

Ragnar Frisch and the Econometric Society

by

Olav Bjerkholt

1. Introduction

The *Econometric Society* was founded on 29th December 1930. The constitutional assembly, or the "organization meeting" as it would be referred to, was held in Statler Hotel, Cleveland, Ohio at a gathering during the annual joint meeting of the American Economic Association and the American Statistical Association.¹

Sixteen persons, who were participating in either one of the professional association meetings, took part in the organization meeting. The "organizing group" comprised eleven Americans (Harold Hotelling, Frederick C. Mills, William F. Ogburn, J. Harvey Rogers, Charles F. Roos, Malcolm C. Rorty, Henry Schultz, Carl Snyder, W.A. Shewhart, Norbert Wiener, Edwin B. Wilson) and five Europeans, of which three were Norwegians (Ragnar Frisch, Oystein Ore, Ingvar Wedervang) and two Austrians (Karl Menger, Joseph Schumpeter).²

Joseph Schumpeter was elected chairman of the meeting. Ragnar Frisch had drafted a constitution which was adopted with minor revisions.³ Schumpeter's motion that the Society should be considered founded was accepted unanimously at ten o'clock p.m. The meeting proceeded to elect the first President and Council of the Society. Irving Fisher, notably absent from the meeting, was elected President.⁴

As Council members were elected seven Europeans and three Americans, In addition to Fisher the first Council consisted of Charles F. Roos and Edwin B. Wilson from U.S.A., while the European members were Luigi Amoroso, Ladislaus von Bortkiewicz, Arthur L. Bowley, François Divisia, Ragnar Frisch, Joseph Schumpeter and Wl. Zawadzki.

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Was the founding of the Econometric Society an important event in the history of econometrics (apart from the fact that the term *econometric* hardly would have gained the same general usage without the foundation of the Society)? An unusual feature of the founding of Econometric Society as an international scientific association was that the very discipline to be promoted, i.e. *econometrics*, was not well defined. Not only was 'econometrics' not in the

dictionaries yet, but very few, indeed, had come across the word in writing. The Society was at the outset without any financial resources apart from the membership fee, and failed in the first efforts at finding sponsors of a worthy cause. Not only was the organizing group small but the active membership remained relatively small for several years.

The founders and early members of the new organization may have had somewhat different visions and aims for the new vehicle, and perhaps also different motives for joining. In the midst of the new Society was a small but highly internationally oriented group of economists who represented a view on the future development of economics as a science that in the ensuing years came to exert a strong influence. One of these was Ragnar Frisch.

Ragnar Frisch played an important role for the initiation and development of the new organization in three major ways: First, Frisch played an important role in developing the idea of an econometric association and took very active part in the concrete steps that led to the foundation. Secondly, Frisch played a major role in the organization of and as contributor to the early Econometric Society Meetings in Europe.⁵ Thirdly, Frisch was elected as the first Editor-in-Chief of the Society's journal *Econometrica* and held that influential position throughout the formative years of the the new association and journal.

Frisch was thus more than anyone else a forceful initiator of the new international organization and journal and was recognized as such by his co-founders. The period in which Frisch gave so much of his time and energy to further the econometric cause through organizational and editorial efforts, i.e. from 1926 till the outbreak of the World War II, was coinciding with his most productive period as an econometrician. In this period he developed his major themes, also laying the foundation for his postwar work, and produced most of the publications which made a lasting impact on the profession.

In the following we shall review various aspects of the foundation and the formative years of the Econometric Society and the *Econometrica* and the role of Ragnar Frisch paying only scant attention to his scientific contributions in these years.

2. The birth of econometrics

What was the discipline to be promoted by the newly founded society? The constitution adopted at the organization meeting carried the subtitle that would forever accompany the name of the Society as a motto and explanation of the meaning of econometrics: '... the advancement of economic theory in its relation to statistics and mathematics.' Regarded as a definition this is far from giving a perfectly clear concept of what econometrics should be. It established, however, the priority of economic theory over mathematics and statistics within the new interdisciplinary field.

Paragraph one of the constitution elaborated upon the motto by stating that the object of the Society should be to '... promote studies that aim at a unification of the theoretical-quantitative and the empirical-quantitative approach to economic problems and that are penetrated by constructive and rigorous thinking similar to that which has come to dominate in the natural sciences. Any activity which promises ultimately to further such unification of theoretical and factual studies in economics shall be within the sphere of interest of the Society.'

The coining of *econometrics*

The meaning of econometrics as stated in the constitution drafted by Ragnar Frisch, bears a striking relationship to formulations used by Frisch in 1926, when writing down a programme for his own research in economics. In that year he also coined the term *econometrics*.⁶

The paper *Sur un problème d'économie pure* by Ragnar Frisch appeared in a not very widely distributed series of papers issued by the Norwegian Mathematical Association at the University of Oslo. It was Frisch's first paper in economics, and had been written in Paris in 1923.⁷

The paper would deserve a place in the history of economics, even for no other reason but for the opening paragraph, which introduced the first of Frisch's many - and by far the most important - contributions to the terminology of the discipline:

Intermédiaire entre les mathématiques, la statistique et l'économie politique, nous trouvons une discipline nouvelle que l'on peut, faute de mieux, désigner sous le nom de *l'économétrie*. L'économétrie se pose le but de soumettre les lois abstraites de l'économie politique théorique ou l'économie 'pure' d'une vérification expérimentale et numériques, et ainsi de constituer, autant que cela est possible, l'économie pure en une science dans le sens restreint de ce mot.⁸

In English translation:

Intermediate between mathematics, statistics, and economics, we find a new discipline which for lack of a better name, may be called *econometrics*. Econometrics has as its aim to subject abstract laws of theoretical political economy or 'pure' economics to experimental and numerical verification, and thus to turn pure economics, as far as possible, into a science in the strict sense of the word.⁹

From then on Frisch started to use "econometric" and "econometrics" in his communication with economists and statisticians.

The roots of econometrics

In his draft for paragraph one of the constitution of the Econometric Society Frisch had distinguished between the "theoretical-quantitative" and the "empirical-quantitative" approach to economic problems. In the context the "theoretical-quantitative" approach meant something more important and more precise than mathematically formulated economic theory, but the meaning was clearly related to what was subsumed under "mathematical economics", a term which had been in use for decades. Frisch identified himself as a mathematical economist in 1926 and knew some of his contemporary fellows of the same designation from his travels in France, Great Britain and Switzerland.

Frisch was well versed in the major works of the pioneers in mathematical economics, on the foundations of which he wanted to build. The predecessors he would most frequently refer to were Augustin Cournot, Leon Walras, Stanley Jevons, Vilfredo Pareto, Knut Wicksell, Alfred Marshall, and Irving Fisher. Frisch had a strong affinity to and admiration for Knut Wicksell. Frisch never met Wicksell, though, he once had heard him lecture in Oslo. Irving Fisher's doctoral thesis *Mathematical Investigations in the Theory of Value and Prices* from 1892 exerted a great influence on Frisch, who had acquired the French edition in Paris in 1922. Fisher was thus a forerunner and a generation older than Frisch, but would become a near friend and colleague with whom Frisch did joint research work and worked closely with in conducting the affairs of the Econometric Society and *Econometrica*. Fisher's thesis was not only a great work in mathematical economics, it also included a history of mathematical economics and a bibliography, building on earlier efforts by Jevons. Fisher's hero above others, was Augustin Cournot whose 1838 treatise Fisher had supervised the translation and edition of in the United States in 1897 and supplied with a 37 pages bibliography of mathematical economics from 1711 to 1897.

When Fisher reissued the Cournot book in 1927 he wrote in the foreword that '... since the book first appeared in English, the mathematical method has become so general in economic and statistical studies that no attempt has been made to bring the bibliography down to date by adding the many items which would be necessary; and there is today little need, as there was then, to emphasize the value of the method, as it is now seldom, if ever, challenged'.¹⁰ In spite of this remark to the effect that the promotion of mathematical economics was a battle already won, it was

regarded as a major problem by mathematical economists in several countries that the use of mathematics was severely restricted in the economic journals and in the teaching of economics. Many mathematical economists would also share the opinion that much of the non-mathematical economics, as printed and taught, did not hold a scientific standard with regard to theoretical rigor and logical consistency.

With regard to the "empirical-quantitative" approach, there were fewer historical antecedents. It is likely that Frisch had a clear conception in 1926 in which direction he wanted to pursue empirical research. One of his main avenues would be 'an attempt to realize the dream of Jevons' in measuring marginal utility as he expressed it in the *Sur un problème* paper. Economic theory needed to be restated by means of mathematics, both to be given a higher level of precision, and as a prerequisite for quantitative analysis by means of statistical methods. The *Sur un problème* paper was a powerful demonstration of Frisch's unification ideas. The problem was to define utility as introduced by Jevons in sufficiently operational terms to allow quantitative estimation from available data.

Also on the empirical side Frisch may have got his cue from Fisher (1892), who showed how the marginal utility curve (for sugar) could be constructed from a series of hypothetical observations, adding: 'To do this statistically is of course quite a different thing and more difficult though by no means hopeless proceeding.'¹¹ In Frisch's copy (of the French edition) the latter part of the sentence is underlined!

The last two sentences of the *Sur un problème* paper is worth quoting here: 'I believe that economic theory has arrived at a point in its development where the appeal to quantitative empirical data has become more necessary than ever. At the same time its analyses have reached a degree of complexity that require the application of a more refined scientific method than that employed by the classical economists.'

