 'low-key' cooperation at the Bank for International Settlements.

Daniel Wirt[32]

Introduction

The Bank for International Settlements is an international organisation whose purpose is to foster cooperation among central banks worldwide.[33] More specifically, the Bank's mandate is 'to promote the co-operation of central banks and to provide additional facilities for international financial operations; and to act as trustee or agent in regard to international financial settlements entrusted to it under agreements with the parties concerned'.[34] The BIS is headquartered in Basel, Switzerland, and has representative offices in Mexico City and Hong Kong.

Founded in 1930 amidst the tumultuous interwar crises, the Bank stands today as the oldest international financial institution in the world. This longevity is largely a result of the strong and continually increasing need for cooperation among central banks. It is also a testament to the Bank's ability to redefine itself, as it has done many times in the past 85 years, in order to stay relevant in the rapidly evolving financial and monetary landscape. To be sure, its goal of promoting central bank cooperation never changed — the requirements for cooperation did.

To understand the purpose of the BIS, it is necessary to define what is meant by 'central bank cooperation'. Vague as the term may be, the phenomenon behind it is well studied. An overview of the recent literature on this topic exceeds the scope of this paper, so instead a simple typology is presented here.[35] Richard Cooper in 2008 defined six manifestations of central bank cooperation: exchanging information, standardising concepts and filling gaps in the available information, exchanging fundamental views, sharing research (as opposed to sharing raw data), harmonising principles and regulations, and agreeing on common actions.[36] The first five primarily consist of some form of information exchange, while the last one adds another dimension to these efforts. To put it more simply, one could refer to Borio's and Toniolo's distinction between 'low-key' and 'high-key' cooperation.[37] The latter encompasses high-level financial diplomacy and the forging of joint decisions and practices, while 'low-key' cooperation stands for the purposeful exchange of information that forms the basis of any joint undertaking.

The BIS has engaged in both high-key and low-key cooperation from the very start, with varied but generally positive effects. Throughout the history of the Bank, the scope of both areas has changed considerably. The creation of the Basel Capital Accords by the BIS-based Basel Committee on Banking Supervision, to name but one example, surpasses any form

32 The views expressed are those of the author and not necessarily those of the Bank for International Settlements.

33 Bank for International Settlements will be abbreviated in this chapter as 'BIS' or simply 'the Bank'. The BIS historical archives will be referenced as 'BISA'.

34 BIS Statutes, amended 27 June 2005 (http://www.bis.org/about/statutes-en.pdf).

35 Essential literature on central banks cooperation is included in the bibliography.

36 R. COOPER, 'Almost a century of central bank cooperation', in C. BORIO, G. TONIOLO, and P. CLEMENT, eds., Past and future of central bank cooperation, Cambridge University Press, 2008, 76-112.

37 G. TONIOLO and C. BORIO, 'One hundred and thirty years of central bank cooperation: a BIS perspective', BIS Working Paper, Vol 197, Bank for International Settlements, February 2006.

of high-key cooperation imaginable in the 1930s.[38] The focus of this paper lies however on the low-key side, the exchange of information. Two periods in particular warrant a closer examination: the genesis of the Bank's research activities in the 1930s, and the reorientation of its statistical activities in response to the fast growing but opaque Eurocurrency market in the 1960s and 1970s.

It should be noted that this paper is written from an archivist's point of view, with a focus on the archival materials that are part of the BIS historical archives. The intention is to outline the provenance of these records, which is necessary for assessing their value for historical research purposes.

Research at the BIS in the 1930s

When the BIS was formally established in January 1930, its objectives and purposes were clear—how to pursue these goals was not. According to the bank's statutes, its main objective was to 'promote the co-operation of central banks'. What precisely that meant, BIS officials lamented on more than one occasion, no one really knew. As there was no precedent, no template upon which to base the organisation and operation of the bank, the newly appointed General Manager Pierre Quesnay and his staff had little to go on.

While the immediate cause for the creation of the Bank had been the thorny issue of the German reparation payments, its broad mandate of promoting central bank cooperation reflected the wish for a close partnership between the member central banks. It had become increasingly clear that they could no longer weather international economic storms on their own. Occasional joint action during emergencies, for example when the Bank of England had accepted loans from the French and the Russian central banks during the infamous 1890 'Baring crisis', was no longer sufficient.

After the BIS was established and the delicate riddle of senior staff appointments had been addressed, attention turned to the practical organisation of the institution. During a series of meetings in Quesnay's office in the spring of 1930, a blueprint developed in which 3 departments were proposed: a general secretariat, a banking division, and a 'department for relations with central banks' whose function would be to foster cooperation between the member central banks.[39] This organisational layout was approved by the Board, though on the subject of the third department it was decided to postpone further planning until autumn so that the central banks could voice their expectations. The development of the department was handed over to Quesnay and Francis Rodd, a British banker who joined the BIS in June 1930. As it turned out, the precise meaning of 'central banks cooperation' proved rather difficult to pin down. By October, the issue had still not been resolved and with no new deadline issued, the department was set to continue in its provisional form.

The necessity of cooperation was hardly up for debate. But what form should it take? One senior official believed that collaboration should be limited to providing financial services and that, as a consequence, the third department should act as an intelligence unit whose research would dictate the banking division's operations.[40] Sound banking services, he argued, was really all that was needed in the way of cooperation. His proposal met with resistance, though, and it was agreed to keep the banking department independent. A similar debate emerged around the issue of relationships with commercial banks, where it was agreed to limit the Bank's activities to central banks only.

The idea of a research department was certainly not ground-breaking. Most if not all major financial institutions at that time, including central banks, had an

38 The Basel Committee was created in late 1974 and released the first Basel Capital Accord (Basel I) in 1988.

39 The idea of appointing an 'Ambassador' for central banking cooperation instead of erecting a department was considered but ultimately rejected. See P. BAFFI, The origins of central banks cooperation. The establishment of the BIS, Editori Laterza, 2002, 134.

40 BISA 7.29 BIS 32.

intelligence unit devoted to research. The BIS' department for relations with central banks was modelled on its peers in concept but not content. Its role differed vastly from central banks: there was no currency stability to maintain, no supply of credit to be regulated, and no single national market to be monitored. Instead, the department had to develop a high-level view of multiple markets that gave its member central banks an insight into developments beyond their immediate operating context.

The fundamental question of cooperation that loomed in the background did not prevent the Monetary and Economic Department (MED) — the awkwardly long 'department for relations with central banks' name was abandoned quickly — from operating. Staff members started collecting and analysing data on various topics. The limited number of staff members available to the department meant that the attention was strongly focused on central banking developments, as well as 'certain subjects of particular actual importance', with little room to spare for broader developments.[41] Research results were discussed during Board meeting weekends and found their way into the BIS Annual Report. Detailed ad-hoc 'central banking studies' were circulated in the central banking community.[42] At the same time, numerous formal and informal meetings cemented the bank's status as a true central banking 'club'. The momentum behind much of this activity was provided by the Swedish economist Per Jacobsson, the later head of the IMF, who joined the BIS in September 1931 as economic adviser.[43]

Against the background of this energetic activity, dark clouds appeared. Of course there was the economic depression: 'so evident', Jacobsson wrote, that 'not much work was needed to interpret the signs of the times in that respect'. The collapse of the gold standard in the wake of the crisis presented an additional problem; efforts to revive the standard at the 1933 London Conference had failed. For the BIS, 'conceived to work within the gold standard system', monetary stability without gold was simply unthinkable. But the bank had more immediate troubles to deal with than the depression. At the Lausanne Conference of 1932, Germany suspended its war reparations payments indefinitely, thereby eliminating the principal raison d'être of the BIS.[44] Without the reparations payments to oversee, the purpose of the Bank became somewhat apocryphal. Although the banking department was not dissolved (as some believed it should have been), attention now shifted to the 'club' side of the BIS.[45]

With the purpose (and consequently the existence) of the institution at stake, the casual notion of central bank cooperation became a first-rate priority. 'The time has come to attempt to state what is comprised in the abstract term 'central bank cooperation', to reduce this abstraction to concrete definition, and to outline the scope of its practical application', BIS President Leon Fraser wrote in the 5th Annual Report.[46] Fraser outlined eight principles, all based on the common denominator of sharing information, that finally transformed the abstract idea of cooperation into a more or less concrete plan. Among other points, he suggested that 'It is highly desirable that the BIS should develop as an international center for the collection and interpretation of information about the movements of international short-term credits and indebtedness supplied to it by individual central banks'.[47] Collecting, analysing and distributing information was to become the fundament of cooperation and therefore the main occupation of the MED.

41 BISA 7.29 BIS 32, memo by Per Jacobsson.

42 Also known as the 'CB series'. See BISA 9.1 002.

43 Although Per Jacobsson is hardly absent in the BIS Archives, the bulk of his personal papers from his time at the BIS was donated to the University of Basel and can be consulted there.

44 Payments had already been suspended under the 1931 Hoover moratorium, but that was intended as a temporary measure.

45 Per Jacobsson, among others, was a strong defender of the BIS' banking business, citing practical reasons for its existence. Apart from legal benefits, he argued that there was a psychological advantage to having an operational banking unit. Central bank governors would feel more at home in a real bank than in a mostly academic research centre. Furthermore, their position as board members would require them to meet regularly.

46 BIS Annual Report, 1935, 41-48.

47 Ibid., 43.

However, as the later BIS president Johan Beyen dryly noted, 'if one compares the various desiderata put forward in Mr Fraser's chapter with what is actually done, it appears that we still have a long way to go on the road from just serving luncheon and tea toward actually being the Mecca of information we are meant to be'.

Beyen, in tandem with Jacobsson, focused his energy on reorganising the MED. The department had to become a true research hub, capable of providing accurate and relevant insights into current monetary developments as well as long-term trends. This goal would not be achieved if the BIS merely developed into 'still another international statistical bureau', he warned. Statistics are subject to interpretation; if the BIS was to be the central hub of central banks cooperation, it had to go beyond open-ended figures and present conclusions, based on a thorough analysis of the statistics it collected. With his usual taste for metaphors, Beyen concluded that 'to remain interesting and valuable, [the BIS' research] ought to be both practical and theoretically well construed; it must be actual and accurate at the same time; it must be both comprehensive and complete; to be at all digestible it must give neither too much nor too little to read, neither too many nor too few figures and graphs to look at. […] The 'chef de cuisine' of the Banker's club has to be a real artist in avoiding the Scylla and Charybdis of either boring the palates of its members by too heavy and upsetting their constitutions by too much or starving them by too little food'.[48]

The adaptation of the BIS to its post-reparations environment placed central bank cooperation squarely at the centre of its mission. Sharing data and research was seen as a crucial component of this objective. Empowered with this responsibility, Jacobsson, who was officially appointed head of the MED in 1936, set in motion an ambitious research agenda.[49] This was made possible by an arrangement whereby junior officials from central banks were seconded to the BIS on a temporary basis. The research agenda focused on nine main topics:

1. Developments in central banking
2. Private banking
3. Debt structure and public finances
4. International short-term indebtedness
5. Gold (and to a lesser extent silver) market developments
6. Balance of payments and their influence on central banks' policy
7. Price trends
8. (Long-term) economic trends
9. Case studies on different subjects and countries

The priorities indicated in the research agenda signalled a broadening of the MED's research. Although monetary developments remained an important study area, the scope of research and data collection now included purely economic subjects as well.

Archival sources for historical research

The qualitative and quantitative data collected on the topics mentioned above, as well as the research carried out on the basis of these data, found their way into different records series which are now part of the BIS historical archives. These series were maintained until the late 1960s and early 1970s, after which they were discontinued for a number of reasons.

Owing to the peculiarities of past registry procedures, research data in the BIS archives can be found in many locations.[50] However, the bulk of the data is captured in three main groups: a collection of qualitative sources, a statistical filing system, and a number of series of publications containing research output. There are close links between these groups.

Interesting but hardly unique, the collection of qualitative sources contains papers, legislation,

48 BISA 7.29 BIS 32, note on the organisation of the Monetary and Economic Department of the BIS by Johan Beyen, 1935.

49 BISA 7.29 BIS 32, memo by Per Jacobsson, 1935; given the broadness of this research programme, it could of course be argued that it was more a classification of research categories than an outline of subjects to be studied.

50 Archival practice dictates that the original structure should be respected (the so-called 'principle of original order') in order to preserve the original context of the records.

news articles and other bits of information, collected from various sources and classified by subject.[51] The collection was referred to internally as the 'central banking files'. Strictly speaking, it is not an archival group but a documentary collection.[52] The documents in this collection give some indication of the general background and context of certain topics, but they are rarely unique. It is worth noting though that these files often contain copies of BIS-produced materials and, in some instances, authentic archival records.[53]

A more homogeneous source of information for historical research is the second group mentioned, a subject based filing system containing about 20m of quantitative data, carefully typed or handwritten on A3-sized filing cards.[54] The statistics are classified by country and subdivided into categories that roughly correspond to Jacobsson's original research agenda. The subjects for which data were collected vary by country, ranging from central banks' balance sheet statistics compiled from their periodic statements, to statistics on the number of cars produced or wages in the agricultural sector. The variety in subjects can be explained by the fact that countries were assigned for monitoring to different staff members, each of whom left their traces in the filing system. Another reason for the discrepancies between countries is, quite simply, the availability (or lack) of data from national providers. This emphasizes the varying sources of the obtained data: some statistics were simply copied from widely available sets such as banks' annual reports or commercial indices; others were reported by central banks or obtained through non-public channels. For historical research, the more interesting datasets are obviously those which cannot be (easily) consulted elsewhere. A basic finding aid is available to facilitate searching in the statistics.

The third group consists of the published research output of the BIS. Apart from its flagship Annual Report, the Bank published a significant amount of in depth research papers, reports, speeches and other materials in the decade leading up to the Second World War. Most of this research was intended for the central banking community and was distributed via private channels; other publications were made available to a wider audience. The BIS continued to publish research during and after the war, and still does today. The archival collection of BIS publications therefore ranges from the Bank's foundation in 1930 until the present day, and is still being added to.

New directions in the 1960s and 1970s

By skipping ahead several decades in the history of the BIS, we don't mean to imply that the intermediate years were of little importance to the Bank, or that the end of the 1930s amounts to the end of a clearly defined period. It is also not for convenience that we leave out the controversial wartime episode and the near-liquidation of the BIS after the war.[55] Rather, the limited scope of this contribution necessitates a selective approach. Bearing this in mind, we nevertheless refer to some developments in passing.

The outbreak of the Second World War confined the Bank's operations to a self-imposed code of neutral conduct. High-key cooperative activities became largely impossible, but the Bank's research staff continued the established routine of collection and analysis of data and the dissemination of research results. The Annual Report was even expanded and developed into 'the single most comprehensive source of international financial and banking statistics available to both the Axis and Allied sides'.[56] The BIS survived the difficult post-war years and, in the late

51 BISA 7.29 - Central Banking Files.

52 The classic definition of a record is 'Information created, received, and maintained as evidence and information by an organization or person, in pursuance of legal obligations or in the transaction of business' (ISO 15489-1:2001). By contrast, a collection is defined as an 'artificial assemblage of documents accumulated on the basis of some common characteristic without regard to the provenance of those documents' (ICA multilingual terminology).

53 This is typical for loosely governed subject classifications, which are prone to attract any kind of 'miscellaneous' records.

54 7.30 – MED statistics.

55 For a detailed history of the BIS, see G. TONIOLO and P. CLEMENT, Central Bank cooperation at the Bank for International Settlements, 1930-1973, Cambridge University Press, 2005.

56 P. CLEMENT, ,The historical background to the statistical activities of the Bank for International Settlements, 1930-2000', IFC Bulletin, Vol 18, July 2004, 28.

1940s and 1950s, took on the role of technical agent in several European multilateral compensation agreements and later in the European Payments Union and the European Monetary Agreement of 1950 and 1955 respectively. The reports which the BIS produced in these functions between 1947 and 1972, with detailed figures on the participating countries' balance of payments positions, are part of the Banks' archival collections.[57]

As the Bretton Woods agreement in 1944 had reinstated gold-dollar parity and many currencies were pegged to the dollar, the Bretton Woods era monetary system hinged upon the stability of the gold-dollar peg and the connected exchange rates. The efforts of the BIS to collect the necessary data to monitor exchange rates is reflected in the subject based statistical collection, where currency and gold rates make up the largest category for most of the included countries. Though it turned out that no amount of statistics could save the Bretton Woods gold standard, efforts to reform the system sparked a close cooperation in the international financial and monetary milieu that survived the system itself.[58]

The changing international economic landscape prompted the BIS to adapt to its new surroundings. For its low-key cooperative activities, this meant new data to be collected, new subjects to be studied and new research areas to be explored. However, it was only in the 1960s and 1970s that a significant new direction emerged. This was triggered by a phenomenon that caused concern at some central banks, prudent acceptance in others, and perplexity in all: the emergence of the Eurocurrency market.

To understand the shared perplexity, one doesn't need to look far. In 1963, the Eurocurrency market stood at around 7 billion $, enough to inspire some nervousness. Ten years later, its size had multiplied to more than 130 billion $.[59] While 'anything that grows by 25 to 40 per cent per annum warrants close attention', what made the Eurocurrency market particularly unsettling was its opaque character.[60] Eurodollars are deposits in US dollar at foreign banks or foreign branches of American banks. This places them outside the regulatory reach of the US Federal Reserve. The term 'Eurocurrency' is synonymous with Eurodollars but also includes currencies other than the US dollar where the same mechanism applies. A very significant share of the Eurocurrency market operated as an interbank market. Between source and final borrower, funds were frequently redeposited in a chain of transactions at different banks. The interbank portion of the market made it difficult to provide accurate figures on the development of Eurocurrencies, as redeposited funds inflated statistics. But even when leaving this complicating factor out of the picture, at the beginning of the 1960s, the data available on the Eurocurrency market was very limited.

Effective monitoring of — and possibly intervention in — the Eurocurrency market, could not be done without addressing this lack of information. Being the 'central banks' central bank', the BIS was in a very suitable position for such an exercise. The general issue was first taken up in May 1961, when a group of experts convened at the BIS to discuss the emerging market. This was followed by a second meeting in October 1962 when, at the suggestion of BIS Economic Adviser Milton Gilbert, the participating central bank experts agreed to pool the data on the Eurocurrency market in their respective countries. A statistical reporting system with the BIS as the central hub was set up. The first consolidated data, based on an ad-hoc survey which the BIS conducted in 1962, became available in March 1963. Thereafter, the regular reporting exercise resulted in a steady supply of statistics, of which a breakdown was published in a

57 BISA 9.1 005 and 006.

58 The Group of Ten (G-10), for which the BIS still maintains a page with publications on its website, is a prime example of this cooperation.

59 Figures from TONIOLO and CLEMENT, 2005, 455.

60 G. BAER, 'Sixty-five years of central bank cooperation at the Bank for International Settlements', in C.-L. HOLTFRERICH, J. REIS and G. TONIOLO, eds., The emergence of modern central banking from 1918 to the present, Aldershot: Ashgate, 1999, 352. Cited in TONIOLO and CLEMENT, 2005, 459-460; A number of factors are credited with providing the impetus for the rapid emergence of the Eurodollar market from the late 1950s. They will not be discussed here.

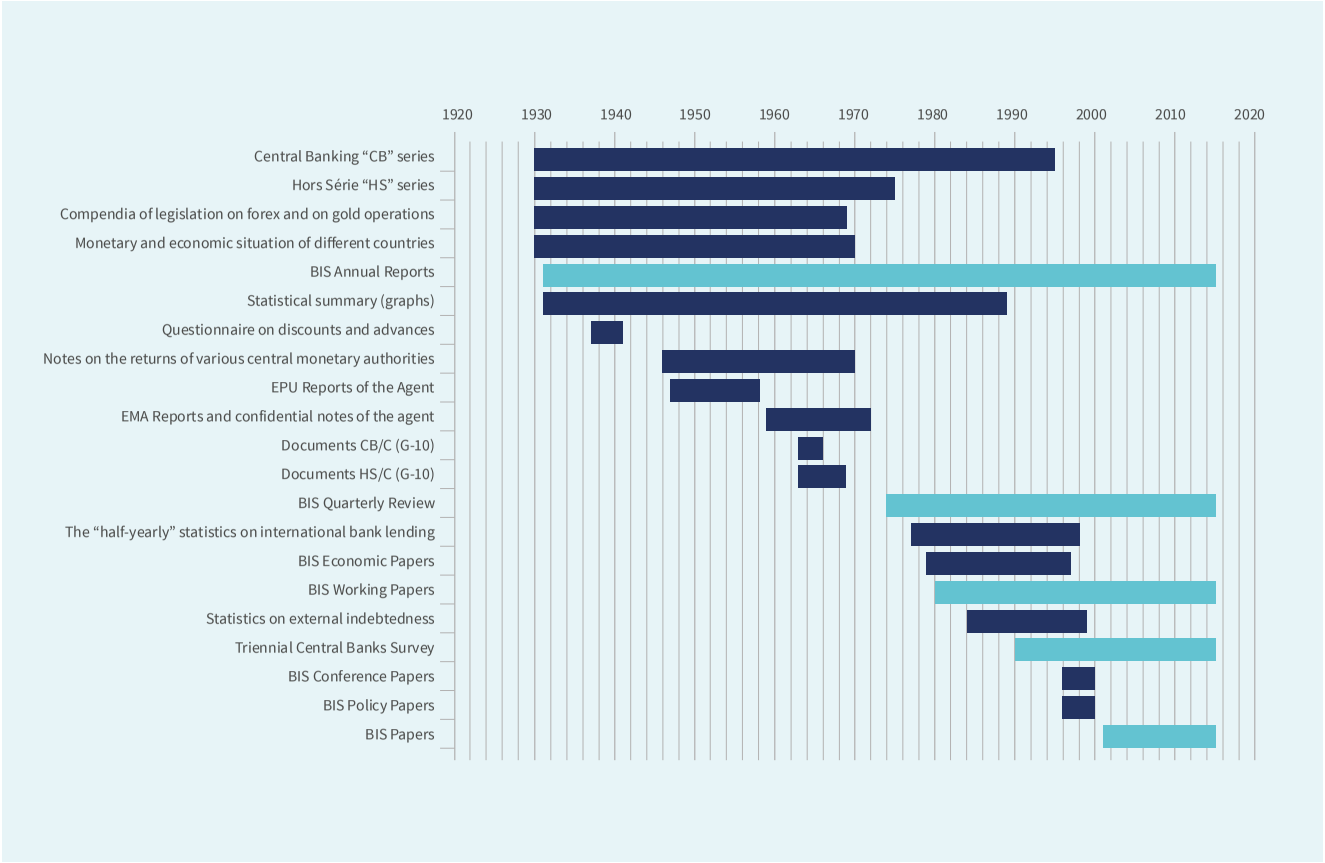


Fig. 1. Timeline of the most important BIS publications series. Series marked in green are still active today.

dedicated chapter of the BIS Annual Report from 1964 onwards. The neatly structured breakdown that was presented in the Annual Reports belied the difficulties in harmonising the reporting of figures. Frequent meetings of experts at the BIS to improve the quality and coverage of the reported statistics lead to the establishment of a specialised body, the Euro-currency Standing Committee, in 1971.[61] As the statistics matured, more detailed breakdowns were published on a quarterly basis from 1974.[62]

The Eurocurrency statistics are of course only one strain in an eventful two decades, but they contributed to a stronger focus and more systematic approach to data collection and dissemination at the BIS. This is evident in the Bank's archival collections. The statistical collection and the so-called 'central banking files' that were described earlier were phased out. A number of existing publication series were discontinued and new series, most notably the quarterly statistical reports, were introduced in the 1970s and 1980s. The new series were not only intended for the central banking community but were available to the general public.

