Herra

Professor Rag ear Frisch

0 S L 0

Universität

### Sehr verehrter Herr Professor!

Ich danke Ihaes vielmals für Ihre freundliche Aufklärung und bedaure ausserordentlich, dass ich seinerzeit aus technischen Gründen nicht imstande war, mich am Sie persönlich zu wenden, wie ich es in andern Fällen getas käkke hatte. Ich hoffe, bei nächster Gelegenheit die notwendige Beriehtigung anzubringen und die Leser auf mein Versehen kinzuweisen.

Inzwischen hüre ich, dass eine weitere Schrift von Ihsen über dase selbe Gebiet im Vorbereitung ist und freue mich darauf ausserordentlich.

Ich versichere Sie meiner ausserordentlichen Hockachtung und verbleibe

Thr sear ergebener

Marschak

Dr. J. MARSCHAK
Privatdozent

Grigistaret villing 17 horsens tra J. Morsehalt

HEIDELBERG, SCHRODERSTR. 67 TELEPHON 4650 29.Februar 1932.

Von meinen Publikationen können die folgenden als "ökonometrisch" bezeichnet werden:

- Elastizit
   ët der Nachfrage. T
   übingen 1931. (Beitr
   ge zur
   ökonomischen Theorie, herausgegeben von E. Lederer
   und J. Schumpeter, 2),
- Die Verkehrsgleichung. Archiv für Sozialwissenschaft Bd.52 (1924).

Ohne mathematische Symbolik, aber im Zusammenhang mit den Erkenntnissen der mathematischen Oekonomie stehen oder ökonomische Forschung fordern:

- 3.) (Im Druck): (mit W.Lederer): Grössenordnungen des deutschen Geldsystems (Berechnung der Quantitäten der Verkehrsgleichung für Deutschland 1928/9 und 1931/2). Archiv für Sozialwissenschaften Bd.66 (1932).
- 4.) Wirtschaftsrechnung und Gemeinwirtschaft. Archiv für Sozialwissenschaft Bd.51 (1923).
- 5.) Zur Theorie und Politik der Verteilung. Archiv für Sozial.wissenschaft Bd. 64, 5.8 ff. (1930).
- 5.) Consumption (Measurement of). Encyclopædiæ of Social Sciences.
- 7.) Piacelmélet (Merkttheorie) im Ungarischen Handwörterbuch der Volkswirtschaft (Közgazdasägie)
- 8.) Ueber: Pantaleonid e Broglio u'Ajiano. Te**mu**, tesi, probleni e questi di economia politica. Archiv für Sozialwissenschaft Bd. 52 (1924).

afferse four les Dr. J. MARSCHAK Privatdozent on september: HEIDELBERG. SCHRODERSTR. 67 # 5- Peter (Nordsee TELEPHON 4650 20.8.32 bis Warneke. 761 A Cher Mensies Frist, concernant to plan as resuly system by or publication offert statistiques agent un interêt écommetrique. J'as reflection sur a plan it fle a prouve excellent, fe sur remeries sur le procession collaborer et is sur remeries pour le principal an comp d'seil deux les publications fen dispues et un principal, office de, les publications fen dispues et un parioriques, office de, semi offindles et privées, pour fair la selection des articles etant rignes d'ése mentionné dans le revue. L'éles moi qui de ai a feure à choix, on for more of cities statistiques offices statistiques as full custing, on lear remet be removed tout of the custing of the sea publications on lear remet be removed touts of the plus as publications for he pourrout per its objet of the restriction. Le plus simple servit per etse so my convoyer lears as publications. hoices of hatiers et Listes & fullications, Je ferais alors horices & hatiens et Listes & fullications of gerains alors le choix fore timin aires; afois avoir obtenu les font numeros et as publications chrisis je frois as numeros et as publications tout a qui provendent numeros allebin et renveron de qui provendent aucros allebin et renveron de n'être for envenument des a nos i seits there aux p le bout souvent des publications de fetile change in l'aminguin 10 loud puis orment es souveries (cantons) suives, chats au l'aminguin 10 loud puis municipations prioriters work". Comme ei bales in ferraint solissant parfois prioriters work". Comme il che impossible de me faire envoyer toute cette mane de fafice il fout a borner aux Invies pe he toblisance de fafice il fout a borner aux Invies pe he toblisance une lettre circulaire prier a) les offices obabitéques centraix (test: (on fe'dérain) 31839 : les sociétés statistiques, d'entroyer féniriquement, à 4 Rédaction de 1 Eceru. -) pour ly U.S. A. il I Department of Commerce of Our Statistics metrice for il les indices de matières de leurs revues personiques y les listes on leurs fublications non-periodiques

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Breva. nr.

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#### Dr. JAKOB MARSCHAK Privatdozent

U. B. Osto Brev ... III.



HEIDELBERG, SCHRÖDERSTR. 67 TELEPHON 4650

Lieber Professor Frisch,

zu dem bibliographischen Aufsatz für die Econometrica habe ich bereits einige, hier vorhandene Schriften gelesen. Über einige Schwierigkeiten, die sich meiner Arbeit jetzt entgegenstellen, schreibe ich weiter unten. Zunächst möchte ich Sie aber bitten, mir bei der Beschaffung
einiger weiterer Quellen zu helfen, und zwar:

- 1.) den beiliegenden Brief A. an den Librarian des U.S.Department of Agriculture zu prüfen, und, falls Sie damit einverstanden sind, ins Englische übersetzen zu lassen und weiterzusenden.
- 2.) Um Zeit zu gewinnen, Mr Cowles durch den Brief B. zu bitten, die vom Librarion genannten Schriften bei den Verlegern zu bestellen.
  - 3.)Die auf der Liste C.genannten Schriften zu bestellen.

Heute erhielt ich einem Brief von MT Cowles, der mich bittet, das
Manuskript schon im Mai abzuliefern. Das kommt mir allerdings etwas
überraschend, jedoch hoffe ich, die Redaktion jedenfalls vor keine Schwierigkeiten zu stellen, wenn nicht Ereignisse eintreten, die mich überhaupt
am Arbeiten verhindern. Es ist nämlich gänzlich unsicher, ob bei der allgemeinen Situation im Lande in den nächsten Wochen und Monatendie
Arbeit von Forschern und Lehrern meiner Art noch möglich sein wird.
So möchte ich Ihnen ganz konfidenziell mitteilen, dass ich mich mit
dem Gedanken trage, wenn sich eine Arbeitsmöglichkeit im Auslande ergibt, zu übersiedeln. Ich wäre Ihnen ausserordentlich dankbar, wenn Sie,
falls Sie irgendetwas hören, wo ich meine Arbeitskraft anwenden könnte,
sich meiner erinnernen.