The preparation of an international organization

Irving Fisher had apparently as early as 1912 attempted to organize a society to promote mathematics in economics, but without success.¹² In 1926 both Fisher and Frisch independently of each other took initiatives to promote contacts between mathematical economists, which prepared the ground for the foundation of the Econometric Society. Fisher wrote in early 1926 to the Heads of all Department of Economics he could think of and asked for the names of all who would count themselves as mathematical economists, and he prepared a list on the basis of the material he received.

During his stay in Paris in 1921-23 Frisch had come to know the 11 years older François Divisia quite well, and the two began to correspond.¹³ Divisia was one of those who had received Fisher's letter and responded with a list of mathematically inclined economists and mathematicians and statisticians interested in economics. Fisher's initiative may have led Divisia to raise with Frisch the possibilities for providing better means for communication between mathematical economists. Frisch got very enthusiastic about Divisia's suggestions and wrote back to Divisia in September 1926 with proposals for names both for a new organization ("Association internationale d'conomie pure") and a journal ("Econometrica"). He mentioned names of economists in Spain, Germany, Hungary, Sweden, Denmark, United States, Russia, Greece, Bulgaria, Belgium, United Kingdom, Italy, France, and Czechoslovakia whom he had met, corresponded or exchanged papers with. He would move ahead by asking their opinions about an organization and a journal.¹⁴

Divisia suggested a more stepwise approach, by first establishing a "cercle restraint" (a restricted circle) of interested mathematical economists for communication between themselves and later consider creating establishing an international association. Divisia also expressed great enthusiasm about Frisch's suggested name for a journal. Divisia set out his views and ideas at some

length and so convincingly that Frisch translated a long excerpt from Divisia's letter and enclosed it with his own letter to four selected contacts.

The four economists who in November 1926 received similarly phrased letters from Frisch (in three different languages!) were Ladislaus von Bortkiewicz in Berlin, Arthur L. Bowley in London, Charles Jordan in Budapest, and Eugen Slutsky in Moscow. They were all Frisch's seniors, Slutsky by 15 years, the others by around 25 years. Why these men, why no others? Frisch may have wanted to probe his and Divisia's ideas with these four men whose work he knew and admired and whom he must have regarded as quite influential in their respective countries. He did not write to anyone in the United States as he was about to leave for New York soon after with a scholarship from the Laura Spelman Rockefeller Foundation. He mentioned in the letter to his four chosen correspondents his hopes for finding support among American economists for the idea of taking organizational steps to promote mathematical economics or "pure economics", as he now preferred. He may also have nurtured a hope of eliciting financial support for the idea of a journal from one of the American research foundations. The persons he particularly wanted to meet in the United States to discuss this idea were Irving Fisher and Allyn Young.

L. von Bortkiewicz was a well known name in Scandinavia as he and the Russian statistician Alexander Chuprov were the main theoretical contributors to the Nordic Statistical Journal in the 1920s. E. Slutsky had visited Oslo and met with Frisch. He knew enough Scandinavian to write occasionally in Swedish to Frisch and being able to read - with some difficulty - Frisch's papers in Norwegian.¹⁵ Frisch had probably sought out Arthur Bowley during his visit to Great Britain in 1923, and may have met Charles Jordan, an Hungarian economist of strong mathematical leanings, in Paris. The reactions he got were positive, but not overwhelmingly enthusiastic, except from the youngest one of the four, Eugen Slutsky. Arthur Bowley, responded quickly, but uncommittedly, preferring 'to take no part until a year has elapsed'.¹⁶ Both von Bortkiewicz and Bowley were elected to the first Council of the Econometric Society, and Bowley became the third President.

Slutsky was very positive towards the idea of establishing a circle of econometricians immediately, but advised Frisch that the further goals of an association and a journal should be kept in view from the very beginning. 'If we do not consider these important goals as the goals of the circle, then our undertaking will lack soul.'¹⁷

Frisch left for United States early in 1927 and stayed for more than a year. His main project in this period was analysis of time series. He visited several universities, seeking out leading economists and statisticians he wanted to meet. In the spring of 1927 he wrote a memorandum on the importance of establishing a journal which he now referred to as "Oekonometrika". The opening paragraphs of the memorandum went as follows:

Two important features in the modern development of economics are the application of mathematics to abstract economic reasoning ... and the attempt at placing economics on a numerical and experimental basis by an intensive study of economic statistics.

Both these developments have a common characteristic: they emphasize the quantitative character of economics. This quantitative movement in our estimation is one of the most promising developments in modern economics. We also consider it important that the two aspects of the quantitative method referred to should be furthered, developed, and studied jointly as two integrating parts of economics.

We therefore venture to propose the establishment of an international periodical devoted to the advancement of the quantitative study of economic phenomena, and especially to the development of a closer relation between pure economics and economic statistics.

We believe that the scope of the new journal would be happily suggested if it is called "Oekonometrika". Accordingly, the quantitative study of economic phenomena here considered may be termed econometrics.¹⁸

The memorandum went on to discuss details about the organization of such a journal and invited comments from readers. Clearly, it was written to be distributed to many, and it was frequently referred to in personal communication in the ensuing years. In fact, as a result of the

Memorandum the idea of a journal at this stage seems to have got better known than that of an association. Frisch must have had contact with Irving Fisher in this period, but there is scant record of this. Frisch is reported to have drafted paragraphs of the constitution of the intended association at this period.¹⁹ In the late autumn of 1927 Frisch met Joseph Schumpeter at Harvard for the first time, after having been in correspondence for some time. Schumpeter became from a strong supporter of Frisch's plans, and only Fisher and Frisch may have had a similar influence on the further development. Frisch also attended the joint meeting of the American Economic Association and the American Statistical Association in Washington D.C. in December 1927, and it is reasonable to assume that the opportunity was taken to discuss the plans for a journal.²⁰

One of the persons sought out by Frisch was Charles F. Roos, a mathematical economist and a pupil of Griffith C. Evans, who had published several articles on dynamic economics. Roos had become secretary of Section K (social and economic sciences) of the American Association for the Advancement of Science after Edwin B. Wilson had proposed that the Association should attempt to develop economics as a science. Frisch had a meeting with Roos and Fisher in Fisher's home in New Haven in April 1928 where they apparently discussed names of prospective members of an econometric organization. The conclusion of this meeting seems to have been that more effort was needed to solicit future members.²¹ Frisch left United States soon after. In the period after his stay in United States he travelled in Europe, visited Italy and discussed his ideas with i.a. Corrado Gini. Frisch had to spend much time at home in the following year or so for family reasons.

'... we have been unable to find any better word than "econometrics".'

Early in 1930 Frisch returned to the United States as Visiting Professor at Yale. The renewed contact with Fisher and Roos finally resulted in a concrete effort to prepare a foundation. The three drafted a circular letter to be sent to a select group to ask their advice before a formal invitation. Shortly before the letter was sent out Divisia suggested to Frisch a safer route of organizing econometrics under the umbrella of the International Congress of Mathematicians, but Frisch had now set his course: '... what we want is more to penetrate the whole body of economic theory with the keenness of mathematical thought. ... I therefore believe that by acting wisely now we could be able, so to speak, to swallow the whole body of economic theory.'²²

The circular letter was dated New Haven, Connecticut, 17 June 1930 and sent to 31 persons including the signees (the names were all given in the letter). The addressees - by country of residence - were 1 from Austria (H. Mayer), 1 from Denmark (H. Westergaard), 1 from Egypt (U. Ricci), 4 from France (C. Colson, F. Divisia, J. Moret, J. Rueff), 2 from Germany (L.v. Bortkiewicz, J. Schumpeter), 4 from Italy (L. Amoroso, C. Gini, A. de Pietri-Tonelli, G. del Vecchio), 1 from Norway (R. Frisch), 1 from Poland (Wl. Zawadski), 2 from Sweden (G. Cassel, B. Ohlin), 3 from United Kingdom (A.L. Bowley, J.M. Keynes, A.C. Pigou), and 10 from United States (T.N. Carver, J.B. Clark, J.M. Clark, G.C. Evans, M. Ezekiel, I. Fisher, H.L. Moore, W.M. Persons, C.F. Roos, H. Schultz), and 1 from Russia (E. Slutsky).²³

The letter asked 'your opinion as to a project we have been considering, namely the organisation of an international association for the advancement of economic theory ...'. The letter did not mention econometrics, and it did not discuss the name of the new organization. It asked for 'advice and judgment' from the selected group of addressees and promised a similar letter to a larger group if 'sufficient encouragement' was received.

After this general approach to the need for a new association the letter went into surprisingly concrete detail on the (conditional) publishing activity.