The scramble to provide information on the Eurocurrency market in the 1960s and 1970s illustrates a key point about low-key cooperation at the BIS — that it is a catalysing force. Collecting, analysing and disseminating information is not just a supporting form of cooperation, it requires a great deal of cooperation to begin with. To be fair, this cooperation had its limits. A British official suggested in 1975 to include other international organisations such as the IMF and the OECD in the Bank's statistical efforts.[63] He had heard 'a certain amount of criticism of the BIS Eurocurrency statistics from such organisations and in his view there was a danger that one or other of them might begin to duplicate the work of the BIS in that area'.

Though the reactions to his proposal were divided, the tenor was that 'to invite such outside observers to meetings would change the character of the BIS as a central bankers' club'. It would take some time before a joint statistical undertaking by the BIS and OECD, later joined by the IMF and the World Bank, would emerge. The Mexican debt crisis of 1982 finally brought about a joint statistical venture between the BIS and the OECD, the aptly named statistics on external indebtedness. The two organisations were joined by the IMF and the World Bank in 1999 to form the Joint BIS-IMF-OECD-World Bank statistics on external debt. The statistics were and still are collected and made available through a joint 'hub', the JEDH.[64]

What started as a relatively limited information sharing exercise on Eurocurrency developments, rapidly turned into a broad and increasingly routine operation at the BIS. The adoption of computerised data processing in the late 1970s made it possible for the Monetary and Economic Department to continually expand the coverage and quality of the BIS statistics. A shared platform, the so-called BIS Data Bank, was set up to facilitate the sharing of statistical data between participating central banks. As Christian Dembiermont observes, 'the Data Bank was a natural public service to its shareholders as well as a tool to facilitate its own work'.[65] The platform still exists today and remains an extremely relevant tool for central banks.

A 'mecca of information'? The BIS historical archives

Whether the BIS has succeeded in becoming what Johan Beyen (perhaps with some irony) described as a 'mecca of information', is a question we leave for others to contemplate. The more interesting question, at least from an archival point of view, is what remains of the Bank's research efforts and how this could serve historical research purposes.

61 Renamed in 1999 as the Committee on the Global Financial System (CGFS).

62 This series of Eurocurrency statistics was expanded continually and in 1998 developed into the BIS Quarterly Review, which is still being published. BISA 9.1 008.

63 BISA 1.3a(3) Vol 19.

64 Joint External Debt Hub, (http://www.jedh.org/).

65 C. DEMBIERMONT, 'Thirty years of experience in database management: the BIS Data Bank', IFC Bulletin, Vol. 28, August 2008, 308.

The BIS has a rich historical archive which was opened for public consultation in 1998.[66] Among its archival materials are large amounts of meeting records, correspondence, case files, and other records, in short, the evidence of decades of high-key cooperation. Curiously invisible for a long time, however, were the research data and findings that have been accumulating for over 80 years. A significant amount of more recent BIS publications is available on the Bank's website, as are statistical datasets going back, in some cases, to 1977. Still, most BIS-produced publication and research data were scattered around the archives and the Bank in general, uncatalogued and largely inaccessible to researchers. In 2014, a project was set up to remedy this situation. It resulted in a fairly complete catalogue of BIS publications and ensured the preservation of the paper materials in this group. The project also lead to a close inspection of related materials, particularly the statistical collection which the Monetary and Economic Department maintained between 1930 and the 1970s.

What makes published materials a challenge to preserve, is that they are often perceived as belonging to a library collection. Their archival value is ignored. Libraries have a different function than archives and are usually less concerned with preservation than with access. Archival principles do not translate well into the librarian's world. As for statistical data, the difficulty is one of interpretation. Quantitative datasets lie outside the comfort zone of many archivists. It often takes a seasoned specialist to make sense of the data and to determine its usefulness for further research.

The economic research data that is available in the BIS archives has a substantial potential for historical research. How to use it, and to which end, is an issue which the historian and the archivist will have to figure out together. All it requires is a little cooperation.

66 Access is generally restricted to records that are at least 30 years old, with a number of exceptions to this rule. More information regarding access to the archives can be found on the BIS website (www.bis.org).

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Chapter 3

The rise and decline of research departments in the Spanish financial institutions, 1930–2015.

José L. García-Ruiz[67]

Introduction

The Research Departments (Servicios de Estudios in Spanish) in financial institutions are specialized departments in macroeconomic analysis that emerged in the early twentieth century in line with the formation of modern central banks. The relationship between the monetary sector and the real sector of the economy was a constant concern for the new monetary authorities, and it was the center of attention in the Research Departments, which recruited people trained in the faculties of Economics that emerged at that time in universities worldwide. The publication in 1936 of The General Theory of Employment, Interest and Money by John Maynard Keynes was a milestone in the history of Macroeconomics. The book induced one to think that with appropriate monetary and fiscal policies it was possible to moderate the impact of economic cycles and provided an adequate theoretical framework for that intervention (Keynes, 1936).

After World War II, private banks followed the example of the central banks and created their own Research Departments. Other Research Departments were developed in international organizations, universities and employers' organizations, amid a widespread acceptance of Keynesian thinking. However, when this approach to Economics as a social science went into crisis, in line with the problems of 'stagflation' of the 1970s and 1980s and the rise of neoliberal thought, Research Departments began to be regarded with suspicion. For new business leaders it was not clear that banks and companies in general had to fulfil a social function, as did the Research Departments with their high social impact publications, which completed the official statistics and encouraged the debate on major issues of economic policy. Microeconomics imposed on Macroeconomics and in the financial institutions the microeconomic analysis of risks was considered far superior to previous macroeconomic analyses.

In this paper we present the evolution of the Research Departments in Spain, which followed the general pattern we have described above. The pioneer was the Research Department of the central bank, Banco de España (1930), to be followed by those of the banks Urquijo (1945), Central (1954), Bilbao (1954) and Banesto (1965), to name only those that elaborated original information. Insurance companies and savings banks, being smaller, preferred to create shared Research Departments and thus emerged ICEA (1965) and FUNCAS (1979), respectively. Only the leading institutions (Mapfre among the insurance companies and La Caixa among the savings banks) had their own research departments (historical rankings in Annex I; see also, Tortella, dir., 2014, for insurance and Torres & Comín, 2003, for savings banks). The crisis that put an end to the Golden Age in the 1970s and 1980s swept away the solid Research Departments devoted to Keynesian Macroeconomics. At best, they were replaced by others with less structure that would work with more or less sophisticated econometric models, always ready to give estimates of the future evolution of the main variables, that is, the Neo-Keynesian Macroeconomics inspired by Lawrence R. Klein.

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The Great Recession that began in 2007 is provoking the end of the neoliberal apotheosis associated with the Great Moderation of the turn of the century, and to a lesser extent a critical evaluation of the predictive ability of econometric models *à la Klein*; for instance, these models were unable to foresee the outbreak of the bubbles that had formed during the Great Moderation and led the economy to the Great Recession (Kotz, 2015). In Spain, as we shall see, this has been a particularly serious problem, since the bursting of a bubble of enormous dimensions in real estate has caused devastating and long lasting effects. However, after the outbreak of the crisis, Macroeconomics has appreciated against Microeconomics and this is good for the consolidation of the Research Departments, which are being slowly reinforced everywhere.

The pioneer: the Research Department of the Banco de España

In 1930, Spain was at a crossroads. The country was abandoning the dictatorial system imposed seven years before amid a difficult economic environment marked by the international Great Depression. The tensions were reflected in the currency, the peseta, whose situation was a worry for the monetary authorities. France, which was the main commercial and financial partner of Spain, also showed concern and it is not surprising that there were two French economists, Pierre Quesnay and Michel Mitzakis, who offered their advice to the Spanish authorities to help to solve the problem (on the history of this Research Department see Martín-Aceña, 2000 & 2006, and Martín-Aceña & Tortella, 2010).

Quesnay had been chief of the Research Department of the French central bank, the Banque de France, and now he was the general manager at the Bank for International Settlements, and Mitzakis was a young inspector of the Banque de France. Both were in contact with the governor of Banco de España, Federico Bas, to help him to design a plan to stabilize the peseta. The plan should ensure that other European central banks would lend money to Spain. Quesnay's report was finalized on 15 November 1930 and included a recommendation to create a Research Department on monetary and economic issues within the central bank, modeled on a similar department of the Banque de France.

The first mission of the Research Department would be to calculate the impact of the exchange rate on the elements of competitiveness of the Spanish economy (prices, wages, taxation, foreign sector, etc.), but hereinafter the department would be responsible for monetary research in general, preparing technical notes that should be useful to the governor. An important issue was to analyze the conditions for implementing the Gold Standard in Spain. To give a structure to the department it was necessary to design an organization chart, and here Mitzakis' collaboration was decisive. The young French economist maintained frequent contact with a lawyer specializing in finance, José Larraz, and a statistician, Olegario Fernández-Baños, because they were the people chosen to run the department.

After overcoming some difficulties, on 2 January 1931 the Research Department was ready to work with three sections: i) economic, financial and monetary research; ii) translations, documentation and library; and iii) operations to stabilize the peseta. Very soon, Larraz left the department and was replaced by the economist Germán Bernácer, who, like, Fernández-Baños, had done doctoral studies abroad. The first two sections were soon producing interesting papers (such as *Ritmo de la crisis económica española en relación con la mundial*), but the third lagged behind because Bernácer proved to be a Keynesian economist who saw the depreciation of the peseta as an appropriate instrument to deal with the external shock of the Great Depression on the Spanish economy. When the pound sterling left the Gold Standard in September 1931, the Research Department understood that this movement supported its view. For the same reason, the department was radically opposed to the integration of the peseta into the French *bloc d'or*, as was proposed by the Government in 1933, when after the abandonment of the Gold Standard by the US dollar France considered that the time

for the international monetary leadership of the franc had come (the instrument was the so-called *bloc d'or* of the countries that kept their currencies linked to the Gold Standard).

The Research Department of the Banco de España remained largely independent from the Government policies, which is explained in part by the autonomy enjoyed by the issuing bank (the Banco de España was a private bank, though privileged, until 1962). This triggered some conflicts. A major controversy was unleashed around interest rates. The Government wanted to reduce them, but the Banco de España relying on its Research Department refused, arguing that the 'cheap money' did not guarantee a healthy economic recovery. The truth is that unemployment became unbearable and the 1936 general elections were won by a Popular Front (broad coalition of the leftist parties). Only at that moment did the Research Department of the Banco de España consider that it had been a mistake not to have radically cut interest rates in the recent past (then, Spanish real interest rates were among the highest in the world) (Banco de España, Servicio de Estudios, 1931-1936; Tortella & García-Ruiz, 2013, pp. 108-114).

But beyond the debatable views of the Research Department, the fact is that since 1935 its existence allowed the creation of the most important Spanish economic database. This database was composed of scattered statistics that were gathered by the department but also of others elaborated by their economists and entirely new ones. It provided the basis for calculating the first balance of payments of the country. The statistician Francisco Jainaga did this by accumulating data from many different sources, as well from a questionnaire distributed among 3,500 exporters and importers and other people related to the matter. The result was the reconstruction of the complete balances of payments for 1931-1934, a milestone in Spanish applied economics. Soon after, Jainaga was killed in the early days of the Spanish Civil War (1936-1939).

During the Civil War, the Banco de España was divided into two, while the Spanish monetary union broke down. The Research Department remained operational only in the territory controlled by the 'national' faction of General Francisco Franco, with José Larraz as chief economist. One of his functions was considering how monetary union would be restored when the war was over. In *Estudio sobre la restauración de la comunidad dineraria española* (1938), Larraz argued that the winners should recognize the credits of the losers, but this should be done in terms of the purchasing power of the two currencies: the 'national' peseta and the republican peseta ('Marxist peseta' in the study). Larraz would be the Minister of Finance who, in September 1939, had to undertake the monetary restoration and it proved very useful for him to have worked previously in the Research Department of the Banco de España.

In the post-war, the Banco de España was under the authority of the Franco dictatorship (1939-1975), but it was not nationalized until 1962. The Research Department continued to operate, with a bank officer, Mariano Sebastian, at the head between 1947 and 1956. Sebastian's economic thought fitted well with the ideology of Franco's New State, willing to exert a larger control over the central bank. They were years of mediocrity, with the role of the Research Department reduced to developing a section of the annual report of the Banco de España on the monetary aspects of the evolution of the Spanish economy. In late 1956, Sebastian was promoted to secretary general of the bank and had the wisdom to choose Joan Sardà as his successor. Sardà was a university professor and former chief economist of the Research Department of the Banco Central de Venezuela. He was an economist from Barcelona who had completed his training at the London School of Economics and the University of Munich, and stood out as a Keynesian and historian of the Spanish economy. In short, the cosmopolitan and brilliant Sardà was the opposite of the low profile civil servant Sebastian. In vain, a professor of the Central University of Madrid, Francisco Sánchez-Ramos, wrote to Franco to warn

about Sardà as a 'professor totally divorced from the national ideology', because of his contacts with Catalan separatists in Venezuela and with dissidents in Spain (the letter is preserved in the Archive of the *Fundación Francisco Franco*, folder 13327).

Sardà headed the Research Department until 1965, introducing completely new approaches in the institution. Since 1957, the annual report of the Banco de España became the sophisticated report that is expected from a central bank, and it was complemented, since 1960, with the publication of a statistical bulletin very useful for economists. Very soon, Sardà gained enormous prestige and was called on to design the stabilization that was needed again by the Spanish economy. Somehow, it was a return to the origins, because the Research Department had been created in 1930, in the midst of the Great Depression, to help in the stabilization of the exchange rate. This time, the question was to set the peseta-dollar parity to enter the Bretton Woods monetary system and put an end to the economic isolation of the country. For the success of the process it was necessary to control inflation that was rampant with fiscal (increased taxes, restrictions on public spending) and monetary (interest rates rises, controls on the credit growth, etc.) measures. In July 1959, a Stabilization and Liberalization Plan was published in the official gazette, as a proof of the good understanding between the Ministries of Trade and Finance and the Banco de España.

During the Cold War, the Franco dictatorship got support from the United States in exchange for allowing the establishing of military bases in Spain, a country with a very interesting geostrategic position. In 1961, the Research Department of the Banco de España was committed to reach an agreement with the World Bank, which was willing to aid Spain, a backward country that had recently joined the international economic institutions. Sardà proposed the Banco de España as the single monetary authority, recovering monetary functions that Franco had entrusted to the Ministry of Commerce (the Instituto Español de Moneda Extranjera performed the external monetary transactions) and the Ministry of Finance (the Dirección General de Banca y Bolsa developed inspection functions on the financial institutions). In order to transform the Banco de España into a true central bank, the institution should be nationalized, strengthened in its functions and, finally, endowed with autonomy from the Government. The Banking Act of 1962 nationalized the bank but there was no progress in all other respects.

In 1965, as a consequence of a ministerial crisis, Ángel Madroñero replaced Sardà as head of the Research Department of the Banco de España. One of his first decisions was to hire Mariano Rubio as deputy head. Rubio was a socialist economist who had found work in the Paris offices of the OECD to be away from the Spanish dictatorship (Tortella, 2015). In 1966, the Research Department created the *Cuerpo de Titulados*, a team of graduates and postgraduates in Economics, most of them trained by Professor Luis A. Rojo at the Central University of Madrid (Complutense University of Madrid since 1970). The relationship was so close that Rojo ended up running the Research Department between 1971 and 1988. They were years of consolidation of the Research Department, with the formation of a collection of studies and publications that are key to understanding the Spanish economy of the period. In 1972, the first book of the Research Department was published: *Una estimación del producto interior bruto trimestral de España, 1958-1971*, written by Julio Rodríguez López, which was a proof of the institution's ability to supplement the data offered by the Instituto Nacional de Estadística, created in 1945 to produce the official statistics.

The importance of the Research Department in the second half of the twentieth century explains that Rubio and Rojo became deputy governors and, then, governors of the Banco de España. With Rojo at the top of the Research Department, 711 confidential documents were recorded, proving the impact that the department made in the modernization of the Spanish monetary policy in those crucial years marked by the transition from dictatorship to democracy and the impact of the oil crises.

Confidential documents were complemented by hundreds of studies and internal statistics that were the basis of the publications offered to the general public, among them the 'blue books' of the Economic Studies series, launched in 1972 with the aforementioned book by Julio Rodríguez. Eight years later, the 'red books' of the Economic History series, run by Pedro Tedde, historian of the department, were added. The interest for the Economic History of the Banco de España has been proverbial and has never waned, outstanding among them being the books devoted by Tedde to the evolution of the institution since its inception in 1782 (Tedde, 1988 & 1999) and some monographic studies (the most recent one has been Malo de Molina & Martín-Aceña, eds, 2012).

In 1988, Rojo left the Research Department to serve as deputy governor and, after a short transition period, since 1992, José L. Malo de Molina replaced him (Malo de Molina would remain in this function until 2015, when he was succeeded by Pablo Hernández de Cos). The Research Department had to pay special attention to the process of monetary union that started with the Maastricht Treaty (1992). As is well known, the process culminated at the beginning of the 21st century with the adoption of the euro, a currency backed by the European Central Bank that has absorbed many of the functions of the national central banks of the 'Eurozone'. The Malo de Molina period has been marked by these events, which have reduced the role played by the Banco de España and its Research Department. The preference for simple econometric models explains that, between 2004 and 2014, only four 'blue books' have been published versus 462 working papers. The Research Department has developed valuable work in the elaboration of statistics (available through the data bank BIEST in (www.bde.es), the writing of the bank's annual report, the managing of the bank's library and the advising to the monetary authorities. In 2001, a group of economists linked to the European Central Bank launched a prize for young scholars called Germán Bernácer Award, which serves as a recognition of the work done by the Research Department since its inception. No doubt, the Research Department of the Banco de España remains as the key reference in its field.

The Research Departments of Banco Urquijo and Banco Hispano Americano

In 1942, Madrid was a city ravaged by the war, but one of its banks, Banco Urquijo, launched the journal *Moneda y Crédito*, to publish the work of Spanish and foreign economists who would bring the light of liberalism to times marked by a momentary triumph of fascism. Of the four articles published in the issue 1, the outstanding ones were those by the Keynesian Germán Bernácer (*La ecuación fundamental del valor del dinero*) and another by the Austrian Luis Olariaga (*Economía y hacienda de guerra*). Shortly after, on 15 June 1944, the Urquijo signed an agreement with Banco Hispano Americano (Hispano), establishing a symbiotic relationship between the two Madrid financial institutions. The Hispano, which led the ranking of the Spanish banks, was a commercial bank with a small portfolio of industrial holdings; by contrast, the Urquijo was a universal bank but with a bias towards the investment in equity of industrial firms. Because of this specialization, it was easy for both institutions to reach an agreement of cooperation without losing independence. The agreement was called *Pacto de las Jarillas* because it was signed in a rural estate near Madrid with that name. One of the consequences of the pact was the creation of the Research Department of the Banco Urquijo (Puig & Torres, 2008).

The Research Department of the Urquijo was established with the mission of gathering information on the economic sectors where the bank's subsidiaries and affiliates were operating, as well as those sectors in the hands of competitors. In those years, the country's industrialization was considered the best way to ensure economic growth and the Urquijo seemed destined to play a key role in it. Under the direction of Julio Tejero, professor of Political Economy and friend of the CEO Juan Lladó, in 1945 the Research Department began to publish *La Economía Española*, an annual report of great interest on the evolution of the Spanish economy that, using a comparative

perspective with other countries, tried to raise awareness of the dangers of following paths leading away from the market economy. Since 1945, the annual report was supplemented with *Boletín financiero*, a bulletin on a monthly basis and less ambitious goals.

A unique feature of the Urquijo led by Lladó was its willingness to finance a variety of intellectual and scientific researches without direct connection with the economy or business. The main instrument was the *Sociedad de Estudios y Publicaciones*, founded in 1947, which gave support to people clearly away from the authoritarian orientations of the dictatorship (Francisco Suárez, Xavier Zubiri, Julián Marías, Ramón Carande, Joaquín Rodrigo, Dámaso Alonso, Emilio García-Gómez, José Antonio Maravall, etc.). For an educated banker like Lladó, contributions by philosophers and writers (and their intangible social values) were as important as those made by economists (and their tangible social values) to create a society where companies promoted by the Urquijo would render private and social benefits. The Research Department of the Urquijo benefited from the collaboration of important Spanish economists such as Julio Tejero, José M. Naharro, Lucas Beltrán or Ildefonso Cuesta-Garrigós.

An institution so committed to industry as the Urquijo, had to feel the attraction of 'Spain's factory', Catalonia, and, in 1962, the Barcelona branch of the Research Department was created, with a specialist in regional economics, professor of Political Economy Ramón Trías-Fargas, at the head. Three years later, in 1965, the Seville branch was opened, under the leadership of professor of Financial and Fiscal Law Jaime García-Añoveros. This branch was more modest than those of Madrid and Barcelona, and its opening is largely explained by the role played by the Andalusian poet José A. Muñoz-Rojas in driving the cultural conglomerate of the Urquijo. Muñoz-Rojas was a close friend of Lladó and had *carte blanche* to interconnect the world of the Economy with the world of Culture. Within the *Sociedad de Estudios y Publicaciones*, he ran a *Seminario de Investigación Económica*, where papers by professors of Economics as diverse as Valentín Andrés-Álvarez, José L. Sampedro or Lucas Beltrán were presented and discussed. Muñoz-Rojas obtained the sponsorship of the Ford Foundation for the workshops in the 1960s and special attention was paid to the introduction in Spain of the Freiburg School and the 'ordo-liberalism'. Internationally renowned masters such as Hayek, Robbins, Shackle or Haberler presented papers in the workshop. In late 1973, the Research Department of the Urquijo called for the First Meeting of Research Departments, which coincided with the First Meeting on Regional Studies and allowed the creation of the Spanish Association of Regional Science, which still operates today (Banco Urquijo, 1975).

Nothing similar can be said about the Research Department of the Hispano, which after the aforementioned *Pacto de las Jarillas* (renewed in 1964 and 1973), had chosen to go deep in its commercial banking line of business. In this type of banking risk is less concentrated and less exposed to the immobilization of resources caused by industrial investments. Therefore, it is reasonable that commercial banks have more interest in Microeconomics than in Macroeconomics, and this is reflected in weaker Research Departments. All in all, the Hispano's Research Department made some remarkable contributions. In the 1950s, the department followed the course of the 'American aid', a question in which the intervention of the CEO of the Hispano, Andrés Moreno, had been decisive. In its critique of the *Pactos de Madrid* (1953) between General Franco and President Eisenhower, the Communist Party did not hesitate, in June 1956, to use as a source the statistics of the Hispano's Research Department on the subject (Comité Central del Partido Comunista de España, 1956). The statistics had been published in the first issue of *Situación Económica en*, a yearbook not without interest that came to light between 1956 and 1966. In the great crisis of the 1970s and 1980s, macroeconomic events gained new importance and the working papers by the Research Department

provided the critical view of who is about to be destroyed by an economic tsunami. These studies were the base of *Pulso Económico*, a publication for the media. It is worth mentioning also an ambitious study on the Input-Output Table of the Canary Islands (Banco Hispano Americano, Servicio de Estudios, 1978).