Mit freundschaftlichen Grüssen
Ihr
Ihnen stets sehr ergebener
Marschak

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## Liebs Brufemer Fries.

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Marsidek

HEIDELBERG, 11.Marz 1933. SCHRÖDERSTR. 67 TELEPHON 4650

nr.

Herrn
Professor Ragnar Frisch
Oslo
Storgatu F

Lieber Professor Frisch,

mathematische Darstellung zu kondensieren, danke ich Ihnen aufrichtig. Ich bin dabei zu einigen für mich neuen Aspekten des Problems gekommen und glaube, methodisch einiges gelernt zu haben. Der beiliegende Aufsatz deckt ein viel grösseres feld, als der Ihnen bekannte Vortrag und geht auch über den Archiv-Aufsatz hinaus, und ist dabei kürzer. Mur im ersten und letzten Kapitel ("Anwendung auf zwei Streitfragen") musste mehr"in Worten "gesprochen werden, um den Zusammenhang mit den anderen Autoren darzustellen. Die statistischen Daten in § 5 (und am Ende des § 9) sind zum Teil noch unveröffentlicht; eine ausführliche Begründung der Schätzungen würde aber den Rahmen des Aufsatzes sprengen.

Ihr

Ihnen stets ergebener

Marschak

Dr. JAKOB MARSCHAK Privatdozent

HAK

% D'Sobotka Wien XIX Springsiedelgane 27 (Austria)

HEIDELBERG, SCHRÖDERSTR. 67 TELEPHON 650

Dear Profesor Frisch,

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#### Dr. JAKOB MARSCHAK Privatdozent

HEIDELBERG, SCHRÖDERSTR. 67 TELEPHON 4650

Wien 29, 3,33

% br Sobotka Springnedelgane 27 Will XIX

Dear Brofesor Frish,

this list of my preblications will perhaps be of some use in connection with my recent letter. Perhaps it can be useful to note, that the publications No 17 are a piece of wellichive work performed by a group of young convenist under a Close direction of Prof. Lowe, Roy, Harmy un myself. I hope not to feet you to too much trouble and am, with many most tineles thanks Jours very today

Marthak

Dr. JAKOB MARSCHAK Privatdozent

HEIDELBERG, SCHRÖDERSTR. 67 TELEPHON 4650

#### ALLG EMEINEVOLKSWIRTSCHAFTSLEHRE.

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Ferner wirtschaftspolitische (hauptsächlich handels- und kartellpolitische) Aufsätze in der Frakfurter Zeitung vom September 1924 bis Februar 1926.- Rezensionen im Archiv für Sozialwissenschaft.

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U. B. Os o Bress M. 761 A

Bitte nicht mehr an die Heidelberger aven, Indere neur nach Wies Telreiben! Wien XIX , Springsiedelgam 27

6. april 1833.

Liebr Brogerown Frisch,

ich wein nicht, of ich gut getan habe, Show die 4 cite meiner Publikationen zu schicken. Ich fürcht, dans hi den Eindruck einer selv seroftickelly arbeitweise bekommen werden. Mein Wrenner, unter there deitery wheiter de Konner, ist aler gerade deswegen to group, weil ich in sieser bebeit dei Expelling meiner langjahrigen Schnrecht erblicke, mich gang konsentriert der "Okonometrischen" Forscheung zu widmen, ahre durch wirtchaftspolitiche over warologische tragen utgelinkt for moven. Set halv much Willendung de Universitätsherient habe ich mich beruflich binden missen; lees, and die allgemeine Literation un dentaten ur soundaftichen Reben, die eine Spesialisierung himserist war, hat nich danism aumerhalt bergingen (" thumbisher" Bahn gehalten, die ein enner mehr klarer els die wichtigste sehe and der ich, wenn es mis moglich wins, alle men geistigen Kröfte widmen michte.

Seracle jetst stehe ich wiche am Scheidewege, nachsem meine akademische lauftohn in Dentschlen ab gebrochen ist. Halten min tri beiden letzlen Jahre - zum ersten hall - eine bij lichkeit trabigeren bebeitens sychen, to it win es jetst vielligt notwenig sein, ergendeinem Broterweis zu liche in Wissensleptliche bebeit weide auf

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Oslo. J'espein, on on toward elacurer pour un certain nombre d'anners (4). pairrais, Danter, Que fai quelque jours 5 fenère 1 % De Hour Stackle the force for 10 Chemin de Rockes) ; tie j'es and derit depe s' ly cisconstances whites in a friant or in y somme ready way. de y vecuper It beaucoup J'estère d'arranger la question de 4 Review on or choses featuret Statistical information, comme was clover morgani Forms with alter de 71. - Vers le 25. aprè je mai 1 as anner dupor -Jourse V april avoir fini ly Paris they mon five ( Lin Marsder, So, Rue thesty movemently et e'est juryour Chateaure Paris (x =). Je visiterai o Paris " It woundered a apprecion intand My gray. ce qui me semble

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Mars chase

Je vong semis bier recomment.