... If at first sufficient funds should be difficult to raise, the publishing activity of the association might be restricted to a yearly leaflet giving the names of the members with addresses brought up to date and a list of the recent publications of the members. Such a leaflet would stimulate, we believe, an informal private correspondence and exchanging of reprints between the members.' On the other hand, if funds were available a journal would be created. "The scope of the

journal might perhaps be happily suggested by calling it "Oekonometrika". Do you think, however, that this name would (by analogy with *Biometrika* and *Metron*) suggest the idea of economic statistics only? Do you think that in order to indicate the constructive theoretical scope of the journal, it should be given a name such as "Economic Theory" or "Economic Science"? Have you any other suggestions as to the name of the journal?²⁴

The letter may also have been sent to others than the given addressees. The response to the letter was more than positive enough for the signees to move ahead to the next stage, i.e. the invitation to found the Econometric Society. The invitational letter which announced the date and time at Statler Hotel in Cleveland was dated 29th November 1930. It included unmistakably Frischian formulations, and Frisch's tentative draft of the Constitution was enclosed with the invitation. With regard to the name of the new society, the letter stated:

... As to the name of the society, we consider it essential that the name should indicate quite clearly the specific object which the society has in view. If the society is formed with the scope we have suggested, it seems advisable to coin a word, since no current single word will connote exactly the correct idea. So far, we have been unable to find any better word than "econometrics". We are aware of the fact that in the beginning somebody might misinterpret this word to mean economic statistics only. But if the complete subtitle of the society is always given in the official publication and in the letterheads of the society, and if the members and fellows of the Society persist in using the word "econometrics" and "econometric" in their proper sense, we believe that it will soon become clear to everybody that the society is interested in economic theory just as much as in anything else.²⁵

3. The first years of Econometric Society

The immediate organizational tasks facing the officers and the Council of the Econometric Society after its foundation were the election of members, the initiation of the Econometric Society Meetings, and the establishment of a journal for the Society. As Vice-president was elected F. Divisia and as Secretary and Treasurer Charles F. Roos. Irving Fisher, the first President, was much concerned about achieving an established and respectable status for the Society as soon as possible. Both the membership policy and the effort to initiate a journal would serve this purpose. Other members may have been more of iconoclasts in emphasizing the different character of the new society.

Fisher, Frisch and Schumpeter might often have different views on how to conduct the affairs of the society, but never seemed to have much difficulty reaching an agreement between themselves. They shared a common view of the primacy of economic theory in the definition of econometrics. They also shared an interest in the history of economics and a respect for those they counted as predecessors. Together they exerted a strong influence in the affairs of the Society in the early years.

From the outset it was decided that the first two years of the society would count as one with regard to the time in office. Frisch and others persuaded Fisher to sit as President beyond his first period, first for one year, and then for another year. Hence, there was no change of President until 1935. The choice seemed to be between Divisia and Schumpeter. Frisch had tried to persuade Schumpeter to accept the Presidency as he found Divisia too indecisive to make a good President. In the end Frisch supported Divisia, however, with Schumpeter as Vice-president. After Divisia the pressure was on Schumpeter, who absolutely refused to accept the Presidency while he was still working to complete *Business Cycles*. Harold Hotelling was elected President for 1937 with Arthur Bowley as Vice-president, followed by Bowley as President and Schumpeter as Vice-president in 1938 and 1939. In 1940 Schumpeter was finally elected President, with Jan Tinbergen as Vice-president. Alfred Cowles had taken over as Treasurer from 1932 and from 1937 also as Secretary.

Members, charter members and fellows

According to the Constitution the Society would have two classes of members: Regular members and Fellows. Members of either class would be subject to election. The procedure for nomination and election of regular members was set out in the Constitution: "To become a regular member, a person must be proposed to the Council by two members of the Society. Once a year the Council shall nominate new members and these nominations shall be voted upon by mail of all members. No person can be elected to membership unless he is nominated by the Council."²⁶ The Constitution, furthermore, gave the Council the authority to "invite eligible persons to become charter members during the first year of the Society's existence." The idea of charter members was not well thought out, before it was attempted put into effect. Some, including both Frisch and Schumpeter, would like to see qualified econometricians as charter members, while others, like Roos, tended to use the extra offer of becoming a charter member as an incentive to enroll. Fisher was open for accepting as charter members people, even without economic qualifications, who would help the Society attain respectability in the right circles (or money, which Fisher may have found was needed even more than respectability, in particular to finance a journal!). Roos had in this vein got Fisher's support for a plan 'to invite about one thousand American millionaires to give \$500.00 each to the ES. All gifts will of course have to be without strings. Circularizations of this kind usually bring forth a response of about one half of one per cent. In other words our circularization should result in about five responses.'²⁷

This was not to Frisch's liking and he vented to Divisia his opposition: 'My feeling has been that the Econometric Society should be first of all an Economic Society. This is the reason why I have thought there might be reason for not being quite as liberal in exempting economists members as in exempting other kinds of members. ... Our difference on this point is not so much a question of some dollars more or less as a question of the general attitude towards the group of people whom we could designate under the name "men of fame and influence". ... I do not think we should go too far in the direction of seeking the protection of the generation which has now arrived at the stage of influence and power. If the idea of the Econometric Society has the right of life it will win with or without the protection of the older generation. And if it has not the right of life no amount of protection will save us. My feeling is therefore that we should rather trust our own power of doing good work. It is through the organization and coordination of the work of our group that we shall finally obtain recognition .. I am most emphatically against the Econometric Society seeking any sort of official recognition. I revolt against being patted kindly on the back.'²⁸

Schumpeter vented equally strong reactions when got to know that Roos found it a 'healthy attitude' in new entrants to find 'the old theory to be practically worthless'. Schumpeter found 'that there was nothing in common between myself and anyone who thought the work of Cournot, Walras, Pareto, Fisher, Marshall "worthless" ... I wish to do my best to keep our front united on a very broad line'.²⁹ Also A. Bowley found it a mistake to rally for a great number of charter members, adding 'eminence, by definition is rare'.³⁰

In the end it was decided that all members who joined, or rather, were allowed to join, during the first year of the Society were counted as charter members. In addition to the 16 present at the "organizational meeting", 153 members joined as charter members during 1931.

The discussion of charter membership during 1931 caused much agony and clearly also a lot of wasted time and energy. Frisch, Fisher and Schumpeter were among those who felt most responsibility for protecting the international character and the integrity of the venture. Fisher wrote to Schumpeter June 1931: '... the real advocate of the Society seems to be yourself, Frisch, Roos and myself.' The difficulties of agreeing within the Council on charter members from around 15 different countries can be well illustrated by the problem Fisher, Frisch and Schumpeter had between themselves on agreeing on a charter member from the Department of Economics, Harvard University. Fisher's candidate was T.N. Carver, whom neither Schumpeter nor Frisch would accept.

Schumpeter wanted F.W. Taussig who was not a choice for the other two. Frisch wanted John D. Black as 'Harvard man' as he at least had shown 'econometric attitude'. Fisher got exasperated: 'Frankly speaking, I think I would be severely criticised as a Yale man if no Harvard man were included in the Charter Membership.'³¹

After the first year a more relaxed attitude gained ground regarding the power given the Council by the Constitution in controlling the inflow of regular members, although it was clearly a firm opinion of most of the leading members of the Society at the outset that certain qualifications were required to become members. It was also cumbersome to have members vote on all new entrants. Fisher had already in 1931 suggested that the membership rules should be practiced as to 'gather into the fold all who have any likelihood of becoming proper timber for fellows' without requiring more at the outset the new entrants were 'interested in economic theory.'³² Some of the European members were afraid that the scarcity value of membership in the Society would get lost by allowing "unknown" members, as expressed by one of them: 'I shall have less reason than before to be proud of being a member of the Econometric Society'.³³ In 1933 the membership policy adopted by the Council was to consider 'as eligible for membership all serious students interested in the objectives of the Society, regardless of whether they have as yet achieved established reputation based on published works. Membership should be considered an honor, especially to young men, but it means merely that they have shown an understanding of the problems with which our Society deals.'³⁴ Frisch and Schumpeter had a more restrictive attitude towards membership, but realized that the battle was lost: 'I agree with you that the membership has now been extended beyond any limits compatible with standing. There does not seem to be any way back now, so we shall probably have to accept the situation that the membership will be a large group giving financial and moral support only. It is all the more necessary to establish a hard and fast organisation of the fellows. The outlook now seems that we shall have, when the machinery has finally began to function, an outer circle of between 500 & 1,000 ordinary members. Then a group of fellows between 30 & 40 and finally a council of 7 or 8. The pyramid does not seem to be so bad after all.'³⁵

Fellowship was another matter. The Constitution's requirement of one year's membership prior to Fellowship implied that the election of Fellows could not take place in the first year. The Fellowship issue is discussed in section 6 below.

Frisch got the idea of publishing the list of members of the Society every year in *Econometrica*. Over the mild protest of his Assistant Editor he put it into effect from the second volume: 'I am thinking of the historians of the future who would be delighted to find the membership list in "Econometrica".'³⁶

The establishment of *Econometrica*

There can be little doubt that Frisch deserves more credit than anyone else for the idea of founding *Econometrica* as well as for the name the journal was given. As mentioned above the idea of a journal was first put forward by Frisch in a letter to F. Divisia in 1926.

In the same letter Frisch noted that journals like *Economic Journal* and *Revue d'Economie politique* accepted occasionally mathematical papers, but the author was obligated to refrain as much as possible from mathematical language and reasoning. But Frisch did not only suggest a journal, he also named it, suggesting parenthetically to Divisia: 'que dites-vous d'une *Econometrica*?, la sœur du *Biometrika*'.³⁷

L. von Bortkiewicz observed that it would be more correct to write 'Oekonometrika'. Divisia pointed to the Greek roots "ο ο ο ο", "ο ο ο ο", and "ο ο ο ο" and offered on etymological grounds "Oeconomometrika" or "Oeconommetrika" as alternatives, but adding 'vous avez la paternité du term; a vous donc de façonner votre enfant à votre guise.'³⁸ Frisch pondered on this, tried out different spellings before settling for von Bortkiewicz's suggestion of

"Oekonometrika" and used that in his 1927 Memorandum, a name which, he argued, hinted at parallelism with *Biometrika* and avoided confusion with *Economica*.