The solution to the problems could come from entering the European Economic Community (EEC), which occurred in 1986, something that was watched with hope by the Research Department. But the fate of the Madrid banks was cast. Since 1985, the tandem Hispano-Urquijo was controlled by the Government. In the process of disinvestment, Claudio Boada, the chairman appointed by the Government, would not hesitate to put an end to the Research Departments of both institutions and deliver *Moneda y Crédito* to the Banco de España, losing in this way its characteristic 'virginity': the journal had been truly open to all without interference from outside the academic world (Raga, 2009).

After overcoming some difficulties, the Urquijo was taken over by Banco Sabadell, while the Hispano would merge with another Madrid bank, Banco Central, in 1991 to form Banco Central Hispano (BCH). In 1999, the BCH was absorbed by Banco Santander. As we shall see in the next section, the Central had, since 1954, a true Research Department and the BCH decided to keep this tradition by appointing Fernando Fernández as head in 1996.

The Research Department of *Banco Central*

Banco Central was founded in 1919 by a group of banks and bankers, led by the Basque Crédito de la Unión Minera (CUM), with the aim of participating in the process of consolidation of Madrid as the Spanish financial center that was taking place since 1900. In 1925, the CUM suffered a crisis and was liquidated, putting Central in danger. The solution was found in the reinforcement of the bonds with the existing political regime, the dictatorship of General Miguel Primo de Rivera (1923-1930), who was regarded with suspicion by the liberal elite that dominated private banking in Spain. The problem was that after the dictatorship the monarchy fell and the Second Republic (1931) was proclaimed. Immediately, Central was harried by the new political power, while it was severely affected by the industrial crises of those years. One of the measures taken to address the problems was to create in 1934 a Research Department, with the first republican governor of the Banco de España, Julio Carabias, as head. In March 1936, Carabias became delegate from the Government of the Popular Front in the Consejo Superior Bancario (a high council to deal with banking issues) and, being aware of the precarious situation of the Central, prepared it to be controlled by the Banco de España (see Tortella & García-Ruiz, 2013, for more details of the Spanish financial history).

The outbreak of the Civil War prevented the Central from being taken over. The ultimate solution to the problems was sought in the strong leadership of a banker and conservative politician, Ignacio Villalonga, who really laid the foundations of a new Central. Villalonga supported General Franco during the Civil War, because the 'national' faction guaranteed public order, but in the post-war period Villalonga asked for a prompt return to parliamentary monarchy. This helps us to understand Villalonga's choice in the early 1950s of Jesús Prados-Arrarte as chief economist of the new Research Department. The curriculum of Prados-Arrarte (Bilbao, 1909-Madrid, 1983) showed him as a person clearly opposed to the values defended by Franco's New State. Prados-Arrarte had been imprisoned during the dictatorship of Primo de Rivera, had participated in the republican uprising of Jaca (1930) and had received the appointment of '*capitán de estado mayor*' (high rank officer) of the republican army during the Civil War, becoming entitled to the Medal of Duty in June 1938 due to war operations. His battalion during the war had been one organized by the Federation of Education Workers of the socialist union (Unión General de Trabajadores), because Prados-Arrarte was at the time professor of Political Economy and Public Finance

at the University of Santiago. In the post-war, Franco's dictatorship allowed the reincorporation of Prados-Arrarte to the university chair, but declared him unable to be president or dean of his university. Prados-Arrarte's reponse was to leave for Latin America to work in economic research in Argentina and Chile (he worked at the ECLAC) (Prados-Arrarte, 1979; Prados-García, 2004; Martín-Rodríguez, 2010).

In 1954, Prados-Arrarte returned to Spain and took charge of the Research Department of Banco Central. In the department, he promoted the publication of a yearbook, Estudio Económico, which enjoyed wide circulation. The name Estudio Económico resembled that of the United Nations' publications that Prados-Arrarte had known in America. This work was accompanied by the publication of a dozen books and numerous articles (Prados-Arrarte, 1958 & 1965, are particularly interesting). But Prados-Arrarte's participation in the 'conspiracy of Munich' (meeting of European democrats in that German city) returned him to exile in 1962-1964, which was used by his political enemies to try to expel him from the Faculty of Law in the Central University of Madrid (his position in the University of Santiago was being transferred to the Central University). A student protest prevented this manoeuvre. Finally, Prados-Arrarte kept his chair in the Central University and, after the dictator's death, could unleash his political vocation launching the Partido Socialista Democrático Español (PSDE), of which he was vice-president. The lack of transparency within the PSDE would lead him to resign and join the Partido Socialista Obrero Español (PSOE) shortly before general elections of June 1977, the first democratic elections since 1936.

The linkage of Prados-Arrarte with the banking industry was a problem for his political career. For many, the banking industry had been a pillar of the dictatorship and Prados-Arrarte's socialism was seen as opportunistic. Faced with these accusations, Prados-Arrarte noted that 'adherence to socialism is not proved with a card but with a socialist life' and recalled his imprisonments and exiles. His work for Banco Central (where he retired in 1970) was explained saying that with the dictatorship his work in the public sector had been very difficult. 'Where would I perform my duties as an economist in those conditions? Of course, in the private sector, and more easily in a sector like banking, which hires more economists than others', explained Prados-Arrarte. If he had opposed the nationalization of banks it had been because he agreed more with the German, British, Austrian and Swedish socialists than with the French or Italian. With the nationalized banks it would be easy to have a 'Matesa in the left', that is, a scandal induced by a privileged use of credit by some company (as had happened with Matesa, a firm supported by the right near to Opus Dei) (Prados-Arrarte, 1979).

The nationalization of private banks was one of the programmatic points of Falange Española (the Franco party) that had been discarded in the Banking Laws of 1946 and 1962. In the 1960s, the banking industry was widely criticized because of its high profits and its control of the largest companies. The left and Falange agreed that the socialization of the banking business through nationalization was needed. In December 1967-January 1968, the pages of a daily newspaper, Madrid, hosted a discussion on the topic between Jesús Prados-Arrate and Ramón Tamames, professor at the Autonomous University of Madrid and a shadow member of the Communist Party (the discussion was reproduced in *Cuadernos para el Diálogo*, April 1968, through a Falangist proposal to nationalize the banks). Both were defined by the newspaper as 'prestigious economists', but differed a lot in their positions. Prados-Arrarte defended banks from the exaggerated critiques that had converted them into the 'big scapegoat' for the problems of Spain, while Tamames, a disciple of the well-known Falangist economist Juan Velarde, proposed nationalization as the best solution to give more strength to Spanish economic development. As Prados-Arrarte said in 1979, what happened more than ten years before had been the controversy between a socialist (him) and a communist (Tamames).

Prados-Arrarte's work had a literary quality that earned him election as academic of the Royal Spanish

Academy. He took up his chair on 28 November 1982 with a speech entitled *Don Álvaro Flórez Estrada, un español excepcional (1766-1853)*, which was answered by the academic Alfonso García-Valdecasas. In the speech, Prados-Arrarte showed his admiration for the egregious liberal and constitutionalist Flórez Estrada, who 'for his country suffered exile and persecution'. The truth is that the Flórez Estrada legacy was much more important than the Prados-Arrarte legacy. Alfonso Escámez, the chairmen that succeeded Villalonga in 1973, kept the Research Department alive, but with a more internal character. In 1991, the Central merged with the Hispano, and it was decided that the new institution, BCH, should be endowed with a Research Department. In 1997, an economist that had worked for the International Monetary Fund, Fernando Fernández, was selected as head of the institution. Fernández shared with Prados-Arrarte the fact of having spent years abroad working for international organizations, but their political orientations were radically different: Prados-Arrarte was a '*cepalino*' (economist near to the 'dependency theory' posed by Raúl Prebisch in the ECLAC or CEPAL in Spanish), while Fernández was greatly influenced by the 'Washington consensus' and neoliberalism.

In mid-2001, with BCH taken over by Banco Santander, a conflict erupted when the conservative Government of José M. Aznar was very upset with the support granted by the Research Departments of the two big banks (BBVA and Santander) to a tax reform proposal of the PSOE. Everything seemed amazing in this episode. The socialist proposal consisted in reducing the tax system to a single rate and a minimum exempted income. Naturally, the neoliberal Fernández liked the idea, and showed in public his support, but the head of the BBVA Research Department, the 'third way' socialist Miguel Sebastián spoke in similar vein. The reaction of Emilio Botín III, chairman of the Santander, was to dismiss Fernández and transform the Research Department into an institution for supporting the managers, with very little external presence, following the house tradition. Alejandra Kindelán would be responsible for the department thereafter.

The Research Department of *Banco de Bilbao*

In 1954, a young man from Biscay of 25 years of age, José A. Sánchez-Asiaín, with studies completed in Deusto University (Bilbao) and Central University of Madrid to obtain a PhD degree in Economics joined the new Research Department of Banco de Bilbao. Two years later, he was already the deputy head of the department; then, between 1959 and 1962, he would be the head. These were years in which Sánchez-Asiaín also taught at the School of Higher Commercial Studies of Bilbao, the University of Valladolid and Deusto University, allowing him to obtain a professorship in Public Finance and Tax Law at the University of Valladolid in 1962. In that year, Sánchez-Asiaín decided to accept an invitation from the new Minister of Industry, Gregorio López-Bravo, to be his *secretario general técnico* (main assistant on technical issues), with a central role in the *planes de desarrollo* (developmental plans) of the Government. López-Bravo called Sánchez-Asiaín because he was impressed by the studies on national income and its provincial distribution that the Research Department of the Bilbao had initiated in 1957 (on 1955 data).

To strengthen the studies on territorial distribution of income, the Research Department hired Julio Alcaide. Alcaide was an economist born in 1921 in Cádiz who, since 1945, worked in the *Servicio Sindical de Estadística*, an agency under the Ministry of Labour that produced very detailed statistics on work centers in Spain. Between 1962 and 1991, Alcaide would coordinate the works of the Research Department on Spain's national income and its provincial distribution, which he would continue in the following bank institutions: Banco Bilbao Vizcaya (BBV) and the current Banco Bilbao Vizcaya Argentaria (BBVA). Alcaide became deputy head of the Research Department, a job that he combined with his work at the Instituto Nacional de Estadística, where he was part of the team that developed the Spanish National Accounts between 1954 and 1975. During this period he was also very active in developing the Input-Output Tables for 1954, 1958, 1962, 1966, 1970 and 1975.

In 1966, Sánchez-Asiaín left the Administration and returned to Banco de Bilbao, where he would be deputy general manager (1966-1968), general manager (1968-1970), general manager and director (1970-1974) and chairman of the Board of Directors (1974-1988). During all these years, the management of the Research Department was entrusted to Luis A. Lerena, an *economista del Estado* (economist working for the Administration) that Sánchez-Asiaín had met at the Ministry of Industry. Lerena and Sánchez-Asiaín shared many things, for example, their dedication to the University (Lerena taught at the Complutense University and the University of the Basque Country). The truth is that Lerena, with his characteristic modesty, transformed the Research Department into the best of its class in the private realm. Apart from the renowned collection of works on national income and its territorial distribution, the department edited an annual report (*Informe Económico*), two well-known journals, *El Campo* (1967-1996) and *Situación* (1973-1999), and two 'social balances' for the period 1978-1981, where the bank tried to show its commitment with society.

1978 witnessed the publication of La Renta Nacional de España y su distribución provincial. Serie homogénea, 1955-1975, which was a milestone in Spanish applied economics. The Instituto Nacional de Estadística began in the 1970s to make similar statistics, but it was generally accepted that Banco de Bilbao's statistics were superior. Subsequently, the series was prolonged until 2001, when it was considered that the National Accounts were already good enough. In 1980, two articles published by the scholars of the Research Department in Situación (issues 2 and 7, respectively) wanted to complement the information on Spanish macroeconomics with an exploration of the regional financial flows. This information was completed in Banco de Bilbao (1982). The 1978 Constitution had established Spain as a state with 'autonomous regions' (a variant of the federal state) and there was a strong debate on the role of banking in capturing resources in some regions to invest them in others. The Research Department wanted to contribute to the debate with quantitative information that was not available in official statistics (García-Ruiz, 2003 & 2007)

In the following year *La distribución provincial del crédito en España* was published. The data presented in this book on regional financial flows supported the idea that 'the actions of the Spanish core banking system during the 1970s had not only contributed to widen existing spatial imbalances but, on the contrary, our results suggest the opposite, since the provinces that have reached a higher level of development are those that provide financial resources to the rest' (Rodríguez-Saiz et al., 1981, p. 434). The methodology proposed in this book was similar to that of the *Situación*'s articles: to compare the share of each region in the total volume of deposits with their share in the total volume of loans, seeking to characterize the region as one with a surplus or deficit of financial resources. In both studies, the data came from the internal sources of the financial institutions that sponsored them (Banco de Bilbao for the articles and the *Rumasa* holding for the book).

Were the results of the two works similar? Not at all. By 1973, there was only agreement in the sign of four regions, which rose to six by 1978, but with noticeable differences in the value of the coefficients. In the case of Madrid, the divergence was extreme: for the researchers of Banco de Bilbao it was clearly an investment region, while for the researchers of *Rumasa* it was a region that transferred financial resources in large quantities. Overall, the results of the Banco de Bilbao team were consistent with other available evidence. For instance, it was difficult to believe that traditionally surplus regions like Castile, Extremadura or Galicia had enjoyed extraordinary investment behaviour in the 1970s, as was stated in the *Rumasa* study. Suspiciously, the conclusions of this book were in line with what the businessman José M. Ruiz-Mateos, *Rumasa*'s owner, had been saying in the press. The Research Department of Banco de Bilbao, once again, had proceeded with great objectivity, even when the results proved that the Basque banks showed preference for the interests of the Basque Country, which was not politically correct for a Spanish national bank.

In 1988, Banco de Bilbao merged with Banco de Vizcaya to give birth to Banco Bilbao Vizcaya (BBV). The next step took place in 1999 when BBV merged with the holding of the public banks, Argentaria, to create the current BBVA. In November 1996, an economist with a PhD from the University of Minnesota, Miguel Sebastián, replaced Lerena at the head of the Research Department. The following year, David Taguas was appointed deputy head. Both Sebastián and Taguas ran the department through the turbulent years that, as has been said, led to the creation of the BBVA, an institution where the leadership of Francisco González, supported by the conservative Aznar Government, meant the displacement of the families that had always dominated the Basque financial institutions. Sebastián and Taguas, who had received support from those families and had a social democratic political orientation, would soon enter in conflict with González. In 2003, Sebastián would be replaced by José L. Escrivá and soon afterwards began a political career with the PSOE. When, in 2006, the Rodríguez Zapatero socialist Government established its own Research Department, it was called the Economic Office of the President, and Sebastián and Taguas were the key men.

Escrivá, a monetary economist trained in the Banco de España and the European Central Bank, headed the Research Department between May 2003 and January 2011, when chairman González entrusted to him the direction of the relationships with governments and multilateral agencies (sovereign debt) and appointed Jorge Sicilia as his successor. Sicilia had been chief economist of the Mexican subsidiary Bancomer and now would be chief economist of BBVA Research (new brand name of the Research Department). In 2014, Escrivá would return to the Administration, being appointed chairman of the Independent Authority for Fiscal Responsibility (a new public institution that had been required in 2012 as a condition for the rescue of the Spanish financial system with European funds). Sicilia continues today as head of BBVA Research, enjoying the full confidence of chairman González, a man with whom he had worked in the past in Argentaria.

It is hard to imagine that in a Research Department with this profile there can arise conflicts like that of 2001 that has been outlined above: the support for an idea of tax reform proposed by the political opposition provoked the immediate cessation of the head of Banco Santander's Research Department (then, still BSCH), while Miguel Sebastián remained in office two years more, albeit in a very uncomfortable position.

Sicilia has kept his department out of the Spanish political arena. BBVA is a global player and, in consequence, BBVA Research should pay special attention to the globalization process. Thus, BBVA Research has joined a network of more than 1,000 researchers from 38 countries known as CESifo, as it arose from a joint initiative of two German institutions: Ifo and the Center for Economic Studies at the University of Munich. A group from CESifo known as EEAG prepares each year a report on the European economies that, of course, ends with forecasts for the next twelve months. The presentation to the media of this report is an act of great importance for BBVA Research.

Other research services in financial institutions

In the 'developmental' years (the 1960s), when the industrialisation of Spain advanced at top speed, recovering the time lost in the past, all financial institutions planned to establish a Research Department to have their own data and analysis of the rapidly changing macroeconomic environment. However, having a Research Department was expensive and out of the reach of most of the institutions. It was necessary to spend a lot of money in material and human resources to form teams that were able to provide useful information for internal departments, but also to offer innovative studies to the society that could contribute to enhancing the image of the institution.

Banco Popular established a Research Department in 1962, but with little endowment and already in the following year it was looking for collaboration with Banco Urquijo's Research Department. In 1967, a new Department of Financial Studies was

set up, 'with specialists in financial analysis, whose main target is to provide to managers, customers, and institutions requesting this analytical services and detailed reports on Spanish listed companies'. This department joined the *Groupement Européen d'Etudes Financières* (GEEF), composed of banks of several countries for the exchange of information and the development of studies by branches of the economy at the European level. At last, Banco Popular developed a Research Department more typical of an investment bank than of a commercial bank (Tortella, Ortiz-Villajos & García-Ruiz, 2011).

The limitation of resources that affected Banco Popular was not present in the case of Banco Español de Crédito (Banesto), the undisputable leader of the Spanish private banks during thirty years (1949-1977), which never had a true Research Department, but a *Gabinete Técnico* (Technical Cabinet) between 1965 and 1993, oriented exclusively to producing the *Anuario del Mercado Español*, a yearbook that is extremely useful for marketing studies. The initiative came from José M. Fontana-Tarrats (1911-1984), a man linked to the Catalan textile bourgeoisie who in the 1930s joined the Falangists, with whom he fought in the Civil War. Then, between 1943 and 1954, Fontana-Tarrats accepted positions in the New State, but from 1955 onwards he devoted himself entirely to his work as secretary of the Chamber of Commerce of Madrid and the Spanish Antitrust Court. Fontana-Tarrats was a 'Catalan of Franco' (Thomàs, 1997), which earned him quite a few enemies in Catalonia, but the truth is that he deserves recognition for his effort to publish the first *Atlas commercial de España* (1963) and two pioneering works on the importance of 'commercial culture': *Defensa y crítica del comercio* (1965) and *Comercio y distribución* (1965).

Problems of mismanagement led Banesto to it being taken over in 1993 by the Banco de España, which marked the end of the *Anuario del Mercado Español*. However, the project was continued by the Lawrence R. Klein Institute, affiliated to the Autonomous University of Madrid, with the sponsorship of La Caixa. Thus, in 1997 the *Anuario Comercial de España* saw the light. Both yearbooks offered comprehensive information on municipalities, provinces and regions of Spain. It should be noted that the institute of the Autonomous University took the name of Klein as a tribute to the Nobel Prize economist of the same name who had popularized the predictive macroeconomic models, which have become very characteristic of the Research Departments in recent times. Since 2001, the yearbook was named *Anuario Económico de España*, the flagship publication of La Caixa Research.

The case of La Caixa, always leader among the Spanish savings banks, is singular because the rest of these institutions confided their economic research activities to the *Fundación de las Cajas de Ahorros* (FUNCAS), as a kind of collective research department. FUNCAS emerged in 1979 within the *Confederación Española de Cajas de Ahorros* (CECA), the employers' association of the savings banks, when these institutions began to compete openly with private banks and to spread beyond their region of origin. The great Spanish economist Enrique Fuentes-Quintana gave FUNCAS a big boost and today the 'FUNCAS Panel' collects the forecasts of 19 research departments that, following Klein, have turned the economy into a science oriented to make predictions on the short- and medium-term. A revision of the Panel found strong differences in predictions that are never explained satisfactorily. If we want to go further, we can consult *Diana*, a publication of the business school ESADE that contrasts the forecasts with the real data for 24 national and international institutions (Annex II), to conclude that the error margins are very large. An example: the Spanish Research Departments were completely unable to foresee the Great Recession (Annex III).

Conclusion

The first Spanish Research Department was created by the Banco de España in 1930, following the model of the Banque de France. The chief economists were Olegario Fernández-Baños and Germán Bernácer, who had done doctoral studies abroad. The department proved its usefulness

providing new statistics (the first Spanish balance of payments) and analysis of true interest to understand the impact of the Great Depression on the Spanish economy. Then, during the Civil War, José Larraz studied in the department the formula to restore the monetary union that had been broken in wartime, which was applied by him when he was appointed Minister of Finance in 1939. Neither Larraz nor the heads of the department Joan Sardà (1956-1965) and Luis A. Rojo (1971-1988) were in line with General Franco's authoritarian beliefs, but university studies of Economy were very recent in Spain (they had begun in 1944) and there were not many alternative candidates available.

Following in the footsteps of the Banco de España, the Banco Urquijo in 1945 and Banco Central and Banco de Bilbao in 1954 were the first to create their own Research Departments. The Urquijo department worked in a collective way, but it was always favourable to pre-war liberalism, so it confronted Franco's interventionist orientations. In contrast, the Research Department of Banco Central had a clear leader, Jesús Prados-Arrarte, a social democratic economist who admired the work of Raúl Prebisch at the ECLAC. Unjustly, Prados-Arrarte is remembered as an immoderate defender of the big banks, simply because he opposed their nationalization in the debate stirred up in the 1960s by Falangists and communists that pushed together in this direction. In the case of the Bilbao, the Research Department received a boost from José A. Sánchez-Asiaín, a man who, like Luis A. Rojo at the Banco de España, moved upwards from the head of the department to the chairmanship, which gives us an idea of the importance granted to Research Departments in the second half of the twentieth century. Among the private ones, the Research Department of Banco de Bilbao was outstanding because of its long lasting contributions to the regional economic history of Spain due to the hard work of economists such as Julio Alcaide or Roberto Álvarez-Llano (see for instance Alcaide, 2003 or Álvarez-Llano, 1986).

Interestingly, the top leaders of the Spanish private banks, Hispano and Banesto in the twentieth century and Santander in the twenty-first century, did not boast a powerful Research Department. But this conundrum has an explanation. Hispano relied on the Research Department of Urquijo, to which it was attached by an agreement from 1944 (*Pacto de las Jarillas*), while Banesto was not really absent because it was able to promote the publication, between 1965 and 1993, of a yearbook of extraordinary interest for marketing studies, the *Anuario del Mercado Español*. In its cascade of takeovers, Santander inherited the Research Department of Banco Central Hispano, but, after a conflict in 2001 with Rodrigo Rato, the vice president in charge of the economic issues in the conservative Government of José M. Aznar, the department was dismantled and transformed into an office for internal use, reducing its external role mainly to launch forecasts about the evolution of the macro data. That conflict was also suffered by BBVA (born from an initiative of Sánchez-Asiaín, who was the first to search for the creation of mega-banks in Spain), but after a period of instability the Research Department seems to be regaining vigour nowadays.