Norwelle korene: 22, Rue The office gentier Cher Brof. Front, ge mis anon's Paris arout hier, et j'ai en une unversation avec MM. van Lickle et Kithrige. les deux solutions, dent vous avez parle avec A. Kithedge out, touts les deux, renumbre des obstucles. I has fellowships pervent i'm accorsis, en princip, sembened and personnes " having taken footing " days leur profre pays - tanois que moi j'a; perou le terrais, un l'an or le garquer. On avait fait res exceptions pour ois russes et ver Malieur expulsés, muss sculement an taut qu'il ont pu d'monter en is ont certaines chances dans un pays étranger. J'ai emayi de persuales M. van bekle et 14. Kilhrige que les clances de "taxing footing" en etranger servet ansiverablement augmenter, comme a effet d'un training dans I hashitut oslo, étant donné que le nombre des personnes for maniant thricusement les methodes econometriques' est heavenup plus fetit que a demande qui va sistement se developper sous tes unieg frichernes dans pasque tous les pays de monde four a gense d'athères; et que c'est sustout le travuil sous whe direction, dont je me fromts des effets favorables. - Si vous étrez en état de reinforcer ces asjuments de votre prope auto uti ( saus entrepende, retuellement, des obligations quelengues from vous on pro ('hertitut), je vous serai) been obly!! Car à prisent mes arguments mutiviels n'est fois une réuses de varnere les obstanles 2) Quent à la continuation, hors de keydelberg, de, travany & l'Institut or Krivelberg, il & a, G' oursi, day obstacles formely. C'est à l'histitut et aun g eté accordie. Il est vois que le Direction de l'habitet le I'hoshtet be mine ( Buf Alfred Weber) a die demissioner; il est vora vous aussi que

mon brevail +14 Stait mullement lie' 4 and an place gut low quelengue et peut i'he continuée deux chaque at blister que écommè per lege. de formule setisferi, ante pour surmente les obstanles formels et je m'es pas for leur en aider. [ Quemt à l'âge il ne part pur se, officultis]. mendenet. I've reque or alter then assurtly or 4. Marget it M. Schully, in suprement tous budgets universtates by Elat lines. Ja. early morant cour courses to, aux hightest or houlton et de hitchell, et aum à 9 Jeggerhen Francetono. Mais je as peux peux peux avvis blacong d'espoil, étant somme que le nombre des commistes allements qui, comme moi, met perter leur place s'élève au 17 et part course augmenter. ayant or, occupation of fair fails one #1. Mills, butkening ayant or, occupation of augusting fair fairly or attager category want d'entrependre de le bravail ont war il s'agit. J'essayeri dans le bravail or our les groupe pe problèmes seulement, i tavoir: le mesurement hims théoriques ses te problèmes seulement, i tavoir: le mesurement relations theoriques ses to sommes ou tublean economique" de l'or flux et is Jerum Zevern, servestment, faving, Consumption etc. especially during a parish of technical progress. stocks of flai regule Give or C. Clark new le calcul se brunies angleises, et je forsion le cappet officiel livere de King " Nahmal Ineme am his perchasony 6/1820. Nahmel power "Lat aprise" arms que les deux volumes

He "Recent Economic Changes "(kover amontae). Li vous

formoer s'en fasse, je servij her oflezi form si je

formoer s'en fasse, je servij her oflezi form si je

formoer s'en fasse, je servij her oflezi form si je Bureau . 7 Research of the part of the pa les exemplains agrier, cher ani, l'enfermme de mon estime thes porfus et de mes elementicements aux revues et episiss Marschuk.

761 A

Paris, 6 19. 5.33 22, ru Théophile fautur (XVI2) Tel: autur 3914.

Cher Brof. Frink,

pologue tout mon kents à prepare l'organisation en present l'organisation en dem France, d'un amité de revers auer universitaires allements, selon les lignes générales tracées dans le membranisme ci-joint. Je som me fermet, de vous envoyer à membranisme force pur pi page qu'il formeit feut-êts interesse quelques-un de vos collègues, i est œuvre internable.

J'ai suport s' eves elementer de eves seux asmables lettres, l'one concernant 4

Resu , l'autre inversant le gradien in mans fer formbibles de contenue mon havail s' Oslo on contenue.

I di évris s' le Elene Werberg en la prient

H Ben comboir acceptes G charge viene revue

Re G Cothistere ses ", Demand and Leptely course" in

are reservent le problème de Tentlean demonique"

J'estre facticulièrement l'acticle de E. Wenterry

"What do statistical occupant accres store" (Quarterly

of facconique viraiement s'emometrique" et je trome excelle

Votre idés de frier sollicites son aide. J'el con

Lent, lé le froblème sereit s'enle.

too sees represent obly d'en penser. In n'as fas seen enure des nouvelles ni de le van tickle i de Port. Robbins. Mais je un fews for l'espoir. Deman, a Court Banques, sont j'écris ar commencement or atte lettre va dicide sur de ter min ménures s' prends. Comme je ne crois for Eur mis personallement perisse ajout fully we chose 4 ces decisions, je j'espère de recomment Henry fretam le travail sercestique, en attendant des nouvelles. J'esfère su le traduction re aux article " Economic Parameters" va bocutat être entre vos ming et je vous frie se me l'envoyer auxi en en von l'aurez. La fublication de l'article pourreit pent-être seron me sense des services dans mus simundes personnelles, étant donné que touts et un ferme et que les collegers for la l'allement. belances for die que li se l'allement de l'a je ne vruorai s'accum manière me moler aux disp ribins se la provision; mais feut-être il me serait prostre d'obtenis quelques exemplestes ses proof-sheets avant l'impression. Jozez assurés mei rement De dentiments devoues. Marschall

Lower 28/ 33 Dear Rofems Frish, yesterday with my brother I was Informed by him that a letter from bolo las come for me to Paris . I sail to - Day for Sentander ( Spain) where I shall stay for & a fortnight (Universite) International, Palacio Magla leve, Santases; to I stall tend your letter on Friday on behinday only and lank way to person me for the May, - received formy Win dony a letter and & carbon of his aletter to you. Your wrierely lears hak

U. B. Oslo B. 761 A

% Dr. Opie
Magdalen College
Oxford
July 28, 1933.

Dear Brogessor Frish,

the kind interest you have taken in my next future makes it to necessary to inform you at that I am likely to remain in Cxford for the year beginning on Orboter I, 1833. The all Souls College has offered me a Certure ship, at and the only question is, whether it will be possible to find sources for sufflementing the rather small salary.

Once more let me thank you must sneezely for all the brouble of and work you have with me. I am glad thinking of Leg den and the offerhanity to see you.

and also to be able again to work better than it was formable in the last months.

Very truly yours Marschak TELEGRAM fra
OXford L 443 13 15 1427 =

DET NORSKE A nar frisc storget 9 oslo

L.-nr.

TELEGRAFVESEN

Mottatt

Sendt

= i send articles august 22 = marschak magdalen college

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U. B. US 0 B. . .