After the foundation of the Society, there was still no financial basis for a journal. Even with considerably increased membership fees there were simply not enough members to support a journal. The 173 charter members at the end of 1931 (paying a membership fee of \$2 in the US and \$1 elsewhere) hardly warranted the establishment of a journal. There were also differing views about the aims and ambitions of a new journal. In early 1931 Frisch held the opinion that the journal of the Econometric Society should not aim at being in competition with other economic and statistical journals, but primarily report the proceedings and the progress of the work of the Society and publish 'an annotated current bibliography of econometric literature'. The Society ought to encourage mathematical-economic articles in other regular journals rather than in its own.³⁹

Irving Fisher, the first President, much as he would like to see a flourishing econometric movement, did not want a journal to be started only to see it collapse from lack of financial resources with nothing but membership fees to finance it. Much to Fisher's delight, the unexpected happened! Alfred Cowles, 3rd, having heard about the Econometric Society, wrote to Fisher in August 1931 and offered to finance a journal for the Society. Fisher responded positively and Cowles came to see Fisher on 18th October 1931 with C.F. Roos also present. In Fisher's home in New Haven he put his offer in writing: 'I am ready to make up any deficit in the proposed journal, "Econometrica", including all the expenses of editing, printing etc.'(!)⁴⁰ Fisher wrote the same day enthusiastically to Frisch: 'It is exceedingly wonderful to have an "angel" suddenly fall down from the sky to supply us with the one thing needful to make our Society a huge success. Without financing we can never amount to a great deal but with financing we can leap years ahead of what we otherwise would. ... I would not like to take the responsibility, even if I were sure that as President I had the power, to decide this without consulting you as the original founder of the Society.'⁴¹ On the same day Fisher also wrote the only two other persons he felt obliged to consult, Divisia and Schumpeter, but he distinguished between them and Frisch with regard to the extent that he found that their approvals were needed: '.. if I do not hear from them, I shall assume that they at least have no objection. In your case, however, I should like to be sure that you approve...
r⁴²

The question of Editor of the journal was also discussed at the meeting with Cowles on 18th October. Cowles had oddly named Frisch as editor in his written offer to finance the journal, but as the two never had met Cowles' choice must have been induced through Fisher. Frisch was clearly Fisher's preferred candidate, but withstood Fisher's efforts at persuasion, instead suggesting others, like Hotelling. Fisher seemed to have found none but Frisch acceptable. To Fisher it counted to have someone firmly rooted in economics, rather than primarily in statistics or mathematics, and who shared his belief that the essence of econometrics was economic theory. Fisher's close contact with Frisch over the preceding nine months while Frisch visited Yale and his great admiration for him as a scientist, is perhaps the most direct background for Fisher's choice, in addition to his recognition of Frisch as 'the original founder'.

Fisher was prepared to move quickly deal with the Cowles offer and hoped for Frisch's approval by telegram, but Cowles' offer could not pass just on Fisher's enthusiasm. The European Council members were hesitant and sceptical about the offer from an unknown American business man, Divisia was e.g. worried that 'l'affaire Cowles' could lead to lack of control over the journal and give Cowles a monopoly on the publication of econometric works.⁴³ The European part of Council authorized Frisch to decide on their behalf after a meeting with Cowles. A meeting could not be arranged until June 1932, and in the end the President and the American members of the Council were authorized to accept Cowles' offer, which they did early in 1932 (1, p.109).

Schumpeter, as well as other leading European members of the Society, regretted that Frisch was not able to go to represent the European side in the negotiations with Cowles and also

that Frisch had declined the editorship: '[You] would have started the car on the right track. Reconsider if possible!'⁴⁴ Frisch yielded under pressure from both Fisher and Schumpeter and accepted to become Editor. Fisher thanked by reading Frisch's fortune: 'I believe that the journal is going to do for you what the British journal did for Edgeworth without as much trouble on your part.'⁴⁵ Fisher offered at about the same time his editorial advice: '... the first issue should be short ... better to grow larger than to grow smaller ... enough non-technical and non-mathematical connective tissue to sustain the interest of our non-mathematical members, many will gradually begin to read more technical material and, once interested, they can be led to put in more and more time upon technical articles.'⁴⁶ The Council elected Frisch in February 1932 as Editor-in-Chief with power to select his own editorial board and assistant editor.

At the Econometric Society meeting in New Orleans in January 1932 the name issue had come up and "Econometrika" won through as a name avoiding confusion with *Economica*. Cowles' who may have had the businessman's sense for a good name, seems to have stuck consistently to "Econometrika" and found the change of only one c to k as 'inconsistent and ... the spelling "Ekonometrika" ... bizarre.'⁴⁷ The Council meeting which elected Frisch Editor-in-Chief reconsidered the name issue and decided that the name would be "Econometrika".

Frisch did not regard the name issue as settled by the Council decision, and brought it up again under his plenipotentiary mandate as Editor-in-Chief. Frisch favoured choice was still "Oekonometrika". Cowles at this stage got exasperated and confided to Fisher that "Oekonometrika" to him seemed 'more Yiddish than Greek.'⁴⁸ Cowles remark may have been tongue-in-cheek, but Frisch was impressed by it. He decided to put the spelling of the name to a vote with other editorial matters in a questionnaire to the Council members. Fisher parted with Frisch on the name issue and would rather have "Econometrika" than 'anything which might seem a little outlandish.'⁴⁹ Divisia, who first had put Frisch on the track of the Greek roots, had switched to "Econometrika". In the end only Schumpeter remained a staunch supporter of Frisch's "Oekonometrika", he even expressed to Frisch 'philological scruples' about accepting "Oekonometrika" rather than either "Oekometrika" or "Okonomometrika".⁵⁰ After having got the returns, while the first issue was already being prepared, Frisch quickly drew the final conclusion. It had to be - *Econometrika*. In spite of the support from Schumpeter Frisch seemed to have got cold feet by the reactions of Cowles and others that "Oek-" would give a curious impression on all but Germans and Scandinavians.

The name issue was finally settled.

4. The first meetings

The Econometric Society meetings started in the first year after the constitution of the Society with regional meetings held in Europe and in the United States. Travel time and costs hardly allowed even the thought of having cross-Atlantic meetings. The first Econometric Society meeting ever was held at the University of Lausanne, 22-24 September 1931. The venue was deliberately chosen to commemorate Leon Walras.

The European meetings were held thereafter as one annual meeting in September or October. After Lausanne followed in the next five years Paris in 1932, Leyden in 1933, Stresa in 1934, Namur in 1935, and the famous Oxford meeting in 1936. In United States the meetings were held regularly in December/January. For some years there was also a June meeting in the United States, but after being held in 1932-1935 and 1937 it gave way to the Cowles Commission Seminars.

The different character of the European and the American meetings should be recognized. United States was after all only one country and the American meetings were fitted into an established framework of joint meetings between the American Economic Association, the American Statistical Association and others. The Econometric Society sessions were to begin with also organized as joint sessions with either AEA or ASA. Several of the leading figures in the Econometric Society were prominent members of one of the other associations.⁵¹

In Europe on the other hand there existed no regular common conference ground in economics, hence, the meetings became a major innovation in the scientific exchange among economists. There was also a great difference in style. The American meetings were well prepared in good time, and may also have observed more formalities than the early European meetings which more often than not were hastily prepared but had intense and informal discussions. At a Decennial Luncheon to commemorate the founding of the Econometric Society in New Orleans in December 1940 Jakob Marschak spoke about the European meetings in the preceding decade and referred to the '... fruitfulness of frank and energetic discussions [which] found expression in the customary rule of the meetings of the European branch: everyone may interrupt the reading of a paper to ask the author to repeat or clarify a definition - a rule which has probably prevented many a discussion at cross purposes, so common in economics.'⁵²

The responsibility for the first European meeting fell on the Vice-president, F. Divisia, and the other European members of the Council, of which Frisch by far was the most active force. Before the meeting in Lausanne Divisia was hesitant about many aspects of the meeting, and leant towards a restrictive attitude with regard to who should be allowed to take part in the proceedings. Four weeks before the meeting no preparations had been done apart from the invitation of papers. Frisch showered Divisia with advice and with regard to admittance he wrote: '... it would be possible for us to give the meeting more "ampleur" by inviting a larger number of people. The more I have thought of it the more convinced I have become that the number of attendants at the meeting should not be too small. ... in the sessions devoted to modern investigation, the larger crowd would do no harm at all. On the contrary the fact that a larger crowd could be brought together to listen to a series of econometric papers, even if everybody in the meeting should not understand all that have developed, would be a very significant achievement, quite in the spirit of the Econometric Society.'⁵³

Schumpeter was taken ill before the Lausanne meeting and Divisia was also unable to take part for family reasons. Frisch had to step in. Frisch told Schumpeter long after the event: 'At the last minute [Divisia] had to write to Staehle asking him to carry through the Lausanne Organisation, and on the evening before the opening of the Lausanne meeting there actually did not exist any programme. Staehle and I were working practically the whole night to bring things in order.'⁵⁴ The meeting became a boosting success, although the attendance was not large. Frisch gave the Opening Address, the Closing Address, presented three out of nineteen papers and took active part in every discussion. The papers were fairly evenly divided between the history of economics with papers on Walras, Cournot, Wicksell et al., methods in econometric analysis, and application of mathematical methods in economics. Frisch's papers were "New methods of measuring marginal utility", "The use of difference equations in the study of statistical distributions", and "Tensor calculus as a tool for the formulation of invariance in economic and statistical laws". The meeting was reported by Hans Staehle.