The conundrum of Banco Santander found its explanation in the idiosyncrasy of the institution. Emilio Botín II (1950-1986) always backed the medium-size banks, but his son, Emilio Botín III (1986-2014), thought the opposite and managed to create the current mega-bank Santander. Because of its size, the Botín II institution did not really need its own Research Department; then, the Botín III epoch was characterized by the replacement of the macroeconomic approach by the microeconomic one, which was also the most suitable for the typical small loans of the new Santander. His daughter, Ana P. Botín, created an efficient Department of Risks in Banesto, which she presided over when it fell under Santander's control, to the point that in 2008 its Internal Rating Based (IRB) model of credit risk was adopted by the Santander Group. The main contribution in this field was due to José M. Nus, a manager very

close to Ana P. Botín in her successive chairmanships (Banesto, Santander UK, Santander) (García-Ruiz, 2013). However, Santander is going to face increasing difficulties to be a global bank if it does not pay more attention to Macroeconomics, and here the Research Departments are crucial.

Other financial institutions such as savings banks and insurance companies have been characterized by their specialization and their small size, and when they felt the need for Research Departments they looked for a cooperative solution: FUNCAS (1979) for the savings banks and ICEA (1965) for the insurance companies. However, the largest institutions, such as La Caixa and Mapfre, soon realized that they should have their own Research Departments and today they are making them stronger. Recently, in 2013, Mutua Madrileña, an insurance company that wants to contest Mapfre's leadership, has created a new Research Department, with the economist Conrado Espí at the head. It seems that after the failure of the extreme microeconomic approaches, of neoliberal inspiration, eyes are turning to Macroeconomics (and to Keynes) with the aim of not losing sight of the horizon and keeping a complex view of things, and here the Research Departments are destined to have a great future. This move coincides with the creation of true historical archives and libraries where the rich statistical and analytical materials produced by the Research Departments in the past can be preserved. This is good for the scholars, good for society and good for the financial institutions.

Table 1 - The Most Significant Financial Institutions in Spain, 1920s-1975 (% Deposits in their sector) and 2012 (% total assets)

	Private banks (groups)					Savings banks					All
	1922	1934	1947	1975		1928	1940	1955	1975		2012
Banesto	7.0	17.2	21.2	14.2	**La Caixa**	17.7	25.7	28.1	14.8	**Santander**	19.0
Central	7.0	9.4	14.9	13.2	**Madrid**	5.3	3.6	3.2	6.8	**BBVA**	15.0
Hispano	21.6	23.2	28.5	12.8	**Barcelona**	12.1	9.5	10.1	5.4	**La Caixa**	12.0
Bilbao	12.0	12.1	9.6	9.8	**Zaragoza**	2.9	4.6	6.0	5.4	**Bankia**	12.0
Vizcaya	7.0	8.9	8.4	6.9	**Valencia**	5.7	4.9	4.0	4.5	**Sabadell**	6.0
Santander			2.5	6.0	**Bilbao**	10.5	6.0	3.7	2.8	**Popular**	6.0
Popular			2.0	4.3	**Guipúzcoa**	7.1	5.6	4.0	2.8	**Libercaja**	4.2

Sources: Tortella & García-Ruiz (2013), p. 221.

Table 2 - Institutions included in DIANA ESADE (2015)

AFI	CEPREDE (Autonomous University of Madrid)	Intermoney
Banco de España	ESADE	La Caixa
Bankia	European Commission	OECD
BBVA	FUNCAS	Repsol
Catalunya Caixa	Flores-de-Lemus Institute (Charles III University)	Santander
CEEM (King Juan Carlos University)	ICAE (Complutense University)	Solchaga Recio & Associated
CEMEX	IEE	Spanish Government
CEOE	IMF	The Economist

Source: ESADE (2015).

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Chapter 4

FRASER: economic data and information preservation project at the Federal Reserve Bank of St. Louis

Katrina Stierholz[68]

FRASER® (Federal Reserve Archival System for Economic Research) at https://fraser.stlouisfed.org is a digital library and archive of economic, financial, and banking materials documenting the Federal Reserve and U.S. economic and monetary history. The Federal Reserve Bank of St. Louis developed FRASER primarily to serve economic researchers, but also educators, historians, and scholars from other disciplines. FRASER contains materials from a variety of sources—archives, government records, government publications, data publications, Federal Reserve Bank publications, and other Reserve Bank content (such as Bank presidents' speeches). Major economic data publications from the U.S. federal government are included in FRASER, as are lightly held Federal Reserve materials such as speeches of policymakers, statistical releases, and archival material from the Board of Governors. FRASER also offers a large and growing collection of unpublished archival materials.

Background

The Federal Reserve Bank of St. Louis created FRASER in 2004 when it began digitizing historical economic statistical publications produced by the U.S. government and the Federal Reserve System. The initial focus was to capture the many 'vintages' of economic data that have informed policymaking over time. The data come from statistical publications such as the *Survey of Current Business*, *Banking and Monetary Statistics*, and the most well-known statistical releases of the Fed's Board of Governors. FRASER expanded with the addition of monetary policy documents, including archival materials from the precursors to the Federal Open Market Committee (Open Market Investment Committee and the Open Market Policy Conference), materials from the Federal Open Market Committee, minutes from the Board of Governors (a separate entity from the FOMC), speeches of FOMC participants (Board governors and Reserve Bank presidents), Reserve Bank publications, and congressional hearings related to monetary and economic policy. Through partnerships with other Federal Reserve Banks, FRASER has given the public access to historical Federal Reserve data, publications, and other communications that previously were not widely available.

FRASER contains three major types of materials: (1) economic data, policy, and analysis produced by the U.S. federal government, (2) publications and other materials produced by the Federal Reserve System, and (3) significant relevant archival materials from a variety of monetary and economic policymakers and institutions across the United States – both personal papers and government records.

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Materials from the Federal Government

Economic data publications produced by the U.S. federal government are distributed through the Federal Depository Library Program.[69] For example, the Bureau of Labor Statistics' (BLS) *Employment and Earnings* and the Bureau of Economic Analysis' (BEA) *Survey of Current Business* have been printed and relatively well-distributed to and maintained by depository libraries. The preservation of this content has been relatively smooth, although these agencies themselves have not engaged in mass digitization. The economic data publications originally produced by the federal government are, indeed, relatively easy to find in academic libraries; so, although FRASER provides easy digital access to them, they are already widely available.

FRASER contains the major economic statistical publications produced by the U.S. federal government—such as the *Survey of Current Business*, *Retail Prices, Economic Report of the President*, the *Budget of the United States*, and the *Annual Report of the Comptroller of the Currency*. As noted above, these U.S. government publications are held by nearly all academic libraries.

Materials from the Federal Reserve System

Publications and data

The Federal Reserve is not wholly part of the government and hence is separate from their publication and distribution process. The Board of Governors is a federal agency. The 12 Banks are private corporations, each responsible for a geographic 'district'; each Bank president participates in the decision-making of the Federal Open Market Committee, along with the Board governors.

Federal Reserve materials are somewhat more difficult to locate in libraries than government publications. As an independent agency, the Federal Reserve is exempt from the law requiring U.S. federal agencies to participate in the Federal Depository Library Program; and neither the Board of Governors nor the Reserve Banks have participated. Federal Reserve materials were instead distributed by mail to anyone who made the request, but they were not part of the standard government distribution program. The collection and availability of these materials in libraries is less comprehensive, and FRASER provides access to many of them.

The Board of Governors and the Federal Reserve Banks all have separate distribution channels for their own publications. The Board's *Federal Reserve Bulletin* (a monthly publication with policy pronouncements, legal updates, and data) was widely distributed to libraries and can easily be located by users. It is also available on FRASER.[70] Other publications of the Board of Governors include the Annual Reports, Banking and Monetary Statistics, and All Bank Statistics. These were widely distributed and well-known in the economic community, and all are available in FRASER.

FRASER includes studies conducted by the Board on various matters relating to central bank operations: open market operations, discount window lending, bank management, postwar economic studies, and banking studies. Many of these publications were not distributed to libraries and so are only now available to researchers outside the Federal Reserve System.

Other statistical releases of the Board of Governors were also not widely distributed. They are held in a few libraries and not well known or widely collected. FRASER now contains a large (but not entirely comprehensive) collection of Federal Reserve Board statistical releases (web reference: https://fraser.stlouisfed.org/series/?id=1487). As part of a digitization project for the Fed's centennial, the Board made a concerted effort to digitize as many of

69 The FDLP has existed for over 100 years. The program provides free government publications to libraries across the country and requires, in turn, that libraries not discard material until five years have passed, at which time the materials must be offered to other libraries before discarding them. Individual states have similar programs, as does the United Nations.

70 The Board also is responsible for the release of information pertaining to the Federal Open Market Committee and statistical releases of economic data. Those documents are discussed below.

the statistical releases as were available in the Federal Reserve libraries and archives. The Board provided the digitized statistical releases to the FRASER team to post on FRASER.[71] Over 90% of the statistical releases were available for digitization, all of which have been scanned and posted. The Board's statistical releases were published in print form, but they were not widely available to researchers until their posting on FRASER.[72]

There are some series that were published very briefly—perhaps only a few years—before being discontinued. Others have been published for the entire history of the Federal Reserve. A guide to the history of statistical releases, published by Sian Seldin at the Board of Governors, is included in FRASER (Seldin, Sian, 2011). This guide is an invaluable resource for following the changes in statistical releases over time and understanding the relevant relationships among them. In addition, although Seldin's (2011) history was considered complete when it was published, the centennial digitization project brought to light early releases that appear to have either been incorporated into other releases or existed just for a few years.

In addition to the Board's publications, the Federal Reserve Banks also self-published data and other information in various reports and had their own distribution channels that were built and maintained locally. Few large academic libraries hold a comprehensive collection of the Federal Reserve Bank publications; the earliest publications are especially difficult to find. While the most popular Bank publications (the economic reviews) are distributed sufficiently well for researchers to locate, many of the Banks have released local economic data publications that are much less widely held.

Another piece of Federal Reserve history is the requirement for Reserve Banks to submit 'regular reports' to the Board of Governors. This requirement is part of the Federal Reserve Act and still in effect—section 4, subsection 20. The information from these reports was summarized and published in the *Federal Reserve Bulletin.* The full reports were then also published by each District and became the basis for monthly reports on District business conditions.[73] These monthly reports grew to become the Reserve Banks' economic reviews. For instance, the Federal Reserve Bank of St. Louis began publishing a *Monthly Report on Conditions in District No. 8* in 1917. The initial issues contained accounts of economic activity (e.g., from the March 1917 issue: 'The January fur sale in St. Louis was approximately three times the January 1916 sale, while prices realized averaged approximately ten percent above those a year ago') but no data tables. By 1920, the St. Louis Fed was beginning to publish data—some from other sources (e.g., St. Louis National Stockyards, Mercantile Exchange) but also data from reports of member banks.[74] The reports of the different Districts varied in terms of content, which makes them less useful for comparing economic conditions across Districts. However, they offer insights about local economic conditions and concerns at the time.

71 Unfortunately, some releases were microfilmed as part of an earlier preservation project and the quality of the microfilm in some cases was poor. After microfilming, many paper copies were discarded. In other cases, the quality of the digitized copy reflected the normal wear and tear over time on the paper issues. So, the quality of the digitized copies is not ideal; a greater concern is that not all issues and not all titles have been found.

72 For instance, Park and Richardson pull together a statistical history of retail trade from 1919-1939, using data published in the Federal Reserve Bulletin (1919-1939), and data prepared for a statistical release (1930-1939) that was not widely distributed (they found a copy in the Board's library). This series gives economists and other researchers more information on consumption during the Great Depression. With the addition of statistical releases on FRASER, series that were formerly only available in hard copy in the Board's library are now also on FRASER. http://www.nber.org/papers/w16617.pdf

73 For a summary of how the publication of these reports began and their transition to District publications, see the January 1919 issue of the Federal Reserve Bulletin, https://fraser.stlouisfed.org/scribd/?item_id=20585&filepath=%2Fdocs%2Fpublications%2FFRB%2F1910s%2Ffrb_011919.pdf&start_page=13

74 For an early version, see the January 1920 issue at: https://fraser.stlouisfed.org/scribd/?item_id=23859&filepath=/docs/publications/frbslreview/rev_stls_19200126.pdf#scribd-open

Policy-related content

FRASER also contains policy-related content that complements a multitude of economic data series. Most of this is (i) material from the Federal Open Market Committee (and its predecessors), (ii) speeches and testimony of FOMC participants, and (iii) minutes of the Board of Governors.

FRASER includes all of the minutes, transcripts, and accompanying material for Federal Open Market Committee meetings. These FOMC meetings are the major events for U.S. monetary policy-making. At each FOMC meeting, each Federal Reserve Bank president and Federal Reserve governor participates; a rotating subset of presidents vote, along with all governors. The minutes for these FOMC meetings represent monetary policy discussions and decisions at particular moments in time and provide context for the economic conditions at the time.

The presidents of the Federal Reserve Banks give speeches describing the current economic situation and their view of the policy options in front of the FOMC. Their positions and perspectives are different from those of Federal Reserve Board governors. Reserve Bank presidents are more closely connected with regions of the United States and less tied to Board policy, which frees them to offer a broader range of policy choices based on the current economic situations they observe and also offer policy options that reflect their independent views and the research of their staff economists. For both the Banks and the Board, the earliest speeches were distributed as press releases and held by the libraries within the Federal Reserve System; otherwise, before FRASER, these speeches were not available to researchers outside the Fed. These speeches represent important information in the life-cycle of policy. In the library world, we often refer to these types of publications as 'grey literature.'

Speeches and testimony of FOMC participants include early policy proposals and prescriptions.[75] In addition, FOMC documents include the participants' discussion of policy choices. Congressional hearings, including confirmation hearings, also provide insight into the policy perspectives of the most influential Federal Reserve officials.[76] With these materials easily available through FRASER, users can view the policy process, the economic landscape, and policy results across decades. One could view the policy discussion as beginning with a proposal or idea that is suggested in a speech, then discussed at an FOMC meeting, and eventually acted on (resulting in a policy decision at an FOMC meeting). The results of the policy action may then be revealed through the economic data. This process occurs continually in the Federal Reserve and among all participants in the FOMC. FRASER organizes and provides access to this material for historical research into monetary policy.

Finally, the minutes of the meetings of the Board of Governors (1914-1951) are also on FRASER. Like the other materials, these can be searched by keyword and browsed by date. Because the Board of Governors meets almost daily, the minutes offer immediate reactions and discussions of policy options by the governors of the Board to crisis situations. The minutes were deposited at the National Archives (standard records practice in the U.S. federal government) and were scanned as part of a project to capture some of the vast Federal Reserve record material held at National Archives and Records Administration, part of Record Group 82.[77] FRASER

75 See McGregor and Young, 'Federal Reserve Bank Presidents as Public Intellectuals,' History of Political Economy, 2013 doi: 10.1215/00182702-2310989.

76 See Romer & Romer for a discussion of how 'the best predictor of the beliefs previous chairmen held while in office are their prior writings, speeches, and confirmation hearings' at http://www.nber.org/papers/w10161

77 Gary Richardson has described the documents in Record Group 82 and provided an overview of working on records in the National Archives in 'Archive Survey: Records of the Federal Reserve Board of Governors in Record Group 82 at the National Archives of the United States' Financial History Review 13.1 (2006), pp.123-134.

will soon contain the minutes of the Board of Governors through 1962.

Archival data and papers

FRASER contains the archival collection 'Records of the Federal Reserve System, Record Group 82.' All of the data in these archival collections are from digitized historical documents: They have been digitized and processed through optical character recognition (OCR) software; which means the computer-readable text (mostly typewritten) is available for searching. But there are some caveats: It would be an enormous undertaking to review all the data and correct all errors, so this has not been done. Users may use FRASER to search the collection, but there are imperfections in the underlying text. Our overriding goal is to provide access to the data in useful ways, within our resource constraints. For instance, these archival documents include the material collected during the Bank Holiday of 1933. These records include data, commentary, letters, and other information about the Bank Holiday. The Finding Aid to Record Group 82 has been annotated by FRASER librarian Pamela Campbell and contains links to the RG82 materials on FRASER or elsewhere on the internet.

In addition to the Record Group 82, FRASER also contains a massive collection of call reports – individual bank balance sheets – from 1916 to 1959. Users will encounter obstacles to their use: many are hand written, with notes in the margin, and the volume of these reports has made compilation a time-consuming task. Nevertheless, these balance sheets reveal the financial condition of individual banks across the country and so reflect economic conditions both locally and nationally. And, through their digitization, they are available to a broad audience for a variety of uses.

The digitized personal papers of former Federal Reserve chairmen also represent significant archival collections in FRASER: for example, the papers of Marriner Eccles (the chairman responsible for the modern Federal Reserve) and the papers of William McChesney Martin, Jr (the chairman who engineered the Treasury-Fed Accord and then oversaw the Fed from 1951 to 1970). Recently, the Eccles papers were used to document the issues debated during the drafting of the Banking Act of 1935.[78]

As with physical archives, digitized archives require a significant amount of background knowledge from the researcher—the material is often drafts of policy, or correspondence between parties who know the details of the policy proposals. Users who do not have this background may find the lack of context daunting. For knowledgeable researchers, however, archival materials offer new information on the important economic events of the nation.

FRASER goal: increasing access

FRASER documents the life cycle of economic policy—particularly Federal Reserve monetary policy. Documents that illustrate Federal Reserve policymaking have historically been difficult to access. In the past twenty years, however, the Federal Reserve has become much more transparent and attentive to the need for improving access. FRASER increases transparency and provides a logical single source for this information by collecting, digitizing, and providing free access to a wide variety of materials that document the monetary policy discussions and the economic data that represent the enactment of that policy.

These materials include economic data, minutes from Federal Reserve policy meetings (FOMC, Board of Governors, Federal Reserve Advisory Council), papers of prominent Federal Reserve officials (Eccles, Riefler, Martin, Strong), papers from specific Federal Reserve policy changes (Treasury-Federal Reserve Accord archival materials), archival documents from the Federal Reserve Organization Committee (which determined Federal Reserve District borders and the cities where Reserve Bank would be located), research publications of individual Reserve

78 See Conti-Brown, Brookings Working Paper #10, March 2015, page 11, https://www.law.stanford.edu/sites/default/files/publication/874541/doc/slspublic/Conti-Brown-fed_banks_21st_century.pdf)

Banks, and speeches of Federal Open Market Committee participants.

Each type of document provides a different piece of information; collectively they provide a nearly complete picture of the policy process. Individually (or even in logical groups), they would normally be found on separate and very different websites or in very different physical locations. The work behind FRASER has been to bring together these disparate types of materials to offer researchers something close to a 'one stop shop' for researching economic data and policy history. FRASER is not yet comprehensive, but FRASER librarians are continuously adding materials as resources allow.

To increase access, FRASER librarians have done several things: We have added the title-level metadata for FRASER documents to the Digital Public Library of America. The DPLA is a collective effort among libraries across the United States to provide a catalog of the materials digitized by all the libraries and other related institutions in the United States. It provides a universal access point to digitized materials. The Federal Reserve and the Reserve Banks are an important part of the nation's history, and FRASER has ensured the general public has access to relevant materials. In addition, the policy materials contributed by and representative of the Federal Reserve—the speeches of the Bank Presidents and the historical Federal Reserve Review publications—are being added to *Fed in Print*. In turn, this adds them to the RePEc (Research Papers in Economics) database, providing access and an awareness of their availability to scholars. RePEc also populates Google Scholar, which likely adds a new awareness of these resources. It is unlikely that the general public will use the materials in the same way as economic historians, but broad access remains an important goal for FRASER.

Searching unique collections allows researchers to narrow their work to a sub-section of materials, and FRASER offers users the ability to search the full text of the FOMC documents as a group. Thus, users can search for terms such as 'stagflation' or 'price stability' or 'depression' and sort by date or relevance.

Finally, as part of FRASER's service to the public, we answer questions about the collection and about related materials. We have a small group of reference librarians who are subject specialists and can provide users with information or references to other available resources.

Technical and other considerations

To increase our ability to reach our audiences and clarify our commitment to public access and transparency, over the past two years FRASER has undergone a complete metadata overhaul. The metadata overhaul was designed with two purposes in mind: (1) to increase the usability of the website through better organization, categorization, and linking of documents and (2) to provide an OAI-compliant site so that FRASER could be represented in the Digital Public Library of America (and any other future site that requires OAI compliance).

While the audience using DPLA is not likely to be a significant source of referrals for FRASER, it sends an important signal to the general public that materials by and about the Federal Reserve, economic history, and the policies that affect nearly all Americans are being made available to as wide an audience as possible. In fact, FRASER staff is continually considering ways to highlight materials that might be of interest to different audiences. Our goal is to make important economic data and monetary policy material available to the broadest audience possible.

Appendix: Unpublished or lightly published data on FRASER

FOMC materials:

- Green books
- Blue books
- Red books

Records of the Federal Reserve System, Record Group 82:

- Banking Holiday data, Box 2164-2165 (Central Subject File>Member Banks 1916-1954>Banking Holiday)
- Reserve Bank Organization Committee data
- Open Market Policy Conference and Open Market Investment Committee (pre-FOMC)
- Statistical data collected for the committees' work (e.g., Box 2764, Folder 1 and Box 2765, Folder 5)
- Coming soon: the records at NARA of the Central Subject Files

Statistical releases from the Board of Governors:

- 105 titles, over 45,000 issues (FRASER currently hold 95 titles)
- News releases (vintage data) from U.S. gov't agencies
- Employment Situation Report

Federal Reserve Bank of New York Circulars:

- Communication of information, policies, and procedures to member banks

Call reports:

- Board of Governor's collection of balance sheets for individual banks, 1916-1959
- State Bank Call Reports for Texas, 1929-1933

Marriner S. Eccles papers:

- Box 28, Folder 6, Item 9, Mortgage Data by State
- Box 73, Folder 9, Item 1 Sample study of records of suspended banks

Chapter 5

South-Eastern European monetary and economic statistics from the 19th century to World War II: a first look at the new historic database. What do we learn?[79]

Brindusa Costache[80]
Kalina Dimitrova[81]
Sophia Lazaretou[82]

Introduction

In European monetary affairs, 2015 started with some good news, namely Lithuania's accession to the euro area. This event in itself is a positive message for the monetary future of Europe, especially at a time when economies at the 'core', after six years of crisis in the euro area, are now faced with a challenge of secular stagnation, while the economies at the 'periphery' are still suffering from high debt ratios, very low employment rates, unprecedented high unemployment and prolonged recessions. The recent adoption of the euro by a peripheral emerging economy of the EU is indicative of the EU periphery's intention to follow European monetary developments and become members of an economic club of powerful nations.

79 We would like to thank all colleagues from both the national central banks and the academic institutions that contributed to this project. Special thanks are due to the scholars who patiently worked with the members of the network for more than seven years and provided firm support and suggestions. Special thanks are due to Roumen Avramov, Victor Axenciuc, Dragana Gnjatovic, Damir Jelic, Ivo Maes, Peter Mooslechner, Matthias Morys, Nikolay Nenovsky, Martin Pontzen and Loredana Ureche-Rangau. We would also like to thank participants in the *eabh* workshop 'New Scholars in Financial History', Brussels, 9-10 March 2015, the *eabh* workshop 'Inflation, Output and Money', Prague, 14 May 2015, as well as participants in several national seminars and workshops in which the database was presented by the national working groups. Last but not least, we would like to thank Vassilis Belekoukias who patiently read the manuscript and made editorial comments. An earlier version has appeared in *eabh* Papers, 2015, July 15-02. The views expressed herein are strictly those of the authors and do not necessarily reflect the views of the contributing national central banks and the Eurosystem. We alone are responsible for any errors or omissions.