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fra

7614

21, Stephens Road Headington Oxford. August 23, 1833

Dear Rof. Fride,

I sent yesteray he macusoropt as enregistres letter.

writing on Clark's calculation of forfits I and his (and keynes') symbolo which however are hypographically rather had. O for Oi, O, et.) in output but and he conformed with 0=zero. In the equation (2) is the upper part of page 24 of my answeright O is zero! Please substitut the

word sero" for O in this equation, unless there are two orfferent O's in the type-box at Menasha.

Weleye, Oxford" (but not university of oxford) at the end of both articles. I porjot it

my letter a few weeks ago " where I informed you, that I have for one year, afformed here. Many I again assure you how gratiful I am to you for your

No same

demartes which protebly, have been of much importance influence on the decisions made by english academic addressities and on the fortherming steps of the Rockefell Foundation.

I am flas to meet you soon in Legou!

Yours very truly Manhak

6.8.000 Brus.nr. 761 A 17 Stephen Road Keadington Oxfor 4. 11.33 by dear trink, you are absolutely toght in remnorg me of the Legiter - Report. I am afras d it has sliffed my mind, owny to some unexpected outies (a series of Cectures to be deli-Vered in this term ) while befell me when I came tack to England. I though nevertheless, that after Lavry examones the material, that it hall be not impossible to half fair months + the only one and time is that you (or Mr Bely) would be so know to make all the necessary correcting in the refort of on Bely and on your own paper. Especially as far

as Bely fup is concerned, I have hoped to go to it happen having carefully showed what is said on the scuthrame", "characterorm boots "and other toto after in the paper, using my notes on your lesson and plu Ever extrele à the Nord. St. Tijora. Mul so long I have not come for enough with this and shall surely make Considerable mistures or let lecunes in the nost decisive places. -In re-reading my notes, I see home many valuable things were to be learned in Leyden. I found the result effect of you lesson-day also a very salsofactsby once and am preshed by it to less a tolk much farther han I was before. would it not be worth amisersing to for The next year & lechere on "differential equations yieldry periodicities "or something alike. I come to it by rewry my way on he faters of Keelechs, Tombeyor and yourself. a general mothement inhormation would be very necessary.

# Oxford, 23. November 1833

Dear Friend, I shall send the Leyden Report on Saturday. It will centain 30 -32 typewritten pages. Except in the cape of Denthem and Ricks I for and paper my own reports for each paper and the discussion, and I forms it I to the it letter to give explicitly the equations etc. involved, then to describe in general sentences the procedures and aims of each North Between. This made the report Jone 50% larger than I had intrades before fut the main point of viscussion could not to untouted otherwise not be made so understandate

Your corssally

Marschek

6.8.0510 6reus.m. 761 A

Oxford, 24. November 1837

My dear Frisch,

the papers read in Leysen (with discussions which
followed) are arranged in this report there:

I. Business apples:

Tinbegen
Frisch
Kalecki
Hicks
Wiśniewski
Marschak

Il Theory of the Marketo
Divisia
Zenthen
Lange
Schultz
Beltz

III Other suggests

V. Dorf Furlandono

the paper-reavers only, and only once. Places are always mentioned.

Very constally yours

J. Marschak.

March 15th, 1934

Professor Hagner Frisch, Cora Hotel, Upper Hoburn Place, W.C. 1,

Dear Professor Frisch,

I have to thank you for calling my attention to a passage in the Memorandum of the Norwegian Government's Monetary Committee (Pengekomiten", St. med. nr. 19, 1934, Bilag 1), in which reference is made to my opinions; I should like to take this opportunity of saying that the reference in question seems, on the face of it, to be a misinterpretation of my views.

The passage in question runs as follows:

"The idea that the production apparatus is now so great that new investments are not necessary in order to increase the volume of consumption goods ... is an optical illusion. The point is that what is needed is an expansion of the real capital stock ... but if that is so, saving comes in as a very important factor, as we see it Keynes has on this point drawn attention to something that is very important."

This seems to suggest that in my view # saving, in the sense of abstaining on any larger scale than before from current consumption out of a given income, is a necessary prerequisite for a wise & expansion of investment. If this interpretation is correct, my view is in fact just the opposite of this; for I hold that, if the community is encouraged to diminish the proportion of its income which it spends on current consumption, this will lead to business losses and prove deterrent both to fresh investment and even to increased saving itself, for the unemployment resulting will so diminish the income of the community that the aggregate of saving will be even less than before.

In my opinion the right method of schieving an expansion of the real capital stock is to encourage directly the production of capital goods either by credit and monetary policy, by organised measures to diminish the long term rate of interest, or more particularly by public works directly undertaken by the State. Measures of this kind will not only increase employment and general prosperity, but they will in fact increase the volume of saving itself and are indeed the only efficacious means of attaining this object. For the increased employment resulting from the increased investment - I mean here to include not only the direct employment but also the indirect employment through the increased purchasing power and consumption of those directly employed - will so Increase the real income of the community that they will quite naturally and of their own propensity set aside an increased sum out of their total income for saving. Moreover, there are in my opinion theoretical reasons why employment will continue to increase until their real incomes have sufficiently increased to induce them to set aside as savings just the amount which is required to provide for the new capital investment.

Please feel free to make any use of this letter which you think useful, for I should be very sorry to have my opinion quoted against those various measures for the increase of investment which seem to me vitally essential for success in diminishing unemployment and restoring the economic activities of our various communities somewhat nearer their optimum level.

Yours sincerely,

TM

All Leels College Oxford 31. 1. Juney 1534 Not Majdale College! I dear Broken Frie letter. If you could spare one why of your article on Station and Dynamy (National growing Tidoungs 1828) I (Shows be very fortifil weed. On p. 92, line 7-8 fam in the fortheth on the same fage ), of my Euromotisis -Chide, I defined the volume of transactions t so as to include the fagments of es, intents and ch. ( , sales of prostutive feutors"). a completely vertical concentration is defined on The same page so got that producers (embergeneurs) sell only to consumers

since the annual waters of consumers fords is to , and the annual value of productive factors is also to, it follow: that t = 2ro. [ A soci ] in which the concentration hees merged together enbefrieurs and consumers would be no more a " wricty will monetary circulation"; and turned be good sero ] .-Now, it is of course permissible to admit another definition of t, vit. is as to exclude from t the feyment for productive factors. The note fromth on Juge 92 a vins reasons of against such exclusion; it would mean exclusing to certain things from the transactions figure without exclusing corresponding things (vip. cashfulances bet asis protegies for ways -