Also at the 1932 meeting in Paris Frisch had to step in at short notice to take over from Divisia the arrangement of the program. Frisch was no less active than the year before and presented two out of twentytwo papers.⁵⁵ The Leyden meeting in 1933 which Tinbergen had been in charge of, had slightly above 30 participants, but it became a meeting often referred to. The study of Business cycles was the key topic: Frisch presented his *Propagation* model and Kalecki his own model, both resulted in a very active discussion. J. Hicks and H. Schultz took part in a Society

meeting for the first time. The Leyden meeting had only 15 papers (and Frisch only one), but time was set aside for three night session "Colloquiums", and one full day for a Frisch eight hour lecture on the algebra of linear transformation and quadratic forms (sessions were 10-12:30, 14:30-17:30 and 19:30-22:00)!

Frisch did not go to the Stresa meeting in 1934, but attended the Namur meeting in 1935. The Oxford meeting in 1936 was an event he much looked forward to. He reported to Hotelling and others that it was the best meeting so far. The attendance had increased to between 40 and 50. The centerpiece of the meeting was a special symposium on *General Theory* with papers by Hicks, Harrod and Meade. Frisch spoke on "Macrodynamical systems leading to permanent unemployment", but in a quite non-Keynesian vein. Frisch also presented a paper on the measurement of money flexibility and lectured at a colloquium session at this meeting, which also included Jerzy Neyman presenting the Neyman-Pearson theory, T. Haavelmo's first paper at an Econometric Society meeting, A.P. Lerner and others.

From eyewitness accounts from some of these meetings Frisch made a lasting impression of his indefatigable energy and exuberant spirits, but he could also deliver very sharply formulated criticism against what he regarded as faulty reasoning. The energy exerted during the conference days did not prevent him from night work, bringing new results the next morning.⁵⁶

5. Editorial policy in the early years

As soon as Frisch had accepted the editorship, he set to work with an enormous energy. He visited Cowles in Colorado Springs in June 1932, it was their first meeting and they got on well from the start. Frisch involved himself not only in the editorial planning, but in the initial phase also with every detail that had to do with layout, typesetting, printing, etc.

His view on the role of the Editor-in-Chief reflected an almost superhuman role for the Editor. He would write, he would solicit, he would referee and decide on every submitted paper, and he would even rewrite submitted papers when that was called for! In the middle of his planning he expressed his feeling to Divisia: 'I have a policy of doing things as well as I can from the beginning giving the thing a good start. And then later trying to let it go by itself. So also with "Econometrica". The associate and assistant editors will I hope do the routine work. And there will certainly not be any "Chasse aux manuscrits"'.⁵⁷

From the beginning there were the Editor-in-Chief and three Associate Editors, representing economics (Alvin H. Hansen), statistics (Frederick C. Mills), and mathematics (Harold T. Davis). Frisch's first choice had been H. Schultz rather than Hansen, but Schultz declined as he was already involved with two other journals. As the Associate Editor for mathematics Frisch tried to enlist his Norwegian friend Oystein Ore. This was an odd choice as Ore's mathematics (number theory, algebra) was easily applicable to economics. Ore, who was an eminent mathematician, declined. Frisch may have valued excellence higher than the specialization. J. Schumpeter took over from 1938 after A. Hansen withdrew. An Advisory Editorial Board was also appointed, remaining unchanged until it was replenished during the war. Frisch may have thought of the Associate Editors primarily as potential contributors, but got to his disappointment altogether very few contributions from them.

With Frisch in Oslo and the editorial office in Colorado Springs the Assistant Editor had an important and difficult function to fill. The first Assistant Editor was William F.C. Nelson, an associate of Cowles, who died 36 years old in 1936. He was replaced by Dickson H. Leavens, who lasted until after the war. Frisch was not inclined to use outside referees. He took much upon himself (often too much!), and expected the Associate Editors, the Advisory Board and,

occasionally, other members when called upon, to do the rest. Frisch's workload was overwhelming, especially as he not too seldom went into considerable editing and even rewriting of the submitted manuscript, such as changing the system of notation etc. A result of the burden on the Editor-in-Chief was inevitable delays! The Managing Editor could be driven to despair waiting to get Frisch's decision on manuscripts he was reviewing. Both Nelson and Leavens would occasionally put it to Frisch in straight words, and Frisch would respond by a series of quick decisions and some good-natured and appreciative comments.

Econometrica was meant to be a different kind of journal. As Editor Frisch generated innovative ideas about what the journal ought to contain. He took a number of initiatives to make the journal known and fill its pages. In the first 10 years or so there was seldom a significant backlog of submitted articles in *Econometrica*, except in the first couple of years. It happened that issues were published smaller in size than planned due to lack of approved manuscripts. The volumes started out large with four issues of 112 pp. each in the first two years and grew to close to 500 pp. in 1935, a size not superseded until well into the 1950s! Hence, Frisch had not heeded Fisher's advice.

Even with Cowles' generosity *Econometrica* worked on meagre resources for many years, and Cowles extended his financial contribution much beyond his initial commitment of three years financing. The membership fee had naturally been changed to include subscription and was set to \$6 for U.S. residents and \$3 for the rest of the world. Frisch was handsomely paid for his editorial services by \$500 a year. He made repeated efforts and appeals to Cowles already in 1933 and 1934 to find means to offer honoraria for accepted papers, at least the for solicited surveys, as he was convinced that would make it easier to solicit the surveys and serve to improve both the quantity and quality of submitted papers. Frisch could not convince Cowles either to advance or extend his financial contribution for that purpose, or allow a 50 percent increase in subscription rates.

Surveys and other features

Frisch had got the idea of soliciting survey articles at an early stage. The surveys idea was presented at the end of his editorial. There would be four different annual surveys on, respectively, "(1) general economic theory (including pure economics), (2) business cycle theory, (3) statistical technique, and (4) statistical information", to be published in successive issues. The specification of these surveys also says something about how Frisch viewed the priorities in econometrics in the early 1930s, both that business cycle studies was a particularly important area for econometrics, and that better statistical information was an important concern.

In the first volume A. Hansen & H. Tout wrote the first survey on Business Cycle Theory, while W.A. Shewhart covered Statistical Technique and J. Marschak Statistical Information. The first survey on General Economic Theory was written by J. Tinbergen in the second volume. In the third volume followed J. Hicks' survey of Economic Theory (on the theory of monopoly), and J. Tinbergen's survey of Business Cycle Theory, while Frisch contributed his famous index number article as the survey of Economic Theory in the fourth volume.

It turned out to be beyond reach to solicit four surveys each year. Only three business cycle surveys were written at all. General economic theory (a wide category!) got six surveys, but here Frisch cheated a little bit and redefine submitted articles as surveys to uphold the idea. The two other categories got four and five each, of somewhat mixed quality. But Frisch did an effort, he tried hard to solicit surveys from the members, but to no avail. After some years the surveys dwindled. Originally Frisch's idea was to have someone who do the same survey every year for a period and work with specialist if needed.

Another feature initiated by the editor was articles, both commemorative and theoretical, about the great predecessors in the econometric field. In the first volume Frisch's good friend Johan Åkerman wrote on Wicksell and René Roy on Cournot, the second volume comprised Bowley on

Edgeworth, Schneider on von Thünen, Hicks on Walras, and the Jevons children (H. Winefrid and H. Stanley) on their father. More followed in the ensuing volumes, but Amoroso on Pareto in 1938 became a slight scandal because of the homage to the Italian fascist state that came with it.⁵⁸ Frisch included in *Econometrica* also other documents of historical interest, related to the forerunners of modern econometrics, e.g. the correspondence of L. Walras with A. Cournot and S. Jevons and a letter from A. Marshall to C. Colson in 1907. The underlying rationale of soliciting such articles was the firm belief, shared by Frisch, Schumpeter and Fisher that there was much sound reasoning in the classical contributions and well worth paying homage to in an econometric journal.

Frisch was much concerned about the role of *Econometrica* as a medium for communication between members. For this purpose the programs for coming meetings of the Econometric Society and reports from past meetings served an important function. The list of members with addresses did also facilitate communication.

From the beginning *Econometrica* allowed articles in French and English and also in German.⁵⁹ Language was not much of a problem for the early econometricians, at least not on the European side of the Atlantic. Not everyone could - like Frisch - communicate by writing in three foreign languages and read a few more, but an ability to read the major Western European languages was taken for granted. Russian was, of course, another matter, in the early years of the journal Frisch arranged to have translated and reissued in the journal articles earlier published in Russian. These included E. Slutsky's famous article on random causes of cyclic processes from 1927 which Frisch had embraced in his celebrated Cassel *Festschrift* contribution, and A.A. Kononov on the true index of the cost of living.⁶⁰

Frisch's ideas about what *Econometrica* ought to contain thus went in many directions, and were also influenced by ideas put forward by others. The prime concern, papers representing what Frisch called 'real econometric work', continued to be in short supply in the first ten years or so of the journal's existence. When Samuelson submitted his first papers in 1940, Frisch could not agree more with Schumpeter that this was 'first-rate stuff', much to his liking.⁶¹ Frisch also aimed at including articles that would appeal to the uninitiated.

An Editor in the old style

Frisch suggested innovations and improvements to promote a modern and updated journal. A major project from the very beginning was to include bibliographical notes about econometric work. Frisch had done much preparatory work on a system of bibliography, but for various reasons it was never put into effect. Frisch suggested already in 1934 that the submission date should be given when an article was printed, but met with opposition from the Assistant Editor. (It was not introduced until 1970.) Lists of forthcoming papers were included from the first issue, but disappeared after 1934, apparently because of too little predictive value. Another idea which originated with Frisch was to establish the Monograph Series of Econometric Society.