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The publication, for the first time, of a complete and comparable historical statistical database on key economic and monetary variables for the South-Eastern European (SEE) countries over a long time span reveals that this intention was a continuing concern of national economic policy-makers. In fact, historical narratives and quantitative data suggest that the thread running through the national stories was more or less common. It was characterised by repeated episodes of monetary and banking instability and their continuous efforts to join at some point the international monetary system. The benefit they hoped to reap from this was cheap foreign borrowing to finance their development process. Yet, narratives and data series show that the risks of their effort to import policy credibility through hard currency pegs were equally high, particularly in those cases where the country could not develop sound fiscal and monetary institutions. Hence, stability often became elusive.

Good policy-making should be grounded on good data. To this end, the Data Collection Task Force of the South-East European Monetary History Network (DCTF SEEMHN) works, since 2006, towards establishing a SEE macro history database of 19th and 20th century statistics. This paper introduces the network and its first result, a new statistics publication entitled South-Eastern European Monetary and Economic Statistics from the Nineteenth Century to WWII. It contains a newly compiled, built and harmonised dataset of long-run monetary and macroeconomic time series for the SEE countries. To the best

of our knowledge, this is the first attempt to compile, build and publish a complete historic set of hard data for less known countries such as those from SEE. We look forward to this joint venture being emulated by others around the world.

The new historic dataset removes several quantitative handicaps faced so far by researchers and brings, for the first time ever, SEE monetary history and policy at the forefront. Whilst authors have so far focused on individual countries during specific periods only, the SEEMHN DCTF provides comparable, long-run monetary and financial data for eight SEE countries over two centuries. Its construction required an enormous amount of archival work and huge efforts to coordinate the different research teams. The outcome is a large, original and carefully constructed dataset, which is available online.[83] Until now, only few partial aggregate series existed and had previously been made public. Having more empirical evidence on this region should be very useful, since most of the literature in economic and financial history has focused on countries at the 'core' of the international financial system.

The new dataset would allow current and future generations of economic historians to provide a comprehensive assessment of SEE monetary and financial history. Key questions should be: what do we learn from the new statistical series about SEE monetary and financial history and policy, and the financial history of the European periphery in general? In what ways does the new historic dataset confirm or contradict the arguments made so far in the historiography?

The aim of the paper is threefold. First, we discuss the techniques and technology followed in the data compilation and building process. We emphasise the need for a thorough analysis of the available data sources from archives and libraries in order to select the variables presented. Second, we enhance its dissemination to the broader research community by informing researchers on how they can have access to the data. Third, we briefly present the new statistical database and summarise some of the project's original historical findings.

The rest of the paper is organised as follows. Section 2 gives an overview of the data volume and the process of constructing a database on economic and monetary history. We try to contextualise this work within relevant historiography. Section 3 describes in depth the sources used, both primary and secondary, and their influence on the choice of the variables. Section 4 addresses some key methodological issues faced in the data collection process such as the building of new variables; definitions of concepts and ensuring comparability; as well as logistical problems regarding the coordination of the national working groups. Section 5 presents the database. In particular, it presents the groups of select variables, stressing the need for a thorough analysis and a detailed explanation of the definitions applied. Further, it provides basic summary and descriptive statistics in the form of graphs derived from the dataset and presents some of the project's main historical interpretations and conclusions. Section 6 concludes.

Economic history, policy and data

Quantification in economic history

In our days, there is still a lively methodological debate on quantification in economic history as part of the broader debate on the quantitative turn in history (see Cherrier 2015). During the last two decades there has been a substantial increase in the number of papers, either working or available publicly, which use quantitative data and econometric techniques to study patterns across countries, time and institutions. The development of new databases and systematic training in a more sophisticated economic analysis prompted a quantitative turn in economic history. In their survey of quantitative history of economics, Backhouse, Middleton and Tribe (1997) argue that quantitative work is used to answer questions on the development of economic theory; to relate economists to historians and policy-makers; to address reciprocal influence between economics

83 Free access is available on the websites of: Bank of Greece, Bank of Albania, Bulgarian National Bank, National Bank of Romania, National Bank of Serbia and Oesterreichische Nationalbank.

and other sciences; to understand the differences between the US economy and the European economies; and to point to puzzles and try to explain them.

Advances in economic history have been achieved by deriving quantitative evidence from qualitative evidence (see Carus and Ogilvie 2009). Thanks to the dissemination power of statistical evidence, charts and figures, the establishment of multinational research networks and the development of new historical data series, researchers are now able to visualise historical data and uncover robust patterns with the ultimate goal of better describing a past society. This, in turn, helps economists and policy-makers to have a better insight on key economic issues such as sustained development and growth, long-run monetary and financial stability, income equality, efficient economic structure and good performance.

The SEEMHN

Against this background, the SEEMHN was established with the primary goal of building a new SEE historical database. SEE economic and monetary history is more or less *terra incognita.* Up to now, most of the available literature on economic history deals with the advanced countries of Western Europe and the USA. In all international empirical studies, SEE is systematically neglected or included only occasionally and sporadically in their cross-country samples. There is not much more on this topic in the national literature either. National studies mostly concern anniversary editions, chronologies and chronicles, and biographies. Therefore, the historical study of the monetary policy pursued by SEE countries was not systematic. A key drawback was the lack of reliable data. Consequently, economic policy implications are largely based on the 'core' countries' experience since we know very little about the monetary past of the 'periphery'.

However, as the current economic crisis has revealed, the European 'core' and 'periphery' are being affected differently as their economic structure and management are quite different. The real economy was hit harder in SEE countries compared to Central and Northern Europe. This confirms the need for a systematic study of the economic and monetary experience of the countries at the 'periphery' with a view to clearing up the specificities and idiosyncrasies which, in turn, determine the nature of policy response and its results.

Good policy-making is grounded in good knowledge of past policy responses and outcomes. Knowledge is promoted and experience is exchanged only when they are based on reliable data. Accordingly, quantitative data are an essential tool in this respect. They serve as an infrastructure to deepen our understanding of SEE historical experience and identify its key drivers, tapping existing knowledge and offering new inputs that will provide timely information to economic policy-makers.

All the SEEMHN members acknowledge that this goal could only be achieved by publishing a newly compiled, built and harmonised dataset of long-run key monetary and macroeconomic time series for the countries of the region. They also acknowledge that this could only be done by joining forces and exchanging knowledge and experience. Therefore, the SEEMHN involves cooperation between representatives from participating central banks and scholars who specialise in different fields, geographical regions and time periods.[84]

The SEEMHN database has been compiled by the central banks of Albania, Austria, Bulgaria, Greece, Romania, Serbia and Turkey. A special introductory chapter[85] introduces the reader to the subject providing some political and economic background information on the history of SEE prior to WWII. It also points out some parallels between the

84 Arta Pisha, Besa Vorpsi and Neraida Hoxhaj (Bank of Albania), Clemens Jobst and Thomas Scheiber (OeNB), Kalina Dimitrova (Bulgarian National Bank), Martin Ivanov (Bulgarian Academy of Science), Sophia Lazaretou (Bank of Greece), Matthias Morys (University of York), Şevket Pamuk (Boğaziçi University), Ali Coskun Tuncer (University College London), George Virgil Stoenescu, Elisabeta Blejan, Brindusa Costache and Adriana Aloman (National Bank of Romania), Branko Hinic, Milan Sojic and Ljiljana Djurdjevic (National Bank of Serbia), Yüksel Görmez and Serkan Yigit (Central Bank of the Republic of Turkey).

85 Written by Matthias Morys (University of York).

situation 'then' and 'now' and the challenges SEE is facing today. The main part of the database consists of eight similarly structured country chapters, i.e. Austria-Hungary (1863-1914); Greece (1833-1949); the Ottoman Empire (1830-1914); Bulgaria (1879-1947); Romania (1880-1947); Serbia/Yugoslavia (1884-1947); Albania (1920-1944); and Turkey (1923-1947). A complete dataset is presented for each country covering six broad groups of indicators,[86] i.e. (1) monetary variables; (2) interest rates; (3) exchange rates; (4) government finances (central government); (5) prices, production and labour; and (6) national accounts and population.

The eight countries included in the sample are representative of the peripheral countries' monetary and financial predicaments. In the gold standard literature (see inter alia Eichengreen 2011, Bordo and Kydland 1995, Bordo and Schwartz 1997), participating countries are divided into 'core' and 'peripheral' according to their faithfulness to fixed rates. The core counties always adhered strictly to the specie rule. By contrast, the peripheral countries only temporarily maintained fixed rates. Economically and historically speaking, peripheries are a group of capital scarce nations, economically and financially less developed. They are unable to issue debt in their own currency. They usually try to import credibility through hard currency pegs. They often suffer from weak public finances. They cannot therefore influence the international monetary system and have to obey the rules set by the core. Whenever they face pressing financial needs and/or deficits in the external account, they abandon fixed rates.

National narrative accounts and the new statistical series disclose that 19th century SEE delivered all typical features of peripheral countries. First, hard data show that the SEE countries recognised early that the new state's making and its future was best served by adhering to the western European economic and monetary developments. Their geographical position and proximity to Western Europe largely contributed to formulating this policy decision. To this end, not so long after gaining their national independence, all SEE countries introduced a national monetary system based on bimetallism or silver mono-metallism. Following the concept of European central banking prevailing in the 19th and 20th century, they all set up note-issuing banks which issued bank notes backed by metallic currency and had reserve powers.

Second, they never pursued some fragile regional economic and monetary integration; instead, they were always strongly committed to becoming integrated with the western European process. By joining a monetary stability club of powerful western European countries such as the Latin Monetary Union, the classical gold standard or the interwar gold-exchange standard, and choosing to peg their weak currencies to hard currencies such as the French franc or the British pound, they sought to build sound monetary and financial institutions and end histories of financial crisis.

Third, suffering from very low levels of national saving and banking credit, thin domestic money markets, structural and institutional backwardness and lack of industrialisation, the 19th century SEE economies almost entirely relied on European capital markets to finance their development process. Hence, their entry into the prevailing European monetary system was regarded as a 'seal of approval' allowing them to borrow cheap foreign money.

Fourth, drivers such as public finance weaknesses, frequent wars, political instability and high sovereign risk often undermined their efforts to credibly adhere to fixed rates. Political institutions remained fragile and fiscal discipline was elusive. Ultimately, they failed and abandoned the system. However, despite weaknesses and failures, national stories and hard data provide strong qualitative and quantitative evidence that SEE should be considered as intrinsically linked to European economic and monetary developments.

86 For Greece, there is also a seventh category of variables presenting money, prices and exchange rates covering the period of WWII and its aftermath (1939-1949).

Sources

One of the project's challenges was to identify the appropriate sources of information deposited in archives and libraries, which would allow us to extract the data series required to develop or retrace certain indicators that describe monetary and financial developments in SEE during the period under study.

Identifying the appropriate sources for those indicators that were initially considered by the national working groups was a first problem in this respect. As is well-known, sources either stored in archives or published and deposited in libraries often curb the enthusiasm of researchers, whose efforts are focused on those areas of research for which sufficient documentary sources exist and access to which is quite easy. Much in the same way, the available sources have determined the original list of indicators chosen for this project. Over time, the original list was gradually supplemented with other indicators for which documentary sources had been identified, while for some others publication was not possible due to lack of sufficient primary data sources. As an example in this respect, we can refer to the lack of school enrolment data for all countries except Turkey and Serbia, as well as data on government bond yields and interest rates for the Ottoman Empire.

Another problem was the accurate interpretation of the available data. Both archived documents and publications on certain economic phenomena provide information and interpretations that are useful for that particular time, according to the prevailing standards and requirements. Under these circumstances, the working groups decided to engage not only in tracing the available data sources, but also in a critical approach to the use of such sources.

It was of utmost importance to disclose the methods and techniques used for the determination of the indicators used or built, particularly for those indicators which rely on primary sources, such as price indices, production indices, money supply components and GDP, as well as a comparison against current methods and techniques. Thus, regardless of the differences in determining indicators across time, the datasets described should observe currently accepted definitions and measurements. An example is that of the price index published in the Romanian financial newsletter *Argus*. Even though this index refers to the interwar period, we resolved to refrain from publishing the respective time series because the method employed to determine the index at that time is not in line with contemporary standards applicable to price indices.

Going back to the sources, an in-depth analysis has shown that most of the information comes from publications of the note-issuing bank or the central bank and the national institutions, discharging monetary, financial and statistical duties. By way of exception, due to lack of other available information, the working group assigned to Albania has made extensive use of the statistical data published by an international organisation such as the League of Nations. Unpublished information traced back to documents stored in national archives has also been used to a large extent, particularly studies conducted by the central banks for internal purposes or background documents used as supporting material for the preparation of their balance sheet. Another category comprises monographs, review papers and studies published by contemporary researchers at national and international level.

As a rule, the working groups have shown preference for primary information derived from documents stored in archives, periodicals published by banking and financial institutions (i.e. reports, balance sheets and statements), press releases by the same institutions in contemporary daily newspapers, as well as information from publications of the national statistical authorities. Complementary sources such as review papers or studies published by contemporary researches have been considered only when primary sources were not available. An interesting example in this respect is that of retracing the dataset of the exchange rates for the Greek drachma almost entirely based on information retrieved from

the periodicals of National Bank of Greece and the Bank of Greece, but also from contemporary studies which had already been published. They were used for cross-checking the original time series and completing the missing figures. Nevertheless, due to the lack of other available (official) information, the data published by Delivanis (1946) and Delivanis and Cleveland (1949) have been used to plug the gap from 1941 to 1944.

Our main concern has been the accuracy of information. We have looked for a concrete interpretation of the data published by the national central banks in their half-yearly and annual balance sheets and reports, as well as in their monthly and weekly reports featured in specialised journals or daily newspapers of the time. To this end, the information thus published by the central banks was cross-checked and compared with unpublished data kept in various archives. The data used in the preparation of the balance sheets and reports, as maintained in the archives of the national central banks, were of great help in interpreting the official data. Thus, researchers have the opportunity to thoroughly analyse every balance sheet item. For instance, in the case of Romania, international reserve data were retraced based not only on the official information published by the country's central bank, but also on the data stored in the bank's archives which served for preparing the half-yearly and the annual balance sheet between 1929 and 1947.

Another issue that was frequently encountered when preparing the datasets is the review and updating of previous research datasets by authors participating in the project. Therefore, the working groups assigned to the Ottoman Empire have relied on the results of some of their previous research on the exchange rates, the consumer price index and government finances (see Pamuk 2000). This is also the case for Bulgaria, where the GDP dataset is based on previously published work (see Ivanov 2012), as well as for Serbia, where the data on government finances are based on the work of Gnjatovic (2009).

As already noted, the presented indicators have been classified into six main categories. In what follows we shall make an attempt at detailing the sources of information used by participating countries, as well as the difficulties encountered when interpreting the data series in each category.

Monetary variables

Monetary variables have been based mainly on annual and half-yearly reports and balance sheets, as published by the note-issuing and central banks, as well as the monthly or weekly statements released by these banks to the daily newspapers.

The records of the note-issuing banks are retained in the banks' archives. For some countries, however, they are maintained at the national archives; this is the case for Albania. Consequently, for Austria-Hungary significant information on the preparation of the balance sheets was found in the central bank's archive. This is also the case for the National Bank of Romania. In the case of Greece, significant information for the tracing of monetary variables was found in the archives of National Bank of Greece, which retains not only its own documents, but also the records of other banking institutions in Greece, including two other note-issuing banks, namely the Bank of Crete and the Bank of Epirus and Thessaly.

Specific mention should be made of the Ottoman Bank, a foreign credit institution whose documents are retained at Guildhall Library in London, at *Archives Nationales* in Roubaix and at SALT premises in Istanbul. Most of them are digitised and could be accessed on SALT website. We should also not forget the efforts of the National Bank of Serbia to digitise and make available the bank's annual reports and balance sheets on its own website.

Moreover, studies published at the time as well as the results of research conducted by contemporary authors were also used to complete the documentation process.

Interest rate

The data published by the note-issuing banks in their annual reports as well as in the daily newspapers were used in order to retrace the datasets on the evolution of short- term official lending rates (i.e. the discount rate and the Lombard rate). The information released by the stock exchanges in the capital cities of the participating countries (Austria, Greece, Romania and Serbia) in their own bulletins, as well as in the specialised or the daily newspapers were used to establish the evolution of medium- to long-term lending market rates. Another example is that of Bulgaria, which made use of the data concerning the trading of Bulgarian government bonds on the Vienna stock exchange, as published in the stock exchange journal and the Austrian daily newspapers. Albania extracted information from an international organisation, i.e. the League of Nations and its Statistical Yearbook, due to the absence of any national source.

Exchange rates

The working groups resorted to the information published in the daily press of the time (Austria-Hungary and the Ottoman Empire), the information extracted from the central banks' reports (Turkey), or to a combination of various sources of information, such as data preserved in various archives, statements published by the note-issuing banks in their own bulletins or in the daily press, data published by the local stock exchanges, as well as the statistical yearbooks of the national and/or the international statistical authorities (Bulgaria, Greece, Romania, Serbia, Albania). This set of information was integrated with the data included in several review papers and various studies of the time in an attempt to cover the gaps of missing data (Serbia, Greece and Bulgaria).

Government finances

In order to establish the datasets for government revenue and expenditure and trace back the evolution of government debt, most authors combined primary sources such as the *Government Budget* and the *ex-post Budget Report,* with the results of contemporary research. Turkey is an exception to this rule since data rely only on the information published by the central bank and the national institute of statistics.

The working groups on Austria-Hungary and Romania mainly relied on the primary information available in the government's statistical and financial yearbooks or the annual reports and the statements published by the ministry of finance. This information set was integrated with the data collected from the review papers published by other researchers. For the Ottoman Empire and Serbia, the working groups used their own previous studies on the same matter, while for Bulgaria the data are taken from statistical yearbooks. For Greece, the presented dataset relied on the information recently published and based on official data released in the *ex-post Budget Reports* (see Prontzas et al. 2012).

Prices, production and labour

The datasets on prices, production and labour have been extracted mostly from recent papers published either by the working groups of the project or by other researchers (see Austria and the Ottoman Empire). However, for Serbia, Romania, Albania, Greece, Bulgaria, and Turkey the respective time series were retrieved from both primary and secondary data sources such as the country's statistical yearbooks and bank's journals.

National accounts and population

This category generally comprises three datasets: population, foreign trade and GDP domestic product.

As regards population data, most authors relied on information from the yearbooks published by the national statistical authorities. Serbia aggregated primary information with the information published in a review paper based on the data series reported in the

country's statistical yearbooks. In the absence of any national data sources, the presented data series for Albania was retrieved from internationally renowned review papers, such as the one published by Maddison (2003), whose data were used together with the data extracted from official statistical publications.

With respect to the data concerning the volume and the value of foreign trade, the most frequently encountered sources of information are the national statistical yearbooks and the data published by the national banks in their own bulletins. There is however a slight difference in the data series for the Ottoman Empire, which relies on the results from previous studies published by Pamuk (1987 and 2006).

As far as the dataset on GDP is concerned, most working groups relied on the results of previous estimates already published. For example, the data for the Ottoman Empire reflect the estimates in Pamuk (2006). The same is also true for Greece (see the estimates in Kostelenos et al. 2007) and for Romania (Axenciuc 2012). The data on Bulgaria's GDP rely on the recent estimates in Ivanov (2012), while for Serbia, national income estimates are used as published in national review papers.

One may notice that, while most financial, banking and monetary data have been drawn from primary sources, with authors frequently arguing in favour of revising previously published results, the data from other areas of interest (e.g. national output) have more heavily relied on the research of individual experts, with more focus on the accuracy of the sources of information available to them.

Methodological issues

Methodological issues related to building new variables

Building long-term monetary and economic series is always a challenge due to changes in methodology (economic concepts, changes in the monetary standard and data reporting) and missing data. As mentioned above (section 2.2), the major challenge was constructing monetary variables, government finances and GDP data.

While the definition of total international (currency) reserves is a broader economic concept of foreign (convertible) assets against which central banks could implement expansionary monetary policy, under different monetary regimes, there are different legal constraints in each country as to what liabilities could be covered by what assets. A clear distinction between the two concepts (economic and legal) is provided in each country data definition and description, and country datasets enable the reader to alternatively construct both. Besides, data on reserves/cover stock and liabilities allow for calculating (if not reported) the reserve-banknote cover ratios.

Constructing monetary base and aggregates back in the past[87] was a more difficult task given that a breakdown of deposits was not always available at the central banks, as was also the case for data on coins in circulation and commercial banks' cash and deposits. Therefore, different components are provided separately starting from the date when reported data allow for a meaningful compilation or estimation. Apart from using balance sheet and statistical data, the construction of 'broad' monetary aggregates in some cases required utilising newspaper sources for commercial banks' balance sheets. Whenever data reporting was interrupted, interpolations and other statistical techniques were appropriately used for the sake of time series continuity. Given that most monetary variables are taken from the central banks' balance sheets, those indicators refer to end-of-period values.

While official short-term interest rates were continuously available (end-of-period data), one could also construct period average values based on information provided for the dates of change. Long-term lending rates are best proxied by current yields of long-term government bonds (and/or mortgage interest rates) based on current price quotations which are also reported. While most countries report bond prices quoted on their national stock exchanges, the data

87 The first estimates of monetary aggregates in central banks' reports and analyses appear as early as in the 1920s.

on Bulgarian government bonds were kindly provided by our DCTF Austrian partners and refer to quotations on the Vienna Stock Exchange.[88]

At different periods of time, for some countries there are differences between exchange rate reporting standards and respectively different primary sources were used. While annual data are the average of the monthly reported values, the latter ones are either directly reported monthly averages or averages of the minimum and the maximum monthly values or averages of four-weekly observations or even averages of mid-day quotations. Similarly, the data refer to the nominal, selling and/or buying rate of banknotes or bills of exchange drawn on both domestic and foreign markets. In addition, the *agio* indicators are reported in different units of account (exchange rate quotations or in percentages) representing the gold/silver premium against paper currency (Austria-Hungary), the paper/gold drachma exchange rate for Greece and the gold premium against silver and (silver-backed) paper currencies for Bulgaria, Romania and Serbia.

The second challenge refers to the construction of the variables of fiscal revenue and expenditure according to the modern standards of government statistics. Apart from providing primary data reported for ordinary and extraordinary revenue and expenditure, some countries invested more time and resources to identify budget financial transactions (e.g. interest payments and debt redemptions) and to adjust the extraordinary components accordingly, while others have provided data on foreign debt payments or different components of budget revenue and expenditure. In addition, public (central government) debt and its foreign and domestic components are also collected and reported.

In the broad category of prices, production and labour, indices of consumer prices, market wholesale prices or individual product prices are available for all countries. Some countries also report export and import price data from the interwar period backwards. Additional indicators like industrial production (value, volume and indices), labour market data (unemployment, labour force, wages) and educational indicators like school enrolment are also added for some countries.

The third main challenge was constructing a broad economic activity indicator like GDP. While in the 1920s the concept of national income and GNP was prevalent and some countries reported nominal and real GNP using statistical resources, for others there are only GDP estimates extended back in the past which are provided based on secondary sources. Concerning trade, foreign trade data (only exports/imports of goods) were regularly reported and easily collected. Finally, the presented data on population were based on population censuses as well as on statistical interpolations in-between census years applied by the statisticians at that time.