31/1-1934 payments etc.) from the money shock figure. Tet such a definition (which seems to be the one you propose) is not impossible, and leads ) the same results. The same is true of the question walther it is preferable to define & by 8 = t -1 (as in my Econometrica-article) or as to . It has no influence on the against itself. would you mind wreating I thinh a few midprints whill important: p. 97 l. 12: after g(x) insert: and p. 100 and 101, inequalities (23) " second inequality is p. 103: read always stocks instead of suffly

Please read on p. 104, l.4, instead of "Taking logs and or flerentiating":
" to offerentiating with respect to v"; then

(25 a) follows directly from (248); and (25) is to be ancelled; on f. 105 the this equation follows also directly from (240) ( by In flew history with respect If you somes find to me any further everelions or suggestic I should be only too grateful. The procedure on p. 96 can be, as I see it now, made simpler and clearer by drawing in the space (x, r, T) (Their the Time Time ) two surfaces: the surface of actual stocks F(x, r, T) = 0, characterized by Stdz = coast; and the surface of maximal stocks F(z,F,T)=0, characterized by 3T=0. The area S(F-r) da in any plane T is then the real stock of money. It flows in time, always filling up, for each x, the god then exis gap between meximal and artual streks; it flustrates, these, between # firms of different consumption - ristances x. Yours very omessly J. Mandak

17 Stephen Road Kearnyton Oxford 8.4.34 No telephone i Buy stop: Hearington, Post Office. My dear Frish, I am extremely glas to know that you woll your a day in oxford. hay expect you det the morning so that we would lunch here? Please write me to the above adoren what train you with take. - I ask M. allen, Phelps Brown, Messe, Frager, and offine to come in the afterour Tis look forman to cussims. Cosially yours Jelandak

761 A

17 Stephen Road Keadington Oxford 27 april 1884

by dear brish, wish of givery me a suffort by a recommendation to one of the University Brofesors . - I have received now a rather vague proposal form Princeton. Proposer Bank D. Socham, Broneston University, Postector, New Yervey, profess a vistory lecturolish for one year dut express, homself only vaguely about the future; and the circumstances it is very offeres to decide, once I have probably in oxform, too, a chance for me year, (but frost almost certainly no chances for later). I feel that Fort. frakam could so more if he had your suffert in backing my case inside the Promeeton Faculty of you world a kows enough to write him , I should be extremely gratful to you. hope you had a food hime in the mountains and are well. I regret you were here for so short & hime, I have to ask you lots of further suchins. Jours vey meny flarschak

# ALL SOULS COLLEGE, OXFORD.

22.6.34.

Professor Ragnar Frisch Universitets Ökonomiske Institut Blindern, Oslo, Norway

My dear Frisch,

I am so grateful to you for your letter of June 6th and contents I enclose a copy of my letter to F. Wangh. There I quote among others two articles of Bowley and R.S.D. Allen which deal with the "Pigou - Irrequiratity" which occupied us when you were here.

My Note on "Horizon" and External Economies has suffered delay because I found in Edgeworth and in Cunnyn - ghame similar ideas which must be referred to if the Note has to have a more complete character.

I first thought to give it up. But I think now that it may be still interesting to write about it sometimes later.

Very sincerely yours

J. Marschak

U. B. Cs.: Brevs. nr 7614

> 17 Stephen Road, Headington, Oxford.

3 February 1935.

My dear Frisch,

I am very much ashamed that you had to remind me about my duty regarding Mr. Shoule's article. I was very busy indeed.

In the first paragraph of the enclosed note, I have tried to compress the substance of the article into a few words; although I am not sure that I have done full justice. I am, however, certain that large parts of the MS. are mere "ornaments", e.g. p.24, or half of the fundamental graphs after p.4 (since the <u>direction</u> of the changes in time is afterwards stated to be irrelevant), and the practical application on p.26 seq. On the other hand, the decisive steps of the method are stated in a rather elusive way (on p.7 and p.19). The use of R. A. Fisher's tests for small samples is interesting as a technical device, but of course not of primary relevance.

Can you excuse the delay?

Very sincerely yours,

That hak

PS. It you find my argument wrong, can I have your opinion?
The Ms. follows under separate cover.

Ad Drive to J. Marschar T. P. Frisch To 1800.

# NOTE FOR R. FRISCH

I am not sure that I have fully understood the MS. The exposition is not very clear or concise. The method seems to be as follows: Segregate the year-periods during which the prices moved in a direction opposite to the for the whole series of such year-perists Compute the correlation coquantities concamed. efficient between the first differences of prices and If it is high, the first difference of quantities. that the to indicate this is taken as an indication of the stability of the was stable demand curve during the whole period observed; and this entitles us to suppose that the regression coefficient of logs of prices on logs of quantities is approximately equal to the elasticity of demand.

It was, however, shown by R. Frisch (in his book on "Pitfalls", whith was not accessible to Mr. Shoule, cf. Note 3) that a high correlation between prices and quantities may indicate, not the stability of the demand or the supply curve, but a correlation between shifts

of both curves, such as is likely to occur owing to trends and cycles. Mr. Shoule mentions — in another and less relevant connection — that trends and cycles are without influence in his case (p.19); but the argument does not seem convincing. More particularly, it is not shown why by computing the correlation between the first differences of the prices and quantities (or their logs) instead of the prices and quantities (or their logs) directly the influence of correlated shifts is eliminated.

The author seems to think (on pp.3-4) that his method shares the advantages of Pigou's "method of triads" without the disadvantage of Pigou's restrictive assumption of the demand curve shifting uniformly within any two-year period. But Pigou discards at once, automatically, all those two-year periods where his assumption is not fulfilled. And even a strong and non-uniform shift of the demand curve over the whole period of observation is without danger for Pigou. In Mr. Shoule's case, on Ma when have, however, shifts of demand and supply curves over the whole period would probably, if correlated, completely invalidate the results.