Frisch published a number of articles in *Econometrica* (not counting entries marked 'Editor'), varying in length from 1 to 93 pages! Many of these were comments and clarifying notes to articles he had accepted for publication. Frisch's articles varied in length. A more peculiar editorial habit was to insert editorial notes in articles by other authors, often to comment or relate the content or assertions in the article to his own work.⁶²

Frisch could be a sharp polemic, not everyone was happy about his editorial comments. When Frisch told Harold Hotelling he was prepared to append a tail to Hotelling's classic *General Welfare* article, the author retorted that he had worked on the topic for 6-7 years and brushed the Editor off rather brusquely: 'Under these circumstances, I do not think it likely that any criticism conceived within a few days and published immediately is likely to have much force.'⁶³ Frisch was undisturbed, however, completed his comment, but acquiesced by not publishing it in the same issue.

Criticism

Frisch's editorial policy and decisions came up for criticism on repeated occasions. Frisch either fought it off, or when he found it well placed, did his best to change his ways. Already after the first couple of issues complaint and criticism about the style and content of *Econometrica* began to emerge. But often the editor would not be the first to hear about it.

Frisch responded to early criticism demanding a change in editorial policy to entice more new members. Frisch explained to Divisia that *Econometrica* ought to remain a different journal: 'However, I believe that we must be on our guard not to let "Econometrica" lose its characteristic features and become similar to the other economic journals now published. You know that all of them publish occasionally mathematical papers, but try to keep the bulk of the articles in a more literary style. No doubt some new subscribers could be acquired by letting "Econometrica" evolve more in the general direction of these types of journals. But I believe that a considerable number of our members would lose that interest and enthusiasm which they have now shown. I think therefore, that we must now and in the future always try to preserve this feature which makes "Econometrica" different from the rest of the journals. This applies both to the particular way in which we propose to apply statistics to economic theoretical problems and to our readiness in using mathematics whenever necessary.'⁶⁴

But more criticism came along. After Fisher had attended the ISI meeting in Mexico in 1933, he reported to Frisch that C. Gini was disappointed with *Econometrica*, '... it was good, but not good enough.'⁶⁵ Gini had also written to Frisch that *Econometrica* did not satisfy the criteria Gini followed as editor of *Metron* that accepted papers ought to 'contain some new contribution in the theory or in the applications.' Gini furthermore objected to the surveys that to let just a few persons 'review all the field of econometrics is rather dangerous. It is very difficult that a person knows sufficiently all the languages in order to be acquainted with all the contributions, without speaking of the impartiality of the reviewers towards all other contributors, which is not easy to realize.'⁶⁶ Frisch asked specifically Gini which articles he had in mind, but Gini declined to give further details.

Frisch's highly mathematical approach in many of the papers he presented at the European ES Meetings, offended the tenderhearted. Again it was Fisher who brought back the complaints: 'Recently, I had Bousquet here at Yale. He was critical of you at the meetings in trying to use too strong-armed methods. Evidently, Bousquet is somewhat sensitive, but such men are good thermometers. I am therefore passing this criticism on to you for what it may be worth, for Bousquet seems to me a fine fellow and one worth placating.' Frisch's comment to the complaints from Gini and Bousquet was: 'I have for a long time thought of trying to arrange in *Econometrica* a series of papers that may build a bridge between those who appear as using "strong armour" methods and the more general group of economists' Frisch wrote to Bousquet and asked for '... a paper along these lines, telling him that he would of course be quite free to express any criticisms he wanted. I am not quite sure, however, that Bousquet has sufficient power to exact a clear reasoning, but anyhow we shall see.'⁶⁷

Frisch's 93 page long article in the second volume - *Circulation Planning* - caused severe reactions from some of the members, for its length, as well as for the (mis)use of editorial prerogative, perhaps also for its content. Frisch accepted the criticism and promised to refrain from publishing his own works in the journal.⁶⁸

Frisch's old Swedish friend, J. □kerman, whose thesis had inspired Frisch to develop the *Propagation* model, submitted after his Wicksell paper and an annual theory survey a paper to *Econometrica* in 1938 and had it turned down by Frisch stating that '... we have gradually constrained acceptance to works of definite mathematical and statistical character.' □kerman may

have been snubbed and retorted by a rather negative assessment of *Econometrica*, '... too many treatises in *Econometrica* seem to me to be built on foundations that are not corroborated and are felt missing.' Frisch responded in a jocular mode: 'Don't shoot at the actors, they do as best they can. .. It is important to a certain degree to give mathematical formulations precedence. .. It is, of course, our wish that this could take place as a specialization without isolation.'⁶⁹

Most of the reactions to Frisch's 'strong armour' methods and sharp polemical style derived probably more from his performance at the early Econometric Society meetings and some polemical articles than from his editorial practice. Schumpeter advised Frisch to adopt a softer way to deal with opponents and referred to 'Anti-Frisch Currents' in the economic community in the U.S., while at the same time expressing his wholehearted agreement with Frisch in substantial matters.⁷⁰

Anecdotal evidence related to Frisch's handling of submitted manuscripts seems to have survived his twentytwo years as Editor, but is hardly a reliable source. Evidence from snubbed authors is, almost by definition, onesided. In controversies that arose in the journal, such as the Lotka-Preinreich confrontation, Frisch seems to have steered a middle, just, and fairly liberal course. In matters of what constituted good econometrics - and good notation! - he held strong views and felt called upon to defend the econometric cause.

6. The election of fellows

Fellows were to be elected by Fellows, by means of a mail-vote. To be elected a nomination by the Council was required. The Constitution stated the qualifications: 'To be eligible for such nomination a person must have published original contributions to economic theory or to such statistical, mathematical, or accounting analyses as have a definite bearing on problems in economic theory, and must have been a member of the Society for at least one year.'⁷¹ The Constitution stated that the members would each year be offered "... an opportunity to suggest nominees for fellowships."⁷² To get the election of Fellows started, the Constitution allowed the first group of Fellows to be elected by the Council.

How the nomination and election process should be conducted was nevertheless quite open to interpretation. The real point was, of course, how many Fellows and with what qualifications. The preparation for election of the first lot of Fellows by the Council started soon after the first year of the Society had passed, but turned out to become a drawn out affair. Fisher sounded out the Council members by having them fill out a preliminary ballot for Fellows in 1932, before the official ballots were distributed by the President in December 1932, accompanied by a letter which stated "The policy being followed is to have a large membership but a very select list of Fellows, so that there may be an ambition among a larger number (especially among the rising generation of economists) to become qualified for Fellowship, i.e. to become scientific economists."

The first lot of 29 Fellows were notified of their election in August 1933. They were the following:

Professor Luigi Amoroso, Rome	Dr. N.D. Kondratieff, Russia
Professor Oskar N. Anderson, Varna	Professor Wesley C. Mitchell, New York
Dr. Albert Aupetit, Paris	Professor H.L. Moore, Cornwall, N.Y.
Professor Boninsegni, Lausanne	Professor Umberto Ricci, Giza
Professor A.L. Bowley, London	Dr. Charles F. Roos, Washington
Professor Clément Colson, Paris	M. Jacques Rueff, London
Professor Gustavo Del Vecchio, Bologna	Dr. Erich Schneider, Dortmund

Professor François Divisia, Paris
 Professor Griffith C. Evans, Houston
 Professor Irving Fisher, New Haven
 Professor Ragnar Frisch, Oslo
 Professor Corrado Gini, Rome
 Dr. Gottfried Haberler, Vienna
 Professor Harold Hotelling, New York
 Professor John M. Keynes, Cambridge

Professor Henry Schultz, Chicago
 Prof. Joseph A. Schumpeter, Cambridge, Mass.
 Dr. J. Tinbergen, Scheveningen
 Professor Felice Vinci, Bologna
 Professor Edwin B. Wilson, Boston
 Professor Wl. Zawadzki, Warsaw
 Professor F. Zeuthen, Copenhagen

The first lot of Fellows included, naturally, the entire Council elected at the constitutional meeting (apart from L. von Bortkiewicz who died in 1931). The selection of the additional 20 Fellows was a matter of much difficulty for the Council to agree collectively upon. Some elder statesmen were included (i.e. Colson, Mitchell, Gini). A major concern was the number from each country. U.S residents constituted the largest group followed by Italians, while only two were included from U.K. Another was the order in promotion to Fellowship within each country, Divisia succeeded in trading G. Darmois, promoted by Schumpeter, for C. Colson 'le chef d'economistes "scientifiques" français'. Kondratieff was elected although it was not known whether he was still alive.

Frisch and Schumpeter may have been the two with the greatest personal acquaintance with prospective candidates across national boundaries and also the most outspoken in their views. Schumpeter spoke warmly in favour of Harvard's W. Leontief, and also for W.L. Crum, but had to yield on both. Schumpeter also wanted M. Fanno, but the Italians represented by Amoroso had their own ranking order and wanted Vinci appointed before Fanno. Frisch seems to have most concerned about convincing the majority of the Council that the number of Fellows should be kept low.