Increasing comparability between countries' databases

Comparability is essential for a project of multi-country databases. It is usually constrained by differences in legal definitions; differences in data reporting methods; and data availability. In order to increase comparability across countries' datasets and construct a harmonized multi-country database, in the process of data exploration we strictly paid attention to those three aspects. Data unavailability, in particular of compound indicators (e.g. monetary aggregates, total reserves), was overcome first by checking and collecting primary data and, second, by constructing the aggregate indicator, quoting the respective primary source and using items that appeared on balance sheets. Even when data of compound indicators were readily available in the balance sheet and other official statistical resources, for the sake of comparability, we carefully studied their composition and legislative constraints. In addition to providing data for the respective aggregate indicators, we also published their components, thus allowing the researchers to use whatever sub-component

88 At the outbreak of WWI, the Vienna Stock Exchange was closed and data end in June 1914.

and/or sub-aggregate they need for their comparative analyses. For those periods that primary data were not available, we resorted to the appropriate statistical methods (e.g. linear interpolation) for generating a continuous time series. This scrutiny of data enabled us to provide useful information about episodes of different data reporting standards under different monetary regimes and even incidences of data manipulation. A detailed and concrete description of the relevant variable also assisted the same purpose. This is because recording important differences in the reporting methods often reflects changes in the monetary policy regime. Another option for enhancing comparability was also the decision by all project participants to use the standardized definitions used in compiling modern data. This enables researchers to make comparisons across time and across countries.

The SEE macro history database

The SEE historic database goes back to the distant past and helps researchers to analyse SEE monetary, fiscal and financial developments from national independence to WWII. Data availability gives us the chance to remove the 'statistical dark ages' and shed light on the 'dark spots' on the map of the monetary history of the individual countries and the region as well. In particular, it supports relevant research initiatives which will present empirical evidence and document narratives. It also provides material to address key issues which remained unanswered in the literature such as:

i. what were the main drivers of SEE's economic backwardness;
ii. what were the main threats to SEE financial and monetary stability;
iii. whether and to what extent could SEE countries be considered as intrinsically linked to the mainstream European developments;
iv. why were SEE countries not able to build and apply sound fiscal and monetary institutions;
v. how were they affected by past international crisis events (crisis scale and breadth) and how did they cope with the crises; and
vi. what went wrong; what was the aftermath of these crises?

In this section we first provide a user's guide to the database which can be useful to researchers interested in using the new data. And second, we move on to describe certain statistical series aiming to provide some hints on the project's original findings.

Structure

Each of the eight country chapters of the database consists of four parts: (1) major monetary events, including a short but solid account of the respective country's institutional framework for monetary policy implementation; (2) a detailed description and definition of the presented variables; (3) a detailed discussion of the primary and secondary data sources used in the data collection process; and (4) the tables with the historical time series by country.

At the beginning of each country chapter an index table provides information on the list of variables presented, the time span covered, the reporting frequency, the applicable unit of account and the codes assigned to the variables. The index table will be used as a roadmap for safe data search.[89] A synopsis of the database and its details is presented in Table 1 (See following page).

In part 1 of each country chapter, historical data are preceded by a short description of the respective country's major monetary events. A relevant table replicated in each country chapter provides full details on the dates of, and the reasons for, a nominal exchange rate regime switch, the changes in the official parity rate, the dates of introduction of a national currency system, the dates of establishment of a note-issuing bank and/or a central bank, the crises of the gold or gold/silver convertibility regime, the episodes of debt default and bank failure.

Compiling, processing and checking data, and constructing indices for such long and distant time periods is an arduous and long procedure. It requires

89 The index table is replicated in each country's Excel data file and makes it easier to quickly navigate to the required annual and monthly time series.

in-depth knowledge of the institutional framework of both the domestic and the international economic and monetary systems and policy conduct. For this purpose, details are provided concerning the targets and instruments of the monetary policy pursued, the interventions in the exchange market, the causes of fiscal and external imbalances, and the structure of the country's banking system and the process of its development.

Groups of variables

Part 2 includes detailed explanatory remarks on the definition and description of the variables. Of all the variables, particular emphasis has been placed upon the monetary ones, chiefly for two reasons. First, central banks themselves are better placed to provide these data since access to their archives is easier. And second, monetary variables have played a central role in the conduct of monetary policy. They were constructed by contemporary central bankers to guide policy. Monetary variables are thus the first group of the variables presented in the database. They include (i) currency reserves, (ii) monetary aggregates, (iii) banknote circulation, (iv) the reserve-banknote cover ratios and (v) bank deposits.

Concerning currency reserves, these include metallic reserves (i.e. gold and/or silver, either in bars or in minted coins), total foreign exchange holdings and securities (usually government bonds). Relevant issues such as the concept of currency reserves (official or statutory; 'gross' or 'net'; on- or off-balance-sheet activities) and their valuation (at the current exchange rate or at the official parity rate) were thoroughly addressed.

Monetary aggregates include definitions of money; they primarily refer to the liabilities of private financial institutions, namely deposits and currency. All countries provide complete data series on coins and banknotes in circulation taken from the banks' reports, statistical bulletins and archives. However, the primary data sources lacked definitions of money as a means of payment such as 'narrow money' or as a liquidity index known as 'broad money'. Apparently, the advocates of the 'currency school' of the 19th century could not consider other items –apart from metallic coins and banknotes– such as bank deposits as money substitutes. Thus, in accordance with the monetary policy rules applying in the context of a metallic regime, the national monetary authorities tried to measure the stock of money in the domestic economy by simply reporting the stock of coins and notes in circulation. Furthermore, metallic monetary regimes required each country's central bank or note-issuing bank to maintain a minimum ratio of reserves to banknotes in circulation. This was because excess uncovered note issue was thought to strengthen inflationary pressures in the domestic market compared to abroad, and cause capital outflows and large reserve losses. In other words, the reserve-banknote cover ratio determined the relationship between domestic money stock and metallic and foreign exchange holdings. Obviously, banknote circulation was a key monetary variable, as the central bank or the note-issuing bank was obliged to announce and preserve a 'statutory' minimum proportion of the banknotes in circulation that should be metallic and/or foreign exchange-backed. Therefore, the precise knowledge of the stock of banknotes in circulation was of paramount importance if banknote convertibility was to be secured.

The second group of variables refers to short-term and long-term lending and deposit rates. Special emphasis is placed on two key variables. The first one is the note-issuing bank's and/or the central bank's short-term rate, known as the Lombard rate, bank rate or discount rate. It was imposed on discounts and advances provided by the central bank to the commercial banks to meet temporary shortages of liquidity. The second one refers to the government cost of borrowing. It was best proxied by the current yield of long-term government foreign bond loans. Its evolution over time is considered important for two reasons. First, it is a metric of the government's creditworthiness since

Table 1
A synopsis of the presented SEE macro history database

Countries	Groups of variables	Variables	Time span from 1870 and beyond–prior to 1950 Data frequency	Unit of account
Albania Austria-Hungary Bulgaria Greece Ottoman Empire Romania Serbia/Yugoslavia Turkey	1. Monetary variables	• currency reserves • 'narrow' money • 'broad' money • banknotes in circulation • central bank liabilities at sight • bank deposits • reserve-banknote cover ratios	annual monthly	national currency
	2. Interest rates	• official interest rate • market lending rate • market deposit rate • current yield on government bonds	annual monthly	in per cent
	3. Exchange rates	• British pound • French franc • US dollar • Mark • gold parity/agio	annual monthly	national currency
	4. Government finances	• revenue (regular and extraordinary) • expenditure (regular and extraordinary) • public debt	annual	national currency
	5. Prices, production and labour	• consumer prices • wholesale prices • import and export prices • industrial production • wages and salaries • employment • school enrolment	annual monthly	national currency indices
	6. National accounts and population	• nominal GDP • real GDP • GDP deflator • real GDP per capita • imports • exports • population	annual	national currency

Source: Country index tables.

peripheral countries, suffering from the so-called 'original sin', were able to issue loans only in gold or in gold-backed foreign currency. Moreover, the bonds always included 'gold clauses'.[90] Second, it served as a leading indicator for the long-term market lending rate: easy access to the international capital markets would also be associated with cheap borrowing for the real economy.

The third group of select variables refers to the nominal exchange rates against the major international currencies such as the British pound, the French franc and the US dollar, and gold as well. Two issues are addressed here. The first one concerns the building of a time series on the 'agio'. Depending upon different monetary regimes in terms of legislation and implementation, the 'agio' is defined as the rate of the depreciation of the paper/silver currency against gold. The second one refers to the parallel market exchange rates, which were officially announced for private compensation deals when a large share of foreign trade turnover was conducted through clearing agreements at a fixed exchange rate, as was the case in the early 1930s. The data series presented in the database refer to the official (legal or free) market exchange rates. However, all SEE countries, prior to the interwar stabilisation of their currency close to the market rate, imposed strict controls on money outflows and set the exchange rate quite lower compared to the true market rates in an attempt to control the heavy devaluation pressures. Hence, in some countries, like Greece, the official rates were underestimated by 30-35%. For some other countries, like Romania and Bulgaria, both official rates and exchange rates with premium are presented.

Government finances are the next group of variables. It includes flows (revenue and expenditure) and stocks (public debt) of central government. Revenue refers to realised total revenue and taxes (direct and indirect). Expenditure concerns primary spending and interest payments. It also concerns ordinary and extraordinary spending. Availability of these series is quite important since it helps researchers to shed light on key issues, e.g. what were the driving forces of permanent fiscal imbalances?; what were the characteristics of the fiscal policies pursued by these countries? (procyclical versus countercyclical); how did the fiscal shocks originate? (war-time emergencies versus excess public consumption and public infrastructure spending); how were the budget deficits usually covered?

The last two groups discussed in the statistical base refer to prices, production and labour as well to national accounts. Analytically, price movements are described by a consumer price index or a cost-of-living index as well as a wholesale price index. Production can best be assessed by an industrial production index (value or volume) or an economic activity index. For some countries labour market statistics are available in the form of employment or unemployment figures, wages and salaries and school enrolment as well. National accounts include trade statistics (imports and exports of goods and services), newly built data on GDP, real GDP and GDP per capita, and population.

Preliminary descriptive statistical evidence

A first look at the dataset, starting with drawing some simple plots, may help us in a preliminary presentation of the main historical findings. Emphasis is placed on financial development, the government cost of foreign borrowing and currency stabilisation.[91]

(i) Financial development and global financialisation

In metallic regimes, even though reserves (i.e. metallic and foreign exchange) were endogenously determined, the statutory reserve-banknote ratio was regarded as a key policy variable, i.e. an exogenous

90 See Eichengreen and Hausmann (1999) and Eichengreen et al. (2003).

91 A more econometric-intensive research approach is needed to evaluate the linkages between variables and detect differences and similarities across various time periods and country samples.

variable. This might explain why the monetary authorities of that time were not concerned with monetary aggregates. However, based solely on banknote circulation, one would underestimate money supply. This might be crucial since as from the last quarter of the 19th century or even earlier (as was the case for Austria-Hungary), in all SEE countries barter economy was gradually replaced by an exchange economy employing metallic coins and banknotes for trading goods and services. Accordingly, short-term bank deposits were equally considered as money.

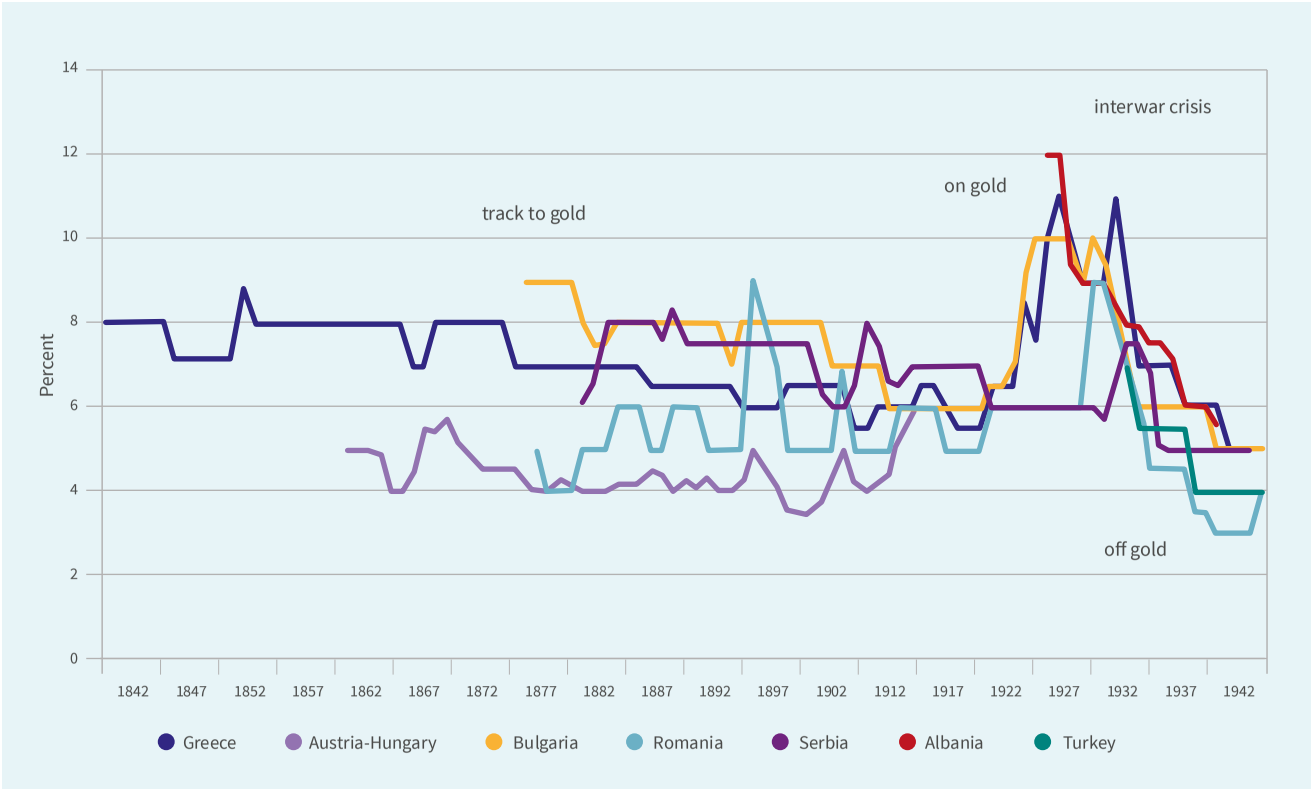
'Narrow' and 'broad' aggregates provide a more precise assessment of the stock of money than banknote circulation per se. Hence, the database contains for all SEE countries 'narrow' and 'broad' definitions of money which were built using the standard definitions commonly employed in building modern data. In all the sample countries liquidity increased during the last two decades of the 19th century as a consequence of the first era of financialisation of the global economy. Evidently, 19th century SEE was a capital importer. The increase in broad money supply was driven by various country-specific factors such as financial reforms and institutional innovations which encourage the use of demand deposits and checking accounts; the expansion of the domestic banking system; the rapid increase in country's foreign trade; and currency stabilisation in the run-up to the adoption of the classical gold standard. Liquidity rose in wartime and its aftermath. However, from the mid-1920s until the mid-1930s, all countries implemented strict monetary policies in the context of their attempt to join the gold-exchange standard as well to cope with the interwar crisis.

(ii) Discount rate policy

In the gold standard monetary policy framework, the note-issuing bank's or the central bank's discount rate was considered as the operating target of monetary policy. Therefore, whenever the country faced a balance of payments deficit and saw its gold and/or foreign exchange reserves declining, it raised its discount rate, thus causing other interest rates to rise as well and investment expenditure to decrease. The monetary rule was quite simple and clear-cut. The higher the bank rate, the lower the amount of money that banks would decide to borrow and vice versa.

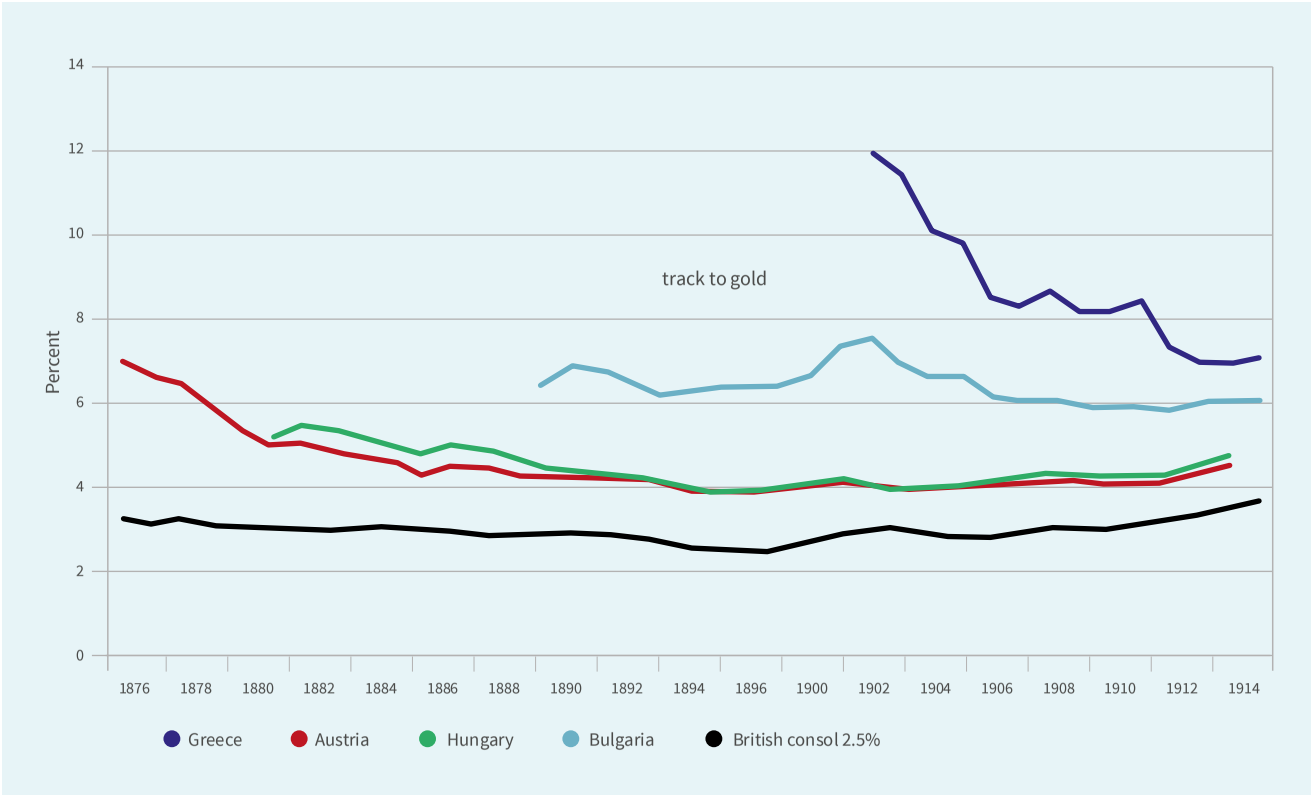
Figure 1 shows the respective series of the official discount rates. Some observations can easily be made. First, the discount rate varied widely across countries during the years of the gold standard. Austria-Hungary enjoyed the lowest interest rates; all other countries' rates stood 2 or even 4 percentage points higher. Second, the dates of change also differ across countries. This might signal that the scope of policy coordination among SEE countries was very limited or even absent. Instead, SEE countries tried to respond to the core country's bank rate changes. Third, data plotting suggests that until the interwar years discount rate changes were infrequent over time; the discount rate either remained unchanged for several years regardless of the phase of the country's business cycle and its difficulties in the external payments account or, in the wake of a crisis, it exhibited a sudden increase which was followed right afterwards by a sharp decrease. This might be explained by the fact that SEE countries were not always able to effectively play by the 'rules of the game', i.e. to raise the bank rate allowing the domestic market interest rate to rise enough so as to decrease the domestic price level. The notable exception is Austria-Hungary. However, this pattern changed in the interwar period. SEE central banks now appear more willing to pursue a more active discount rate policy aiming at stabilising their currency in view of their entry into the gold-exchange standard and, right after the wake of the crisis, at preserving their currency reserves. Upon their exit from gold, all countries started to follow more loose monetary policies allowing their rates to move downwards.

Figure 1
The official discount rate (1842 - 1944)



Notes: Austria-Hungary (1863-1913); Bulgaria (1879-1944); Greece (1842-1941); Romania (1880-1944); Serbia/Yugoslavia (1884-1944); Albania (1925-1940); Turkey (1932-1944); end-of-year; year averages for Serbia/Yugoslavia and Albania; in per cent per annum Source: Country data tables.

Figure 2.1
Current yield on fixed-rate government bonds in gold (gold standard, 1876-1914)



Notes: Austria (1876-1913), Hungary (1881-1913), Greece (1901-1914), Bulgaria (1890-1914), British consols (1876-1914) – Source: Country data tables.

(iii) Cheap foreign borrowing

Figure 2.1 depicts the government cost of borrowing for those countries for which a complete data series is available, e.g. Austria, Hungary, Greece, and Bulgaria, over the years of the classical gold standard; while Figure 2.2 plots the same variable for Greece, Romania and Serbia/Yugoslavia during the interwar years. The British consols yield is also depicted in both figures. Data plotting suggests that the entrance of a peripheral country to a monetary stability club or even the country's credible attempt of joining were viewed as a 'seal of approval' to borrow cheaply from the western European capital markets. The credible enforcement of the specie rule reduced sovereign risk and thus the risk premium. By contrast, whenever the countries failed and abandoned the specie rule and thus switched to a fiat currency or even defaulted on their foreign debts, government borrowing was much more expensive or even impossible.

(iv) Currency stabilisation

Figures 3 and 4 plot the exchange rate developments compared to the mint parity over the pre-WWI period and the interwar period. We see that even though all countries had passed bimetallic coinage legislation between 1867 and 1890,[92] thus signalling their long-term perspective of joining the gold standard, well up to the late 19th century no country had actually fixed its currency to gold. Adopting the gold standard was a slow and painful process. For example, it took Greece more than a decade to stabilise its currency after the 1898 foreign debt compromise. Serbia also experienced strong depreciation during the 1890s before it stabilised its currency after 1905. The same was true for Austria-Hungary, Bulgaria[93] and Romania, which also saw depreciations of their exchange rates for a long time before joining, albeit less heavy.[94]

Exchange rate stabilisation was achieved by all SEE countries at around the turn of the century. Favourable global macroeconomic conditions starting in the mid-1890s helped increase European trade and money integration (see Eichengreen and Flandreau 1997, Flandreau and Zumer 2004). In contrast, after WWI, all SEE countries joined the gold-exchange standard by *de jure* stabilisation after devaluing their currencies *vis-à-vis* the pre-war 'old' mint parity by a factor of more than 10. Bulgaria was the first one to stabilise its currency as early as 1924 and Serbia was the last one, as late as 1931.

Conclusions and further research topics

The SEE historical database is the result of long and intensive cooperation among various researchers from different countries of the region. The project is expected to deliver considerable benefit. It will serve as a stimulus for further research and a basis for comparative studies. For example, it might be interesting to compare the SEE experience with the experience of other peripheral countries in various geographical regions such as Asia or Latin America. This would help researchers to reach certain conclusions regarding the predicaments and idiosyncrasies of the peripheries.