17 Shephen Road Heavylon Oxford 29.7.35 marky framework My dear Frisch,

Joseph Minh ! Lane
already expressed my goatstude for your knoly senory me jour book in Confluence Analysis. I have more carefully Shroico, in he meantime, he last chapter of it but I am still lovery forman to perusing with greater attention the turnamental fast of it, which seen to become indispersable for any kind of "fitting" work. Thema run very much. I enclose a borper " or Investments" which the if to be the hans of a compounication which I show that to make in Namur. It could be also titled . In some magnitudes in the Certital Musket". Bowley has fiven his firmel assent; but quit independency from

this, I though it may be expedient to let you have it contents begin the oral

luvary fram to meetry gur is Namur and Discuss with you many things. Tinkeyon wrote me that he intends to ame. hope he needing will again he Ladges: sugardan. West July Strang Mindered with grate allered the which the the tent of the tent Special Reserve to the terms of the second o the last a first file. It has been to Partie metales and a second a second a second as

[Fra: Jacob Marschalt].

U.B. Osto Brove Ur. 761 A

# UNIVERSITY OF OXFORD INSTITUTE OF STATISTICS

OXFORD 2722

46 BROAD STREET OXFORD

19th November 1935

Professor Name Frisch,
Institute of Economics,
Oslo University,
Oslo, Norway.

My dear Frisch,

I should be very grateful if you would send me a reprint of your contribution to the "Nordisk Tidsskrift for Teknisk Økonomi" on the application of the principle of substitution in the chocolate industry.

Would you mind answering the following question? What type of calculating machine do you regard as being most suited for econometric work, especially for the ordinary work involved in correlations, etc. We have here just enough money to buy two machines and I should like to spend it in the optimum way.

You may be assured of my gratitude for this help,

Yours very sincerely,

To Marschak +) about £ 250-300 U.S. Osio Brevs. nr.

UNIVERSITY OF OXFORD

Uregistrert vedlegg til brevene fra J. Marschak til R. Frisch.

OXFORD 2722

46 BROAD STREET, OXFORD.

6th January 1936

Dear Sir,

The Institute of Statistics has recently been founded by the University of Oxford to assist research in Economics and Social Science, particularly on its empirical and quantitative side. To this end we are endeavouring to build up a library and a collection of documents.

It would be of the greatest value to our members and readers to have access to copies of your publications and we should be grateful for your assistance in getting them.

It will in many cases be difficult, if not impossible, to obtain without your assistance many of your earlier articles or to secure for the Institute those of your publications which were printed in journals not usually subscribed to by a library mainly equipped with economic and social statistics; publications, for example, in mathematical, engineering, agricultural, medical, biological, etc., reviews. But even apart from these special cases, the possession of any of your publications, either reprints or otherwise would be very desirable. Such works as you care to deposit in the library will, of course, be grouped and filed together.

We should be most grateful, therefore, if you would supply us with reprints of any of your publications, either of recent or of earlier date, which are of importance from the point of view of statistical method or are of general economic or social interest.

Will you also add our address to your list of the recipients of your future publications?

Yours truly,

J. Marschall

Director

P.S. Duplicated or multigraphed material will be as acceptable as reprints.

Prof. R. Frisch, Slemdalsveien 98, Oslo. i 22/1 36 pl

U. B. Osle Brevs. nr.

# UNIVERSITY OF OXFORD INSTITUTE OF STATISTICS

OXFORD 2722

46 BROAD STREET OXFORD

7th January 1936.

Professor R. Frisch, Universetetets Økonomiske Institutt, Blindern, Oslo.

In spring dies proch

My dear Frisch,

Thank yoù very much for your detailed reply to my letter concerning machines.

Will it be possible for you to get from your Sundstrand agent more details of your "chewing mechanism" - would be be able to write to the English agents in London and give them the necessary details and the cost of such an addition to the machine? Could you samply tell me the works of your agent?

This Institute will (at any rate in the beginning) to met occupy a large staff of operators, and much work will be done by the economists themselves. This has made it necessary to decide on two electrically driven machines. If, however, there is further money to spare I shall certainly follow your advice and have a larger number of hand-driven machines. My further dispositions will greatly depend on the details of the "chewing mechanism", and I shall be glad to have these as previously mentioned.

Yours very sincerely,

T. Man check

U. B. Osio Brees. III.

# UNIVERSITY OF OXFORD INSTITUTE OF STATISTICS

many was the first of the

and made the

46 BROAD STREET

OXFOR

OXFORD 2722

To Belowy 1530 My dear Frish, Thouse you much you your letter, with the excellent negetion reparing the "econometric survey".

do think they wines serve a very argent need. In remailly,

J Las a Lew says ago, a somewhat sometar the iver

har it would be a loss thing to ask me of the Kleynes as herent to explain us in excellent work. It multimetries) way the substance of his vertical work. It expenses from a sensation among English commists.

Those that it will be formall to get reporters

For at lost 1 1/10. for at least he following subject: of Keynos' main !) The main ideas of Keyny' how how ; & I shall am Kann, or Meader; or,
of you fresh to have keynes much! I show support
they you sould write him - 2) on elasticity of substitution (of ethe comment forts a factors): Ref. Hellen, or Kicks .- 3) on Joan Robinson, or Hicks . - v) Sephisism of Income,

Jan ness etc: Lindahl .- s) (as you reject;) there

International Relations, by Oblin (or Harrow). - I feel

Ret These on 'he subject which may prove most that there are "h subject which may prove most abtractive to those "border-liners" when you suggest we should abtract to this mee my: estering as an England is loverned. Subjects (1), (4) and fartly-5) and connected, and could be reserved for one helf-vay; mejut (2) and (3) and a real with another sulf-day.

On 1.297-8 of his new love Keyny many elements. Ouring 11 to Albijo senoramen refluence in lung evenit, has makes our task even more lungentoixo I shall wish you more when I Mentone you comed perhaps get in bound with the Sunorwarians (Other, Lindall or prostly Myrac)? - I have sent the beetry Sunmaneum on to b. Velson. Euro smenly J. Marnhun P.S. I have submitted to jung the the Estator The Econometricy a paper on "Some magnetis is the capture market" (or " On horstmans) Her You have never told you whether you Lowe recised to accept or to decline it. I shows he glad of it would be feebly the in the Eurometrics as many discussions, on Liguisty at someter lings, have those me shown me that many perfe are Intented in hose suesting. If you accept it, I should, make a few alterations, the result of some more thought thinkory over he subject.

U.B. U...o Broys. nr. 76/ A

UNIVERSITY OF OXFORD INSTITUTE OF STATISTICS

46 BROAD STREET

OXFORD 2722

OXFORD 27.10.30

by dear frish,

I agree that bacefie's is

a well written Summary. It is

probably theore superficial

hun Haberler's (which I have

read in draft and which is

going to be probeithed, I think);

and less ratifactory them Timager's

Survey in the Samometries.