The next - and the first proper - nomination for Fellowship took place in 1933. About 40 names had been suggested in 1933. Frisch was at the outset inclined to vote for only one of the suggested names: Jacob Marschak.⁷³ A drawn-out nomination by the Council reduced the number of nominees to eighteen. This eliminated e.g J. Hicks, P. Sraffa, F. Hayek, O. Morgenstern and others. The eighteen nominees were: R.G.D. Allen, C. Bresciani-Turroni, G. Darmois, A. de Pietri-Tonelli, M. Ezekiel, M. Fanno, L.-V. Furlan, A.H. Hansen, R. Hawtrey, W. Leontief, J. Marschak, F.C. Mills, G. Mortara, C. Snyder, O. Weinberger, E.J. Working, and H. Working. At this time some guidelines for the qualification for Fellowship had been suggested by the Council:

1. He should be an economist.
2. He should be a statistician.
3. He should have some knowledge of higher mathematics.
4. He should have made some original contributions.
5. Some of these contributions should be in economic theory.⁷⁴

The preliminary voting procedure was very elaborate and designed to reveal both the knowledge of the Nominees' works and the marginal preferences. For each candidate the electors (Fellows) would indicate a vote under five columns:

- (a) Votes for Nominees considered to have at least as high qualifications for fellowship as the average of the present Fellows,
- (b) Votes for the better half for those already marked in column (a),
- (c) Votes for those Nominees in column (b) which it is very strongly felt should be elected,
- (d) Votes against those Nominees whose election is very strongly opposed.

In each of the columns the votes were divided in two by "Have read works/Have not read works". An additional column (e) asked for whether the electors had "critically scrutinized representative works of Nominees." The "blackballing" column (c) was from the outset meant to exclude candidates having been blackballed by a sufficient number regardless of the score in the vote. It was not quite clear whether one or two (or even more) blackballs would be needed to disqualify a nominee.

The votes cast under (a), (b) and (c) were added up with weights 1, 3 and 5. Highest score got Allen, Bresciani-Turroni, Ezekiel and Marschak, followed by Mills, Hansen, Fanno and Snyder. The four with the highest score were elected.⁷⁵

In the third election of fellows in 1937 the following five passed through: A. Cowles, J.R. Hicks, G. Mortara, R. Roy, and H. Staehle.

The experience so far with the cumbersome nomination and voting procedures was not too good. The next time around was in 1938 and A.L. Bowley, the President, worked out new rules with Cowles, which i.a. set the maximum number of Fellows to 7 per cent of the number of members. The crucial nomination by the Council would now be conducted by having each Council members approve or disapprove of each suggested name and rank all the approvals. Of those who had been approved by a majority a number not succeeding twice the number to be elected would be sent to the Fellows for the final vote.

Frisch was opposed to the new rules, but was the only one who voted against adopting them in the Council. Frisch's would have preferred a more sophisticated system with both positive and negative votes in the nomination process. The new system turned out to be a flop. The number of new Fellows should according to the percentage rule be five, but only four candidates passed the nomination process. Hence, there was nothing to vote over for the Fellows. Those who passed were O. Lange, W. Leontief, J.C. Stamp, and T.O. Yntema.

Cowles explained to Bowley: '... an unexpected, and I think, unfortunate situation has developed. ... The Fellows are thus given no opportunity to indicate a preference. ... It seems to me that this outcome is contrary to the intent of the Constitution and I suggest that we at once set about revising the rules which will govern the next election. ...'⁷⁶

Frisch's alternative system could hardly have done worse. After this election Keynes was indiscrete enough to show Piero Sraffa that Cowles has "disapproved" of him. Sraffa withdrew immediately from the Society and asked for the return of his subscription payment.

7. The war years

The war years made an impact on the Society and *Econometrica*. The annual meetings were largely cancelled and the volumes became considerably slimmer. The outbreak of the war in Europe isolated one country after another. Communication with the Editor-in-Chief became more difficult after the German attack on Norway in April 1940, but was not completely broken off until United States entered the war in December 1941. The 1944 volume came to only 262 pp. '... because of the small number of papers available', but the subscribers were compensated by receipt of the famous Haavelmo *Supplement*, which had been intended as a Cowles Commission Monograph. The contributors to the volumes for the years 1941-45 comprised only very few non-U.S. residents, mostly from neutral countries such as Australia and Sweden. The lack of manuscripts was a natural consequence of there being no Econometric Society meetings in Europe throughout the war years, and cancelled meetings in the United States in 1942 and 1943. The U.S. meetings were resumed in 1944 with a meeting in Cleveland, Ohio, the announcement stated the purpose as '... to stress the indispensability of science for the future of civilization in war and peace.'

The ten year anniversary of the Econometric Society was celebrated by a Decennial Luncheon during the Society meeting in New Orleans in December 1940. F.C. Mills, J. Marschak and J. Schumpeter spoke at the event. Schumpeter appeared to be in a sombre mood and appealed to the members 'to stand by the Society'.

Oscar Lange was appointed Acting Editor in 1942 and edited the journal until Frisch resumed his duties from 1946. Frisch was arrested in October 1943, when the Nazi authorities closed the University of Oslo, and sat imprisoned for about one year. Frisch had been reelected in 1940 for this third four-year term as Editor and was also reelected to the Council in 1943. His return to the Editor's chair was marked by his programmatic article *The Responsibility of the Econometrician*.⁷⁷

* * *

Frisch's last letter to Schumpeter before the wartime isolation set in was written in mid-October 1939. World War II had begun. Hitler's troops had crushed Poland, but closer to Frisch was that Stalin had demanded "negotiations" with Finland. In this situation he receives the two volumes of Joseph Schumpeter's *Business Cycles*. Frisch had more than an inkling of what the book had cost Schumpeter to finish. Since Schumpeter's article *The Common Sense of Econometrics* in the first issue of *Econometrica*, Frisch had not managed to get one single contribution from Schumpeter, not even a preview or excerpt from his book. Frisch congratulated Schumpeter 'on the completion of your magnum opus' and continued:

This is a sad morning. Outside it is raining and the wind is blowing, and inside the air is filled with thoughts of the negotiations between Finland and Russia which have just begun. We follow them with extreme attention, and also with apprehension because of our deep sympathy with the Finnish people. ... But at my table I have your book. And so nevertheless this is a cheerful morning. Yoour book has brought me a greeting from a world of intellect and kindness and beauty where the course of affairs is not determined by motorized armies. Will this tell you what feelings your book has released with me.

Please drop just one word, or let your secretary do so, that I may know that this letter has reached its destination. I am sure you are tremendously busy these days - as I am myself - so don't sit down and write a long letter. One word is enough. I am only anxious to know that what I intend to be a token of warm friendship and admiration has been brought across.⁷⁸

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Notes

¹ There is no comprehensive source about the events which led to the foundation of the Econometric Society. Some of the persons who took part in the preparation of the new organization have left notes or memoirs, e.g. Divisia (1953), Frisch (1970), Roos (1948). A brief history is given in Christ (1983). The foundation is also mentioned in various works on the history of econometrics, e.g. Morgan (1990).

² According to Christ (1983) and others there were twelve Americans and four Europeans taking part. *Econometrica*'s own report on the meeting does not explicitly give nationalities of the participants. Oystein Ore was a Norwegian born mathematician - doubtlessly drummed up for the meeting by Frisch - affiliated with Yale University since 1929. Ingvar Wedervang was one of the two full professors of economics in Norway at this time. Ragnar Frisch was still Associate Professor.

³ Frisch's draft constitution was 'based on ideas which had been obtained in an extensive correspondence carried on by himself, Professor Fisher, and Professor Roos, with economists and statisticians throughout the world' (1, p.71).

⁴ Apparently, Fisher had expected Schumpeter to become the first president. Frisch reported to Divisia that '... the meeting played a trick on [Fisher] by electing him president.' R. Frisch to F. Divisia, 13th January 1931.

⁵ Even at meetings were he was not present, his name was reported as one that was frequently mentioned.

⁶ To the history of the term "econometrics" belongs also the discovery in 1934 that the term "econometrics" had been invented in German ("Oekonometrie") by Pawel Ciompa already in 1910 in the sense of book-keeping, see 4, p.95.

⁷ The paper had not been published earlier because Frisch's intention was to gather more statistical material for application of the theoretical methods for measuring utility by the methods expounded in the paper.

⁸ Frisch (1926), p.1.

⁹ Frisch (1971), p.386.

¹⁰ Augustin Cournot; *Researches into the Mathematical Principles of the Theory of Wealth*, New York: Macmillan, 1927 [1838], Foreword by Irving Fisher, p. vii.

¹¹ Fisher (1925), p.20.

¹² I. Fisher was Vice-president of the American Association for the Advancement of Science at the time, see Roos (1948), Christ (1983).

¹³ Divisia was a prolific letter writer. It was not unusual for him to write Frisch two letters on the same day. He had a peculiar habit of filling the page and then adding extra sentences around the margins.

¹⁴ The correspondance referred to in this and following paragraph is quoted in extract in Divisia (1953) and Frisch (1970).

¹⁵ Slutsky had before 1926 sent Frisch his 1915 paper "Sulla teori del bilancio del consumatore" which was rediscovered by Henry Schultz and others in the mid-1930s.

¹⁶ A.L. Bowley to R. Frisch, 8th November 1926.

¹⁷ E. Slutsky to R. Frisch, 17th December 1926 (translated from German). Slutsky added further constructive comments on the importance of planning a widely defined journal, while concentrating in few hands the organizational preparation:

Was die Gründung einer Zeitschrift betrifft, so wird sehr viel von den Abgrenzung des Terrains abhangen, die man zur Grundlage der Kraftsammlung legen wird. Wird man solche Arbeiten nicht ausschliessen, die mit grundlichen mathematisch-statistischen Methoden zur Kenntnis der empirischen Regelmassigkeiten der Wirtschaft beitragen, ' also nicht zur reinen Oek. angehoren, - werden auch die nicht mathematischen Arbeiten zugelassen, die der exakten Forschung durch logische bzw. phanomenologische Analysen den Weg vorbereiten konnen, so wird der eigentliche mathematisch-theoretische Kern der Zeitschrift mit einer so umfassender "Hulle" versehen, dass man in Betreff des Umfanges des moglichen Leserkreises keine pessimistischen Gedanken haben kann.