The Data Collection Task Force (DCTF) of the South-East European Monetary History Network (SEEMHN) is now ready to proceed to the next step, which concerns the study of central banks' balance sheets. This topic was rather neglected during the years of the Great Moderation. However, after the 2008 crisis it became a key topic in monetary policy.

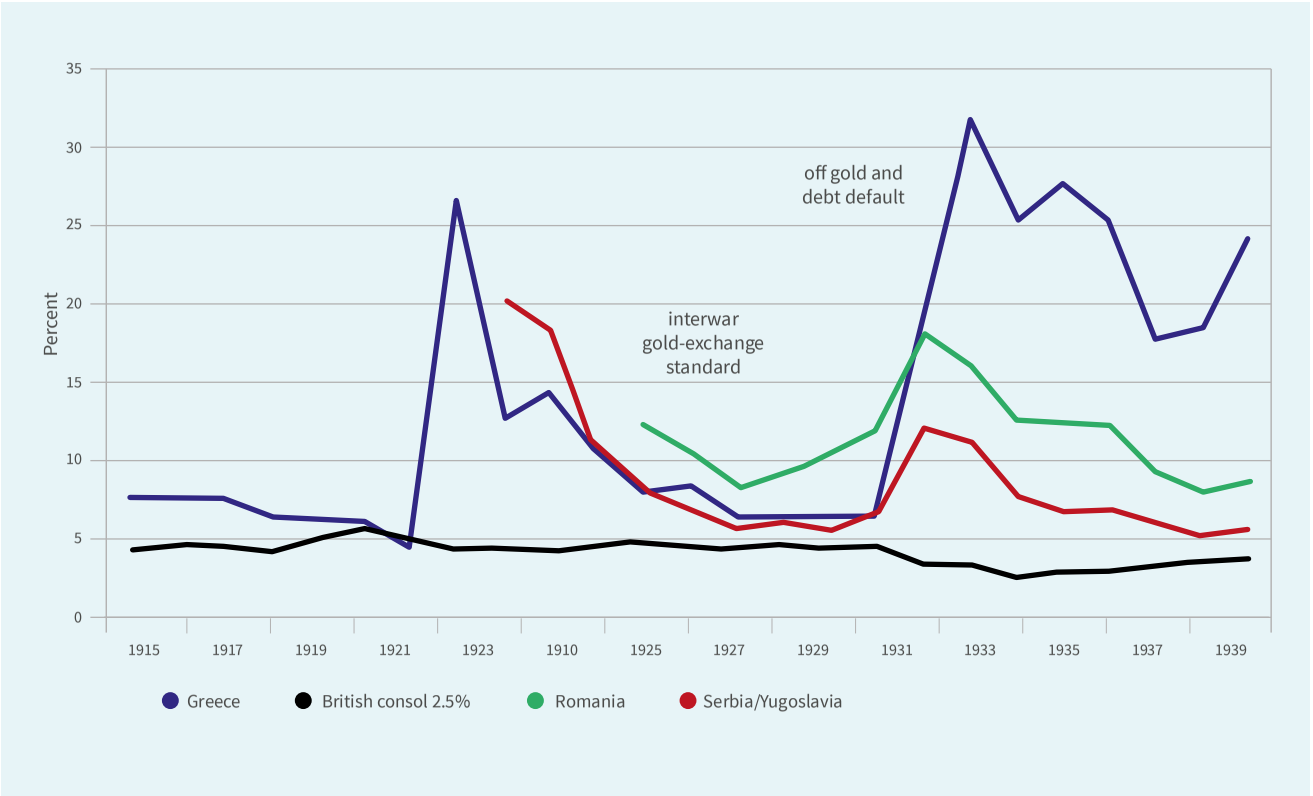
The DCTF considers the study of the balance sheets as of paramount importance since it can help us to answer key questions such as: (i) whether balance sheet size fluctuated over time relative to output, government debt and inflation; (ii) what the major institutional reforms in the monetary policy implementation framework and bank supervision after the interwar crisis were; (iii) whether the structure of the balance sheet reveals that the central bank,

92 Effectively, paper notes were 'loosely' backed by silver.

93 The depreciation rate of the Bulgarian leva has been estimated by using the agio (i.e. the gold premium against silver) until December 1906 and afterwards the exchange rate movement vis-à-vis the pound sterling. A detailed analysis of the agio in Bulgaria is provided in Dimitrova and Fantacci (2011).

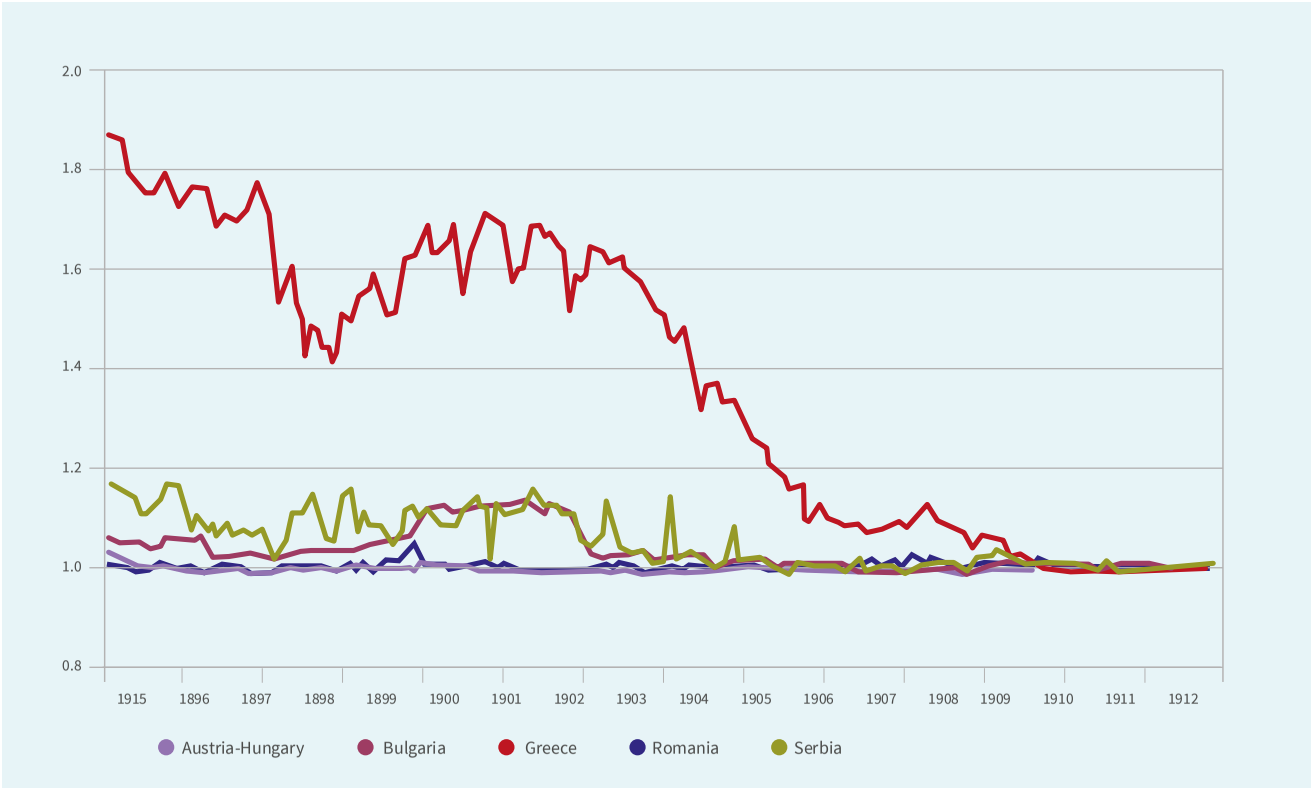
94 Greece joined gold in 1910, Romania in 1890, Austria-Hungary in 1892 and Bulgaria in 1906.

Figure 2.2
Current yeild on fixed-rate government bonds in gold (inetwar, 1915-1939)



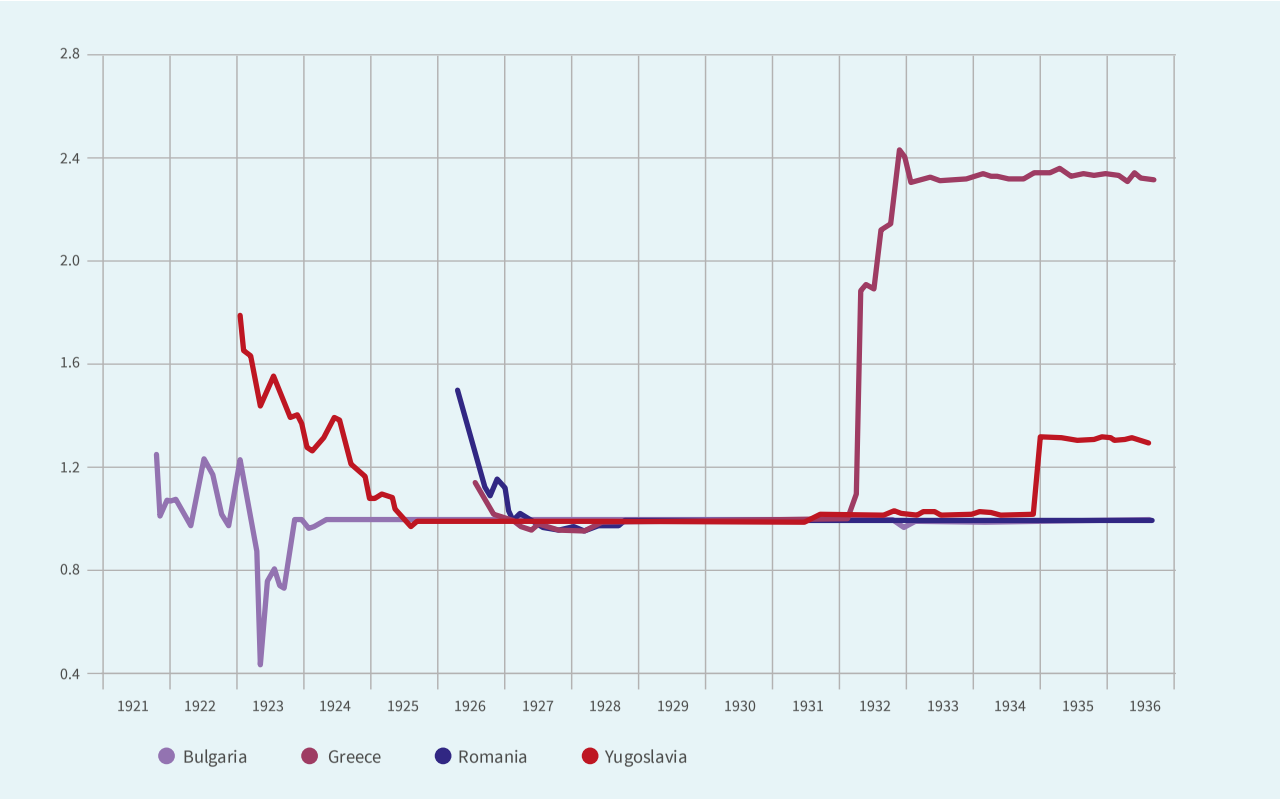
Notes: Greece (1915-1939), Romania (1926-1939), Serbia/Yugoslavia (1923-1939), British consol (1915-1939) – Source: Country data tables.

Figure 3
Current yeild on fixed-rate government bonds in gold (inetwar, 1915-1939)



Source: Morys (2014). Calculations based on data series provided in the countries' chapters.

Figure 4
Deviation from the gold-exchange standard parity
(November 1921 - September 1936)



Source: Morys (2014). Calculations based on data series provided in the countries' chapters.

amid the crisis, remained closely focused on the chosen monetary policy strategy of a currency peg; (iv) what monetary policy operations were conducted (i.e. liquidity-providing standing facility); (v) whether the central bank was deeply involved in government refinancing which in turn, indicated low profitability and high dependence on government interference. We think that the DCTF has a key role in this project since central banks themselves are better placed to provide these data, and to access their balance sheets is rather difficult for individual and external researchers. There is also need for further explanation and comments. Based on its past experience, the DCTF can provide the framework for harmonizing the documentation and presentation of the selected data.

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Chapter 6

Experiences from ten years of research on Danish historical monetary and macro-economic statistics[95]

Kim Abildgren[96]

Introduction

This paper outlines the main results from ten years of research on Danish historical monetary and macroeconomic statistics. The research project has had two principal objectives. The first objective has been an attempt to close some of the gaps in the existing Danish historical monetary and macroeconomic statistics. The second objective has been an attempt to enhance our insight into the monetary and macroeconomic history of Denmark through several new empirical analyses of a range of key issues.

Naturally, historical statistics is of interest in relation to economic-historical analyses and many issues within this line of research can only be enlightened through quantitative empirical evidence. The study of for instance low probability events ('tail events') such as currency crises, banking crises, debt crises or severe stock-market collapses requires a large number of data points covering different crisis as well as non-crisis regimes. Furthermore, long time series spanning across periods with different economic-policy regimes, other institutional differences and variations in the rate of real or monetary shocks to the economy etc. might also serve as the basis for useful robustness checks in relation to more contemporary empirical analyses.

Historical statistical data within the social sciences are always subject to questions regarding their accuracy and reliability. Frequently a number of judgements and estimates have implicitly or explicitly been made in an attempt to overcome problems with missing observations, incomplete coverage and sampling biases, changes in compilation methods and statistical classifications etc. Sometimes historical statistical information have originally been collected for particular legal or political purposes, which have to be taken into account when the reliability of such data sets are assessed. Most historical statistics can therefore only be expected to give a rough picture of the topics at hand.

The general idea of the project relates most closely to the works by Johansen (1985, 1991, 2015), which offer a collection of charts and economic-historical time series for Denmark. However, the collection of statistics presented in this paper has a much more comprehensive coverage of monetary and macroeconomic variables of relevance for the analysis of price stability and financial stability. Furthermore, the works by Johansen, op.cit., only contain data on an annual frequency whereas a substantial range of quarterly and monthly time series are included in the works presented in the paper.

95 During the years a considerable debt of gratitude to others has been accumulated. The author would like to take the opportunity to thank those many individuals who took the time to read draft versions of the works presented in this paper. That includes colleagues from Danmarks Nationalbank, participants at workshops and conferences as well as members of review boards, editors and referees. The advice and criticism from this wide range of people has been very helpful in improving and shaping the work. The paper is solely based on information which is within the public domain. Views and conclusions expressed in the paper are those of the author and do not necessarily represent those of Danmarks Nationalbank. The author alone is responsible for any remaining errors and shortcomings.

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In order to make the data sets available to a larger research community and stimulate further studies on the monetary and macroeconomic history of Denmark, they are available in electronic form as spreadsheets downloadable from the website of Danmarks Nationalbank in relation to various working papers, which also contain detailed descriptions of the sources and methods used for the compilation of the data.

Main research findings

Business cycles, financial factors and financial stability[97]

Using filtering techniques, this article explores the stylised facts and empirical regularities in the cyclical movements of a broad range of macroeconomic variables for the Danish post-World War II period.

As basis for the analysis the article compiles a new set of quarterly national accounts for Denmark since 1948. Previously consistent time series of quarterly national accounts were only available in Denmark for the period since 1971. Furthermore, in order to facilitate and enhance the analytical application of this new data set, the article also compiles a collection of seventeen other key quarterly macroeconomic indicators covering the Danish economy since 1948. The new long-span data sets cover almost nine complete business cycles, which gives more degrees of freedom and thus all else equal more reliable correlation estimates than those found in previous Danish studies based on substantially shorter time series.

In general, the findings of the article seem to be in line with what could be expected from mainstream macroeconomic theory and the empirical findings of similar studies in other countries as well as earlier studies for Denmark. The unemployment rate tends to lag the business cycle component in the real Gross Domestic Product (GDP), whereas interest rates, share prices and money tend to lead the cycle in output. The volatility in the business cycle component of real GDP was substantial lower in the period from the second half of the 1970s until the mid-2000s compared with the pre-1975 period. Similar results have been found for other countries, and the article suggests a number of reasons for this 'Great Moderation'.

Furthermore, the article includes an analysis of the monetary transmission mechanism in Denmark in the period 1948-2010 within the framework of structural vector autoregressive (SVAR) models. The new long-span quarterly data sets applied makes it possible to estimate SVAR models of a higher dimension than is usually found in the literature due to degrees-of-freedom problems. With a high-dimension SVAR model, the risk of omitting important variables in the analysis is reduced. The analysis in the article complements a number of earlier VAR studies on the monetary transmission mechanism in Denmark. However, the analysis in the article is the first Danish study to include asset prices, credit, money and the deposit banks' loan impairment charge ratio (write-downs ratio) among the endogenous variables.

The shape and direction of the impulse-responses to an increase in the short-term interest rate seem to be in line with what one could expect from mainstream macroeconomic theory: the long-term interest rate rises whereas real GDP, consumer prices, share prices, domestic credit and house prices decline. Furthermore, it seems that a shock to the short-term interest rate is followed by a significant increase in the deposit banks' loan impairment charge ratio reflecting that the declines in real GDP and asset prices and the increase in the interest rate level reduce the credit quality of the banks' customers.

Finally, the article includes a SVAR analysis of the real effects of shocks to financial stability. The results from the analysis indicate a significant and long-lasting negative impact on real GDP following an exogenous shock to the banking sector's loan impairment

97 Abildgren, Kim. 2012a. Business Cycles and Shocks to Financial Stability - Empirical evidence from a new set of Danish quarterly national accounts 1948-2010, Scandinavian Economic History Review, Vol. 60(1), pp. 50-78.

charge ratio. This is consistent with findings in recent economic-historical research for other countries, indicating that the economic recovery after a banking crisis tends to be slower than normal.[98]

This article examines the real effects of credit-supply shocks. As basis for the analysis the article compiles a new set of quarterly data on a range of key short-term economic indicators for Denmark spanning the past 90 years or so.

The core of the analysis is a series of structural vector autoregressive (SVAR) models estimated on this data set. The new long-span time series make it possible to compare periods with different economic-policy regimes, other institutional differences, variations in the rate of real or monetary shocks to the economy etc. The analysis finds no evidence of real macroeconomic effects from supply-shocks to credit from deposit banks in the periods 1922-1938 and 1981-2011, even though these periods contained several cases of severe banking crises.

In the article these findings are partly attributed to the special role played by bond-financed mortgage banks in the Danish financial system. The mortgage banks only grant loans against collateral and there is a large liquid market for mortgage bonds with a broad investor base. It seems therefore plausible that firms and households in the periods 1922-1938 and 1981-2011 were able to cover their borrowing requirement by shifting their financing pattern towards a higher degree of lending from mortgage banks at times when deposit banks had to reduce their credit exposures. Furthermore, there have also been comprehensive government interventions to safeguard financial stability during times of banking crises.

There seem, however, to be indications of real macroeconomic effects from credit-supply shocks in the period 1950-1980 where credit rationing and exchange controls served as important economic-policy instruments. This suggests that tight quantitative restrictions on credit intermediation might have real effects on the macro economy.

Overall the results from the analysis indicate that both the financial-system structure (including the possibilities for substitution between alternative sources of financing) as well as the extent of government intervention during banking crises play a key role to the significance of real macroeconomic effects of credit-supply shocks. These findings must be kept in mind when modelling the role of financial intermediaries in macroeconomic models.

Naturally, the findings above do not rule out that some firms or households might have found it more difficult to obtain funding during periods with banking crises and that this might have had real effects at the micro level in the form of e.g. lower investments or even the failure of some firms.

Furthermore, the findings do not imply that there are no negative real macroeconomic effects of banking crises. But the results suggest that the macroeconomic transmission mechanism of banking crises in Denmark have not primarily been through a significant contraction in the supply of credit from deposit banks, which have affected the rest of the economy via lower investment and consumption by credit-constrained firms and households. The negative effects of banking crises seem rather mainly to have been transmitted to the real macro economy via other channels. This could for instance be through changes in the saving behaviour of households and firms due to weakened confidence in the banking sector and greater uncertainty about the future economic outlook.[99]

Since the outbreak of the most recent international financial crisis, there has been a growing academic research interest in macro stress tests of the financial system. Macro stress tests are designed

98 Abildgren, Kim. 2012b. Financial structures and the real effects of credit-supply shocks in Denmark 1922-2011, European Review of Economic History, Vol. 16(4), pp. 490–510. (ISSN 1361-4916)

99 Abildgren, Kim. 2014b. Far out in the tails – The historical distributions of macro-financial risk factors in Denmark, Danish Journal of Economics (Nationaløkonomisk Tidsskrift), Vol. 152(1), pp. 1-31.

to assess the robustness of the financial system against adverse shocks to the macro economy, and they usually serve as the basis for discussions and actions on potential threats to financial stability and as a framework for communicating such risks. There is therefore also a huge focus on refining and expanding the range of approaches used for macro stress testing among financial regulators and central banks. Better stress tests have the potential to improve the basis for assessment of financial stability and the need for macro-prudential regulations.

With hindsight, it has become clear that the macro stress tests used by the authorities in many countries prior to the most recent financial crisis did not pay sufficient attention to low-probability but high-consequence scenarios.

Economic history is rich on extreme events which is illustrated in this article by taking a closer look at the frequency and magnitude of extreme events in the economic history of Denmark on the basis of a new comprehensive data set with long-span time series on macro-financial risk factors at an annual frequency compiled by the authors. The article suggests using distributions of macro-financial risk factors based on long-span historical time series as inspiration in relation to low-probability scenarios in macro stress tests.

However, all approaches usually have pros and cons. The article therefore discusses a number of challenges and limitations that are related to the use of long-span historical time series as inspiration in relation to low-probability scenarios. Perhaps the most important contribution from analyses of distributions of macro-financial risk factors based on long-span historical time series is that they serve as a memory of the past. They remind us that extreme events might occur more often than we would think, if we only relied on historical experiences from relative short data samples.

Balance sheets, credit and pubic finance[100]

To date projects related to historical national-accounts have – both in Denmark and internationally – only focused on the real side of the economy. This article presents a first attempt to construct a set of annual financial-account stock data for Denmark 1875-2005. Previously consistent time series of annual financial account stock data for Denmark have only been available for the period since end-1994. Furthermore, the article addresses some of the more methodological and conceptual aspects of using financial accounts as a framework for organisation of historical financial statistics.

The annual financial-account data constructed in the article are based on a comprehensive range of historical financial statistics. The data presented are broken down by 8 institutional sectors (central bank; deposit banks; mortgage banks; life-insurance companies and pension funds; investment associations; central government; other residents; and non-residents) and 6 main types of financial instruments (gold and SDR; currency; loans and deposits; bonds, shares and mutual funds shares; insurance technical reserves; and capital and reserves).

The overall conclusion in the article is that financial accounts constitute a useful framework for organising and analysing financial data even when data sources are somewhat fragmented and sparse, which is often the case in relation to historical financial statistics. Financial accounts can be useful in an attempt to paint a more coherent picture of the historical development of the financial system and the financial structure. Utilising accounting identities a system of financial accounts allows e.g. for the compilation of the net financial asset position of the non-financial private sector, even when no separate balance-sheet statistic covers this sector. It would therefore be interesting if future projects on historical national accounts would make an attempt to cover

100 Abildgren, Kim. 2008a. A 'First Go' on Financial Accounts for Denmark 1875-2005, Scandinavian Economic History Review, Vol. 56(2), pp. 103-121.

long-span time series of both real-economy accounts as well as financial accounts stock- and flow-data.[101]

The article explores the trends and cycles in credit over the past six decades or so based on new annual time series data on credit to Danish residents by sector and industry 1951-2008 constructed by the author.