Too not know any other,

equally early written Summary

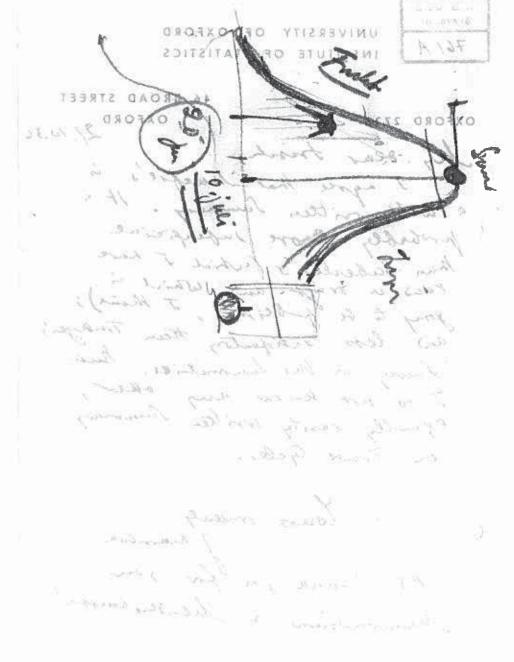
or Trave Geles.

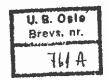
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J. Menster

J. Menster

Lemoranium on blenders hoursen!





# UNIVERSITY OF OXFORD INSTITUTE OF STATISTICS

OXFORD 2722

74 HIGH STREET OXFORD

10th March 1937

My dear Professor Frisch,

May I introduce to you

Dr. H. P.Schwarz who is anxious to receive some trainin econometric methods under your direction.

Dr. Schwarz was a student of chemistry at Heidelberg but has since worked on economics at Cologne and took his degree with, as I understand, some work on Public Finance.

I nope you are well. I shall be in Geneva at the beginning of April and hope to meet Tinbergen and others then.

Yours very sincerely,

A Meyschak

Professor R. Frisch, Slemdalsveien 98, Oslo

Please University of OXFORD INSTITUTE OF STATISTICS

U. B. Osio Breva. or 761 A

OXFORD 2722

74 HIGH STREET OXFORD

18th September 1937

Professor Ragnar Frisch, Vinderen, Ošlo, Norway.

My dear Frisch,

I do not know whether the question of the next meeting of the Econometric Society has been discussed at Annecy. If it has not, or if no suggestion has been finally decided upon, may I submit one or two reasons why I think that some place near Copenhagen would be suitable.

Firstly, it is important to get in closer touch with the group of the "Nordisk Tidsskrift for Teknisk Økonomi" whose printed work is unfortunately only partly accessible to those unfamiliar with Skandinavian languages. Secondly, there exists a great interest in the work done by Swedish and Norwegian economists especially on the monetary side, and partly in connection with their practical achievements. Thirdly, people working at the research institutes in Oslo and Stockholm could make important contributions.

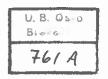
I think these arguments are in conformity with the strategy which inspired the Society to choose Annecy this year; viz., to go to the centres where groups of Econometricians are working.

Alternative suggestions would be: Stockholm, or Paris; but the French (whose group in the École Polytechnique does deserve attention) have already been given some opportunity to attend this year, while Stockholm is I understand considerably further away than Copenhagen.

It was a great pleasure to enjoy your company during the weeks in Colorado; and a great pity I could not go to Annecy,

Yours ever,

Marschan



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### Committee:

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Sir Richard W. Livingstone (Chairman);
Sir William H. Beveridge;
E. H. Phelps Brown;
G. D. H. Cole;
R. F. Harrod;
H. D. Henderson;
Professor D. H. Macgregor;
Professor Sir Arthur Salter.
J. Marschak (Director).
H. E. Caustin (Secretary and Librarian).

74 HIGH STREET OXFORD

21st February 1938.

Professor R. Frisch, Vinderen, Oslo, Norway.

My dear Frisch,

I am very glad to have your letter and shall certainly try to be in time with my article on Assets. Would you agree with the title "Money as a safe and liquid asset"? This title indicates the emphasis laid on the approach to monetary theory as part of the general theory of investment. As you want to link it up with other articles on money I thought you might favour this emphasis. Please let me know if you disagree.

I am looking forward to the copy of your own manuscript.

Yours sincerely,

U. B. Da. 3 Brand 76/A

Institute of Statistics 74 kigs Smet. Oxford 16.6.38

My dear Frisch,

J enclosed, as promised, the
acticle on "Hoarding and the Theory
of arocks"—rather late J am
afraid. J should be very grateful
if you would acknowledge your
fectiving it as the carbon copy J
have is somewhat incomplete.

How are you? And when shall
we neet again? I was so glad to kare
the meet again? I was so glad to kare
the heet again? I was so glad to kare

leasnt much from him.
Yours orncerely
J. Marschare

U. B. Osto Breta

for 17 = 38.

Dear Mr. Trink,

this implement was 400 the in the hospital hearly L'U the Carr min to before the appendix. yserahan was started. to you will under stand if there is some gays 22-4 Ceps: This may he are to the injustion which anger to have pur the thinking and of asker I tranger I would like to explaining to you. yours mi centry Marine Marrhan.

U. B. Oslo Brewer. 761 A

Institute of Statutus
74 High 84;
Oxford.

18/6 Mg

Dear Professor Prisch,

for household asks we to send you the endored 2 pages

top his manuscript on hoading. Please destroy the pages 15 and 16 in the copy he sent you, and substitute there:

yours truly,

to hoarding. The same result can be due to changes of transformation conditions in the sense of an increasing expected variability of yields (for given amounts of assets), i.e. to increased "insecurity feeling".

# 8. Plasticity, Saleability, Liquidity

Suppose the individual has fixed his present assets, as determined by the conditions described in the previous section, It can be shown that the range of variations of the best yields compatible with the assets thus fixed is the larger (1) the larger the dispersion of the frequency distribution of possible yields, (2) the greater the difficulty of substitution between the various fields, as measured by the curvature of the transformation function, (3) the smaller the curvature of the indifference lines. We shall confine ourselves to a simple case of two kinds of yields only.