... Vielleicht ware es angezeigt in der ersten Vorbereitungsphase die Grenzen des Personenkreises, die zur Berathung angezogen werden, so eng als moglich durch Idee des "Kerns" unseres Programms bestimmen lassen, um nicht zu sehr der Gefahr ausgesetzt werden die notigen Grenzen zu verlieren.

¹⁸ The Memorandum is quoted in Divisia (1953), pp.24-25.

¹⁹ O. Kohne to R. Frisch, 18th October 1932.

²⁰ Frisch reported to Divisia after the conference that the prospects were not bright and there might no be a journal for some years. (R. Frisch to F. Divisia, 6th January 1928)

²¹ The meeting is discussed in anecdotal terms in Christ (1983) and Roos (1948). I have found no documentary evidence about this meeting and am not sure of when it took place. Neither have I found any record of an invitation sent out in 1928 as mentioned in Christ (1983).

²² F. Divisia to R. Frisch, 22nd March 1930, and R. Frisch to F. Divisia, 26th June 1930.

²³ Of the addressees J.B. Clark, who was 83 at the time, never joined. Neither G. Cassel, E. Slutsky nor A.C. Pigou ever became members. Cassel refused outright after the Society was founded: '... as I do not want identify my strivings with those of [the Society]' (G. Cassel to R. Frisch, 14th september 1931, transl. by O.B.). Pigou may have expected to be offered a more honorary status than ordinary membership. Why Slutsky never joined is more of a mystery.

²⁴ Quoted from Divisia (1953), pp.26-27.

²⁵ Quoted from Divisia (1953), p.29.

²⁶ Constitution, prgr. 2, 1, p.106.

²⁷ C.F. Roos to R. Frisch, 23rd March 1934. The plan was apparently not executed. It is not clear how Roos had estimated the expected return.)

²⁸ R. Frisch to F. Divisia, 12th October 1931.

²⁹ J. Schumpeter to R. Frisch, 28th October 1931. The entrant with a "healthy attitude" was Frank A. Pearson.

³⁰ A.L. Bowley to R. Frisch, 25th October 1931.

³¹ I. Fisher to R. Frisch, 3rd July 1931. Harvard University, but not the Department of Economics, would in any case have been represented by the eminent statistician Edwin B. Wilson who was one of the 16 present at the organizational meeting. In the end the three agreed on both Taussig and Carver.

³² I. Fisher to J. Schumpeter, 16th June 1931.

³³ H. Staehle to A. Cowles, 7th February 1932.

³⁴ The Econometric Society Minute Book, 1933.

³⁵ R. Frisch to J. Schumpeter, 11th January 1933.

³⁶ R. Frisch to W.F.C. Nelson, 23rd March 1934.

- ³⁷ R. Frisch to F. Divisia, 4th September 1926.
- ³⁸ F. Divisia to R. Frisch, 16th December 1926.
- ³⁹ R. Frisch to I. Fisher, 20th May 1931.
- ⁴⁰ A. Cowles to I. Fisher, 18th October 1931.
- ⁴¹ I. Fisher to R. Frisch, 18th October 1931.
- ⁴² I. Fisher to R. Frisch, 18th October 1931.
- ⁴³ F. Divisia to R. Frisch, 26th November 1931.
- ⁴⁴ J. Schumpeter to R. Frisch, 11th December 1931.
- ⁴⁵ I. Fisher to R. Frisch, 15th December 1931.
- ⁴⁶ I. Fisher to R. Frisch, 24th January 1932.
- ⁴⁷ A. Cowles to C.F. Roos, 9th February 1932.
- ⁴⁸ A. Cowles to I. Fisher, 18th March 1932.
- ⁴⁹ I. Fisher to R. Frisch, 25th April 1932.
- ⁵⁰ Letter from J. Schumpeter to R. Frisch, 29th March 1932.
- ⁵¹ I. Fisher even held the Presidency of the American Statistical Association while he was President of the Econometric Society.
- ⁵² Quoted from abstract in *Econometrica* **9** (1941), p.179.
- ⁵³ R. Frisch to F. Divisia, 25th August 1931.
- ⁵⁴ R. Frisch to J. Schumpeter, 25th February 1933.
- ⁵⁵ The report from the Paris meeting was written by G. Lutfalla and was not published in *econometrica*, but in *Revue d'Économie politique*, **47** (April, 1933), pp.173-192.
- ⁵⁶ See e.g. Tinbergen (1974).
- ⁵⁷ R. Frisch to F. Divisia, 13th August 1932.
- ⁵⁸ Jerzy Neyman, then at University College, London, reported to Frisch that several members of the Econometric Society regretted that Amoroso's article contained so much political propaganda (J. Neyman to R. Frisch 4th March 1938). Frisch stood by his acceptance of the manuscript, arguing that much as he would like to change the presentation it was fair 'as a description of Pareto's work' (R. Frisch to J. Neyman 7th March 1938). The politics of the outer world did not often cause editorial controversies, but the Amoroso issue was followed soon after by P.H. Douglas' obituary of Henry Schultz (**7**, pp. 104-106) which included sharp political formulations. Frisch accepted the wording on similar grounds as in the Amoroso case, but the Managing Editor mobilized sufficient pressure on Douglas to make him replace 'Hitler, Mussolini and Japan' with 'dictators and militarists', 'fascism' with 'totalitarianism' and make other amendments.
- ⁵⁹ German was cut out lest the Italians should claim their rights to publish in own language, but also for economic reasons. Cowles worked out that if the journal could be considered as an English language journal, i.e. with only occasional French contribution, 300 libraries would subscribe. A multi-language journal would be limited to less than 25 academic libraries. What could be gained in Europe, would not in any way outweigh the loss in the U.S.
- ⁶⁰ The Slutsky article appeared in *Econometrica* **5**, pp.105-146, and the Konrad's contribution in **7**, pp.10-29, both translated or supervised by H. Schultz.
- ⁶¹ R. Frisch to D.H. Leavens, 22nd December 1940.
- ⁶² There are numerous instances, e.g. an endnote to A.L. Bowley: Note on Professor Frisch's "The Problem of Index Numbers" (**6**, pp.83-84), a similar endnote to H. Mendershausen: The Definition of "Equal Well-Being" in Frisch's Double Expenditure Method (**6**, 1938, pp.285-286), a note between footnote 8 and 9 in J. Tinbergen: On the Theory of Business-Cycle Control (**6**, pp.29-33), and note 10 in A. Wald: A New Formula for the Index of the Cost of Living (**7**, 1939, pp. 319-331). The footnotes could even appear in a later volume, see **9**, pp.94-95). Another editorial oddity is Frisch's famous criticism of Kalecki's dynamic business cycle model which appeared in the issue prior to the one which contained Kalecki's article (**3**, pp.225-226 and pp.327-344, respectively).
- ⁶³ H. Hotelling to R. Frisch, 26th May 1938.
- ⁶⁴ R. Frisch to F. Divisia, 25th May 1933.
- ⁶⁵ I. Fisher to R. Frisch, 18th January 1934.
- ⁶⁶ C. Gini to R. Frisch, 4th January 1934.
- ⁶⁷ I. Fisher to R. Frisch, 18th January 1934, R. Frisch to I. Fisher, 26th March 1934.
- ⁶⁸ R. Frisch to C.F. Roos, 21st March 1935. Roos also criticized in equally strong terms Tinbergen's business cycle survey, which appeared in 1935 and ran to more than 60 pages.

⁶⁹ R. Frisch to J. Åkerman, October 1938, and R. Frisch to J. Åkerman, November 1938, transl. OB.

⁷⁰ J. Schumpeter to R. Frisch, 2nd November 1934. The worst incidence was Frisch's rather unpleasant rebukal of W. Leontief in *QJE* 48 (1934), the last paragraph of which Schumpeter characterized as 'a slap in the face you gave the whole [Harvard Economics] department'.

⁷¹ Constitution, prgr. 3, 1, p.106.

⁷² Constitution, prgr. 3, 1, p.106.

⁷³ Frisch told Fisher that he would have proposed Marschak for the first group of Fellows were it for a remark by Divisia that Marschak did not know what a partial derivative was. Frisch had now met and read Marschak and knew there was nothing to Divisia's remark. (R. Frisch to I. Fisher, 6th December 1933)

⁷⁴ Econometric Society Minute Book, 1933.

⁷⁵ The election of R.G.D. Allen, C. Bresciani-Turroni, M. Ezekiel and J. Marschak was announced in **3**, p. 477-478, accompanied by the following note by the Council:

A surprising result of the vote was the discovery that works of several well-known nominees had been read by only a few Fellows. Indeed, the ballots show that some nominees failed of election primarily because their work was to a large extent unknown to the Fellows. This indicates how difficult it was to keep abreast of new developments in econometric research throughout the world when publication was as widely scattered as it was before the founding of *Econometrica*. In some instances the writings of a nominee were widely read by Fellows in his own country but were unknown to Fellows in other parts of the world. It appears, therefore, that authors of works which are not published in *Econometrica* should endeavor to send out large numbers of reprints. In this way, members and fellows of the Society can be kept constantly apprised of new discoveries in the rapidly growing field of econometrics. (**3**, p.479).

⁷⁶ A. Cowles to A.L. Bowley, 29th December 1938.

⁷⁷ *Econometrica* **14**, pp.1-4.

⁷⁸ R. Frisch to J. Schumpeter, 13th October 1939.