The article finds a structural shift in the relationship between growth in real credit and economic activity around 1980. In the post-1980 period characterised by increased influence from market forces due to financial liberalisation and internationalisation the swings in real credit growth have been substantial relative to the economic activity compared to the pre-1980 period where credit rationing and exchange controls served as important economic-policy instruments. The house price development seems to have played an important role for the credit dynamics.

Furthermore, according to the analysis there seems to have been a shift over time in the short-term cyclical behaviour of credit to firms. Real commercial credit was contemporaneous with private sector real GDP in the pre-1980 period but has lagged the business cycle with one year in the post-1980 period. This might reflect the more restricted access to credit in the pre-1980 period. Firms take their intertemporal decisions regarding real investments and financing simultaneously. Credit rationing and exchange controls in the pre-1980 period might therefore have provided an incentive for firms to raise loans at an early stage in the business cycle in order to be sure to have command over the funding necessary for their planned investments.

Another possible explanation suggested in the article is the increased significance of commercial and industrial foundations in the Danish economy. Industrial foundations might be seen as 'patient owners' without an urgent need for return on equity. In step with the increased capital accumulation in those foundations it might have been possible for Danish firms to finance larger shares of their fixed investments in the initial stages of an upturn with own funds from retained earnings rather than loans from domestic and foreign credit institutes.[102]

This article analyses the cyclical impact on the general government budget balance based on new annual time series data on Danish general-government net lending since 1875 constructed by the author. Previously consistent time series on the general government's net lending have only been available for Denmark since 1971.

The analysis indicates that the cyclical impact has increased over time in step with the increased level of automatic stabilisers in the economy (i.e. increased tax rate and unemployment benefit compensation rate). However, the cyclical impact on the general government budget balance seems most often to have been relatively modest compared to the impact from non-cyclical factors (i.e. discretionary changes in fiscal policy and changes from extraordinary or structural factors).

Even though Denmark today has one of the largest public sectors in Europe, relatively speaking, the Danish general government's deficit has only significantly exceeded 3 per cent of GDP during World War II and in the early 1980s. However, the calculations of the cyclical budget volatility also seem to suggest that the cyclically adjusted budget balance has to be in surplus in periods with strong economic growth if the automatic stabilisers should be allowed to work freely during a cyclical downturn without violating a 3-per-cent budget criteria (the reference value in the Maastricht Treaty).

101 Abildgren, Kim. 2009a. Credit Dynamics in Denmark since World War II, Danish Journal of Economics (Nationaløkonomisk Tidsskrift), Vol. 147(1), pp. 89-119.

102 Abildgren, Kim. 2006. Estimates of the Danish general government budget balance and the cyclical budget volatility 1875-2005, *Danish Journal of Economics (Nationaløkonomisk Tidsskrift)*, Vol. 144(3), pp. 287-303.

Prices and wages[103]

The article presents a consumer price index for Denmark 1502-2007 at an annual frequency compiled by the author. Furthermore, the article discusses some of the more conceptual issues relating to compilation of historical price indices and the measurement of inflation.

For the post-1815 period the CPI index is based on existing figures whereas new data have been constructed for the pre-1815 period. Due to limited data availability the CPI is based on 'silver prices' for the period 1502-1640. Since the Danish currency depreciated vis-à-vis silver during this period, the pre-1640 CPI figures clearly underestimate the actual level of inflation.

The inflation rate in the period since 1640 has on average been just below 2.0 per cent per annum. There does not appear to have been a continuous rise in the price level, but rather some periods with price-level stability, some periods with low inflation, some periods where prices fell, and some periods with a strong and more sustained inflation.

However, disregarding periods with actual war inflation and the deflation during the first two decades or so after the end of the Napoleonic Wars, there seems only to have been one major exception from the overall picture of price stability in the post-1640 period: The first four decades following the end of the Second World War where inflation expectations lost their anchor.[104]

This article presents new annual input-output based time-series data for the underlying domestic inflation in Denmark 1903-2002 compiled by the author and analyses the inflationary development during the last century. The data set is constructed by stripping the development in the private consumption deflator of price increases caused by the direct and indirect content of imports, indirect taxes and gross rents. To the best of our knowledge such long time series of input-output based underlying domestic inflation have not previously been compiled for any other country. The article also discusses a range of conceptual issues in relation to the interpretation and use of input-output based domestic inflation measures.

The analysis seems to suggest that an input-output based underlying inflation measure might paint a fundamentally different picture of the inflationary development than the private consumption deflator in periods with large structural movements in the relative prices or periods with high inflation volatility. The most marked example is the period 1973-1986 characterised by large increases in indirect taxes and gross rents as well as a high and volatile element of imported inflation due to large oil price movements and frequent devaluations of the Danish krone.

A low level of input-output based underlying inflation does not necessary imply a low future level of inflation. The input-output based measure of underlying domestic inflation reflects the development in wages and gross profit per produced unit in domestic goods and services delivered for private consumption. A temporary drop in the level of underlying inflation, e.g. around the second oil-price shock, may therefore partly reflect a temporary squeeze of profit margins that later get restored.

An input-output based underlying inflation measure can provide insights into the inflation process that are not easily uncovered from other economic indicators. Despite the relatively comprehensive calculation procedure an input-output based measure of underlying inflation can therefore be a useful supplement to other types of information (e.g. the development in wages, output gap etc.) in relation to both an interpretation of the historical inflation development and as an input into a broad assessment of the current inflationary environment.

103 Abildgren, Kim. 2010. Consumer Prices in Denmark 1502-2007, Scandinavian Economic History Review, Vol. 58(1), pp. 2-24.

104 Abildgren, Kim. 2007. Input-Output Based Measures of Underlying Domestic Inflation: Empirical Evidence from Denmark 1903-2002, Economic Systems Research, Vol. 19(4), pp. 409-423.

However, input-output based measures of underlying domestic inflation are on the other hand hardly suitable to be used as the targeted measure of inflation by inflation-targeting central banks. Not only because of the high volatility in such inflation measures but also due to the relatively complicated calculation procedure which makes such inflation measures less transparent and therefore more difficult to communicate to the general public than 'headline' inflation figures.[105]

This article traces the possible links between the monetary regime and the institutional setting of the labour market in Denmark over the past 100 years or so based on a new annual data set on the Danish labour market 1875-2007 constructed by the author.

The results of the analysis seem to indicate that parts of the labour market structure are endogenous. The longest wage contract terms are found towards the end of the pre-World War I Classical Gold Standard period – characterised by price-level stability – and during the period since the mid-1990s that has seen a firm fixed exchange-rate policy and low and stable inflation. The shortest contract lengths are observed in the interwar period with high inflation volatility. Inflation indexation of wages was used most extensively in the Bretton Woods period and during the soft peg period of the 1970s when inflation was high and rising.

The degree of nominal wage rigidity in the economy is therefore not necessarily approximately constant, as it is otherwise assumed in many New Keynesian models. Explicit modelling of the links between the monetary regime and labour market structures might be particularly important if such models are to be used for analysis and comparison of alternative monetary regimes without being subject to the Lucas critique.

105 Abildgren, Kim. 2009b. Monetary Regimes and the Endogeneity of Labour Market Structures – Empirical Evidence from Denmark 1875-2007, European Review of Economic History, Vol. 13(2), pp. 199-218.

Interest rates and exchange rates[106]

This brief article compiles a new data set on annual interest rates in Denmark 1875-2003 and paints a broad picture of the development in nominal and real interest rates in Denmark since 1875, when the krone was introduced as the Danish currency unit.

The new data set consists of three different short-term interest-rate series (the official discount rate, the private banks' average deposit rate, and the market rate of discount/money market rate) and two different long-term interest-rate series (the government bond yield and the yield on mortgage-credit bonds).

In the period 1875-1945 the average short-term and long-term nominal interest-rate level was around 4 to 5 per cent per annum. There was an upward trend in nominal interest rates during the 1960s and 1970s, and long-term Danish government bond yields reached a post-1875 all-time high of just above 22 per cent in 1982. The government debt increased rapidly, and a fear that Denmark was on the verge of 'state bankruptcy' began to rise. In the beginning of the 1980s the yield on long-term Danish government bonds exceeded the yield on long-term Danish mortgage-credit bonds for the first time since the period around World War I. This highlights the extent of the crisis in the Danish economy. A switch towards a more stability oriented economic policy in Denmark – combined with the international decline of inflation rates during the 1980s and the beginning of the 1990s – caused a marked downward trend in both inflation and nominal interest rates in Denmark. In 2003 the Danish money market rate reached a post-1875 all-time low.

Traditional measures of the ex-ante real interest rate (nominal interest rate less contemporaneous rate of inflation) show average short-term and long-term real interest rates in Denmark around 3 per cent per annum for the period since 1875. Furthermore, such calculations indicate

106 Abildgren, Kim. 2005a. Interest-Rate Development in Denmark 1875-2003 – A Survey, Danish Journal of Economics (Nationaløkonomisk Tidsskrift), Vol. 143(2), pp. 153-167.

a rather high long-term real-interest-rate level during the late 1980s and the first half of the 1990s. However, the latter result might reflect a high degree of persistence in inflation expectations.[107]

The article offers an analysis on the empirical evidence regarding long-run relative purchasing-power-parity (PPP) convergence based on a new annual data set on real effective exchange-rate indices for Denmark 1875-2002 compiled by the author. To the best of our knowledge such long time series of real effective exchange rates has not previously been constructed for other countries.

Two real effective krone-rate indices with respectively wholesale prices and consumer prices used as deflators are presented. All indices are constructed as geometrically weighted chain indices with current (i.e. annually updated) trade weights based on Denmark's foreign trade in goods with 15 of its largest trading partners. During each year in the period since 1875 these 15 countries accounted for at least 77 per cent of Denmark's total foreign trade in goods.

To avoid the risk of bias in the results due to outliers around the German hyperinflation in the early 1920s, the data sets are analysed for two separate sample periods (1875-1913 and 1924-2002). The results of the analysis based on univariate unit-root testing of the real effective krone-rate index with wholesale prices as the deflator support a hypothesis of long-run relative PPP convergence. Half-lives of real exchange rate shocks are estimated to around 4 years in the post-1923 period and 2 years in the pre-1914 Classical Gold Standard period.

The fastest mean reversions towards relative PPP seem to have occurred in those periods where Denmark has pursued a fixed-exchange-rate policy vis-à-vis the majority of its trading partners and thus in those periods with the lowest volatility in the nominal effective krone rate. These results might reflect that a low level of nominal exchange-rate volatility facilitates cross-border goods-market arbitrage and thereby supports relative PPP convergence. However, it might also reflect that in order to maintain a credible fixed-exchange-rate regime the domestic price and wage development has in general to be in line with that of the currency anchor. A stationary index for the real exchange rate could therefore also be the result of domestic economic policies (i.e. fiscal policy and other economic policies) and/or behaviour among labour market partners supporting the requirements for maintaining a fixed-exchange-rate regime.[108]

The article offers an account of the Danish road to free cross-border portfolio flows and pure exchange-rate targeting since the breakdown of the Bretton Woods system, and analyses the short-term relationship between capital flows related to portfolio investments and changes in the Danish nominal krone rate vis-à-vis the euro (D-mark prior to 1999) utilising a data set on monthly private cross-border portfolio gross and net flows to and from Denmark 1984-2004 constructed by the author.

The main finding is that portfolio investments are important to short-term exchange rate determination and that the sign of the estimated effect is as expected: net inflows of capital strengthen the exchange rate. This result is robust to a division of the data sample into sub-periods as well as to an inclusion of central-bank intervention in the foreign-exchange market and changes in the short-term interest-rate spread vis-à-vis the currency anchor as endogenous explanatory variables. Portfolio flows in Danish bonds appear to be driving the results prior to the introduction of the euro. Since then the main driver has been portfolio investments in foreign shares.

Over time there appears to have been a declining effect on the krone-rate from portfolio flows which

107 Abildgren, Kim. 2005b. Real Effective Exchange Rates and Purchasing-Power-parity Convergence: Empirical Evidence for Denmark, 1875-2002, Scandinavian Economic History Review, Vol. 53(3), pp. 58-70.

108 Abildgren, Kim. 2008b. Short-term impacts on exchange rates from portfolio flows to and from Denmark 1984-2004, Danish Journal of Economics (Nationaløkonomisk Tidsskrift), Vol. 146(2), pp. 156-177.

might be seen as the result of increased credibility of the Danish exchange-rate peg.[109]

The article takes a closer look at the frequency distribution of nominal price changes in the foreign exchange markets for a sample of 10 European exchange-rate pairs since 1740. As basis for the analysis the article compiles a new set with quarterly bilateral nominal exchange rates for ten European exchange-rate pairs spanning the period 1740-2012. This is the first study on nominal exchange-rate changes for a large number of exchange-rate pairs based on quarterly data for spanning almost three centuries.

The article finds 2-7 occurrences of quarterly changes in the exchange rates during the past 273 years, which are larger than eight standard deviations from the mean (a so-called 8-sigma event). This clearly illustrates the well-known fact that quarterly nominal exchange-price changes are far from following a normal distribution. An 8-sigma event can only be expected to occur once every 2.009E+14 years under the normal distribution.[110] To put this figure in perspective it can be noted that the period that has elapsed since the 'Big Bang' of the Universe is approximately 13.82 billion (1.382E+10) years.

The fat-tailed nature of quarterly nominal exchange-rate changes seems to a large extent to be the result of structural breaks caused by extreme economic events such as changes of exchange-rate regimes, banking crises, wars, episodes of high inflation or hyperinflation etc. The analysis clearly illustrates the risk of seriously underestimating the probability and magnitude of tail events when frequency distributions of nominal exchange-rate changes are assumed fixed and assessed on the basis of fairly short historical data samples without taking into account the possibility of structural breaks.

The article suggests that financial institutions and regulators should have an eye for the long-term historical perspective when designing sensitivity tests or 'worst case' scenarios in relation to risk assessments and stress tests.

Final remarks and scope for further research

A collection of historical statistics as the one presented in this paper can never be regarded as stationary. The arrival of new historical studies based on archive material might allow for revisions and improvements of existing historical time series and the construction of data sets within new areas or for time periods not yet covered. Furthermore, the introduction of new definitions and compilation methods in contemporary statistics often call for the reconstruction of existing collections of historical statistics.

The compilation and reconstruction of high-quality historical statistics is a time-consuming exercise that requires a thorough knowledge of the economic-historical development in order to deal with the large number of judgements and estimations that implicitly or explicitly have to be made in order to overcome problems with missing observations, incomplete coverage and sampling biases, changes in compilation methods and statistical classifications etc. It can, however, be difficult to find journals that are interested in publishing works that mainly focus on compilation and reconstruction of economic-historical data, especially data sets that are only related to a small country like Denmark. Within many sciences such as geoscience, ecology, biology, chemistry and physics there exist a range of so-called data journals that publish high-quality peer-reviewed papers documenting new research data sets by describing the details of collection, sources and compilation methods, quality assessments, file formats, etc. The goal of these journals is to make new data sets available to a wider research audience and at the same time give credit to the creators of the data sets for their effort without any requirements of novel analytical applications of the data. Unfortunately such journals are not yet available within the fields

109 Abildgren, Kim. 2014a. Tail events in the FX markets since 1740, Journal of Risk Finance, Vol. 15(3), pp. 294-311.

110 Scientific notation, i.e. 2.009E+14 means 2.009 times ten raised to the power of 14 (2.009x10145).

of economics and economic history. The emergence of such journals could stimulate future generations of economists and historians to allocate the time and effort that is required to meet the challenges associated with compilation of economic-historical data sets.

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Concluding remarks Inflation: Does it still matter today?

Aurel Schubert[111]

Thanks to the organisers for inviting me to this interesting workshop.

As someone in charge of Statistics at the European Central Bank (ECB), I am not an archivist but I produce (some of) the material which you will be archiving in the future.

Jakub had started the workshop with two quotes, one from Josef Stalin and one from Joseph Schumpeter. I want to start my remarks also with a quote, not from a blood-thirsty dictator but (also) from a visionary economist. I want to quote and thus pay tribute to one of the founding fathers of the Euro, the Hungarian-born Baron Alexandre Lamfalussy, who passed away in May 2015.

As he said in 1996 in the context of the preparations for the European Monetary Union, Nothing is more important for monetary policy than good statistics'. I consider this as a very fitting motto for this workshop.

Good statistics are a necessary but by no means sufficient precondition for good policy making, not only in the area of monetary policy but also for financial stability or for banking supervision – all tasks of the ECB.

But no good data without good meta-data. These are like Siamese twins. Data always need to be accompanied by good and comprehensive meta-data, so that users and analysts understand what the data includes or does not include.

But Lamfalussy said more: data is not only important for decision making but also to monitor the effects of the policy making, and also for explaining the decisions, i.e. for communication purposes.

There are three sides to the policy triangle, data (with meta-data), research and analysis, and policy making. But policy making generates new realities and with that new data, creating a feedback loop back to policy making.

Good examples for the communication aspect of data are the press conferences of the ECB President every six weeks right after the monetary policy meetings of the ECB´s Governing Council. There, data, new economic data, play an important role in the explanation and justification of the respective policy decisions.

And Lamfalussy also said that if people cannot check and understand decisions with data, policy makers will lose credibility and trust. And credibility and trust are crucial for policy making just as well as for statistics.

But we should not forget that, due to the power of data, control of the data production and dissemination is also power. There is a big and tempting potential to misuse data for (political) propaganda purposes, as a weapon in propaganda fights.

Most of these aspects of statistics have been addressed or are reflected in the papers presented at this workshop.

I enjoyed reading and listening to all of them and I have great respect for the impressive amount of work done by the authors and presenters.

111 European Central Bank

Let me provide some specific comments on the papers:
The compilation of historical economic and financial data is fundamental for economic research and policy making The contributions collected in this volume, focusing on the creation of such data collections and on their use, have provided a nice historical perspective on the building up of historical data collections as well as a couple of illustrative examples of their use.

Furthermore, they serve as good demonstrations of the important work undertaken in these areas in both academia and by Central Banks.

On the origins of data collection

Chapters 1 and 3 of this volume give deep insights into the origins of regular research work performed by institutions like the Slovak National Bank and Spanish financial institutions, and highlight the goals achieved despite a sometimes unfavourable external environment. The lack of human resources, scarcity of data sources and political instability put these pioneering works in a sharp contrast with the methods currently applied for data collection and analysis.

However, in spite of past data limitations, there are still lessons that can be learned from the past. Hence leading research institutions, like the FED and the BIS, make substantial efforts to gather past data, regardless of constraints as regards its availability (chapters 2 and 4). As these data cannot be interpreted without reference to the historical context, the collection of the corresponding metadata is also important and carried out with dedication.

In this context, it is worth mentioning the work of the Irving Fisher Committee on Central Bank Statistics (IFC). The IFC is a forum of central bank economists and statisticians, as well as others who want to participate in discussing statistical issues of interest to central banks. The IFC is established and governed by the international central banking community and operates under the auspices of the BIS. The IFC has adopted the name of Irving Fisher (1867-1947), an internationally renowned economist and statistician, for his work on economic measurement and many other topics related to monetary and financial stability of interest to central banks. His wide-ranging contributions to economics and statistics and his multi-disciplinary approach serve as an example for the IFC's objectives and activities, and for central banking statistics in general.

Among many challenges in the area of statistical work, changes over time in statistical concepts and methods and the standardisation of multi-national data sets, require specific expertise and dedicated efforts.

As exemplified today, Central Banks and Statistical Institutes can provide an important contribution in this field. This holds also for recent efforts in the field of data collection by Central Banks, in particular for financial stability purposes.

New ways of using data collections

The compilation of historical data is crucial for research purposes, in particular in terms of cyclical analyses. This task is successfully undertaken by international institutions like the BIS and the ECB, which compile long time-series for the analysis of economic developments with a long-term perspective. When used together with archival information, like the one stored within the FED information preservation project, these series increase the understanding of the economic processes and thus also contribute to enhance future policy-making.

For instance, recently, benchmarking of ups and downs in the macro-economy and of financial markets with historical developments has become an important tool for identifying similarities and differences with respect to causes and driving factors of economic and financial crises.

However, as it is clearly implied by the South-East European Monetary History Network (SEEMHN) project (chapter 5), the success in compilation and collection of past data requires understanding of past

standards and institutions. Only when having methodological changes closely scrutinised, is it possible to obtain such impressively long time series as have been complied by the Bank of England in good quality.

Finally, let me address four aspects that I think are particularly important when discussing the compilation and use of data collections:

1. Meta-data

These are crucial for a right understanding and policy use of data, also in order to avoid misunderstandings and misinterpretations. Questions like: How have the data been compiled? What is the geographical scope? come to my mind in the context of today´s presentations. Unfortunately, there is a tendency that too little attention is paid to comprehensive and up-to-date meta-data, or the efforts needed are crowded-out by more urgent tasks. Linked to this issue is also the increasingly important question of standardisation. Special attention needs to be paid to these issues.

2. Quality of data

We at the ECB spend very large efforts of assuring the quality of the data. Bad quality can easily lead to wrong decisions. Concerns and doubts about the quality of the data can have very negative effects on the credibility of the data producers. Quality reports, quality commitments and quality audits are tools to create and maintain confidence and trust.

3. Falsification of data (actual, perceived or claimed)

The issue was mentioned in the Slovak paper (chapter 1) with respect to the times of World War II but it is an eternally important question, again today. Just to mention two recent known and well documented cases of political manipulations of data, Argentina and its inflation rate (The ' K-Index'), and Greece and its fiscal numbers, especially during the years up to 2008/2009. Things go even so far in Greece, that the first person that tried to compute the numbers correctly and to publish them faces criminal investigations. It can be personally very dangerous to produce correct statistics if they are politically not opportune. Doing your job right might be dangerous to your health. Something, we also heard about in the Slovak paper. Also the Argentinian and the Greek episodes of falsification will be rather sad but no doubt interesting research topics for future researchers.

4. Trend towards Microdata

The increasing heterogeneity of our economies and societies shows the limits of relevance of aggregated statistics (averages). Distributional information is also required in order to give policy making the relevant information. In order to cater for this need, statisticians increasingly start collecting micro- or granular data, e.g. transaction level data, instrument level data, or data on individual economic agents. Examples are for instance the data generated by the EMIR-Regulation on derivatives trades, or the Money Market Statistical reporting (MMSR) of the European Central Bank. These massive amounts of data – EMIR created already several billion data points within its first year – will create new challenges for future archives and archivists. It is important to be prepared for his data deluge early on.

To summarise

Producing statistics is a core task of modern central banks, not just a support function for policy making. That is also why most central banks have now a separate statistics department, independent from economics or research. Central banks have the comparative advantage for all data on the financial sector but they also use a lot of other data for, what we call today, evidence based policy making. Producing central banking statistics is not '*l'art pour l'art*', it serves concrete information and analysis needs for policy making. Policy making without reliable data is like driving at high speed in thick fog, possibly even without fog lights.

But central banks statistics are also a public good, paid for by society and available to and accessible for society. Therefore, statisticians perform a public service, working in a very relevant field.

They should (be empowered to) keep up the good work.

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