Let the assets a, b,... assume their best present values. For yields, use the notation of the sections previous to 7. Express the random character of the transformation relationship between the yields x and y (a, b... being fixed) not by using means and coefficients of variation, but by using a random term h, thus

As h assumes various values with given probabilities, the best values of x and y, as required by the taste condition  $U(x, y) = \max$ , also change. They must satisfy the condition

They must satisfy the condition
$$\frac{d}{dx} f(x + h) = -\frac{Ux}{Uy} \dots (8.2)$$

Writing for brevity \_  $\frac{U_X}{U_y}$  = v(x, y) we have from (8.1) and (8.2)

$$v[x, f(x + h)] = f'(x + h)$$

$$v\left[x, f(x+h)\right] = f'(x+h)$$
Differentiating completely and separating the terms in dx and dh
$$dx = dh \left[-1 + \frac{\delta v}{\delta x} + \frac{\delta v}{\delta f} f'(x+h) - f''(x+h)\right]...(8.3)$$

Thus the numerical value of  $\frac{\mathrm{d}x}{\mathrm{d}h}$  is the larger the larger the numerical value of

alue of 
$$\frac{\delta v}{\delta f} f'(x + h) - f''(x + h)$$
 ............... (8.4)

 $\frac{6\,\mathrm{y}}{8\,\mathrm{f}}$  is the curvature of an indifference line and always positive, f'(x+h) is the rate of distribution between the yields and always negative, f''(x+h) is the curvature of a transformation line and always negative. So long as (8.4) is positive, |dx| is the larger the larger the numerical value of the curvature f''(x+h).

If, therefore, under these conditions the addition of a unit of some asset in forming a present balance-sheet makes the curvature f"(x) larger than the addition of a unit of some other asset, the risk contributed by the former is larger, and its marginal productivity (in the sense of section 7), accordingly, smaller.

With a given dispersion of the transformation function (i.e. given degree of "insecurity feeling") - measured e.g. by the mean square root of the values of the random shifts (such as h), the price of the asset a is affected by the magnitude df"(x). Its reciprocal may be called "plasticity" of an da asset: the easiness of manoeuvring in and out of various yields after the asset has been acquired. When plasticity is due to the fact that the future market of this asset is perfect, we may call it "saleability": the more imperfect the future market of an asset the more difficult it is to sell it in order to adapt the yields consequent upon its acquisition to the transformation conditions as they take actual shape in the course of time.

As from 26 st. lungaret, Ris (2600) U. 8. Oslo Bis- iii. 761 A 2 4h June 1248 by dear Friedy Thank in very much for I'm kind and enumerying letter, I seem to be recovering normally attend the frame Cycle conferme h meeting 2 on then. I'm us sure welter you received the corrected bersion of pages 15 x 16 which followed the main 1455, with a days lag. Please don't botter to

auswer if you have,

The second copy of the manuscript is of course also at your signoral.

Havelus told we that

You hard a died. I sumed him

bo rend my cordial comprehentations

to jou and brus Frisch. By the

way, I saw him frisch and

in Frederic Waugh's Errore film,

which free showed we in Washington

last year. I liked it very much.

Your sincerely,

U. B. Oslo Brevs. nr. 761 A 22.7.38 Dear Frink, When the Cambridge Conference and m benevery 20.7 your hemoranem was , till not in he hands of the Chairman D. H. Robertson (Trinity Whye, ambrilge) to whom "he hemosawan Los to he forward by he poster of King's College. We were all extremely sorry about this five of bow buch and of cong, about some fine? absence. (ould I see The conference proves to be a great triumph for the curromatric method, I think ! Even her work Jeftical or non-mathematical mensen from het Interjer, works deserves the freeter attention and that the method is worth

and aguin. not going to Grawn Commal worker Lun ever 7. barren

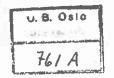
U. B. Oslo Bravs. hr. 26 St. WARDARD & MOOR Oxtrolate. 761 A 1.8.38 My dear Frish, following your suggestion I enclose two changed or eits of the Kaleini recommendation. In the one the word "first" (seemonists) has been Cancelled in the other replaced by "few" If In wowe one or he other and to sens it bank to me, it would save much monvenione as he other signatories, (Hayen and Keynes) are away just now and they it would be officiel to get

discussing more complicated alkraling. But I know weet fly 33 7 cm of the Station with \$ 3 with a offerent affinant? Tam ven frakte 3 for your suffer. Jom't Kink kuleuri knows of & the mater has I know in that then fundament is a is may be altoyether lost is for richtific work the consisting as Polen berry when they are.

U. B. Osio Brance 11.

26 St. Margaret's Rd Oxford 24.7.38

by dear Friend, J.M. Keynes would be prefund to tip he enclosed letter to he Familte On Droit of Dansanne from whom I here received home time ago an inguing as to the possible causivales for the vacant, chain of Rolling Evenowing "
Lowever, to have your agreement Kaleikes and, if possible, signature. Kaleikes for continuing has no prosperty whethere for continuing his worse is Poland and every one agrees that it would be a freak loss to elemonis if he had to sloge don to elemonis if he had to sloge southful worn. He has established a great regulation in the best recent years while in Cambridge -Yours murch J. Marochak



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Professor Sir Arthur Saiter.
J. Marschak (Director).
H. E. Caustin (Secretary and Librarian).

74 HIGH STREET OXFORD

26th September, 1938.

Professor R. Frisch, Slemdalsveien 98, Oslo, Norway.

My dear Frisch,

I have just returned from France and find that a letter from you probably has been lost on its way. Would you care to tell me its contents? I have written to the French Post Office, but there is little hope, I think, that the letter will be recovered.

Yours sincerely,

Marshan

Romefeller tomoution 49 west 49 / heet Coloras. Sings, 761 A New York My dear Frist I um now her ajain, on a Rosnefeller Allowship and a leave of whence from Oxford until October. I enjoy again be Cowle, Commonin Conference although I miss you very much (as also to other people here). Haarelow is here — a great arout for anyon who took the stays here. after he end of he ungerneed I shall stay to her for some trope; Kaareline, World, hundenstausen, Tombre, lerner are also fen, a gow group. leavens feur you sometime ago my Note for Ermondries. I had hoped to suffleners it with some numerical adulations, army Me nen Amerocan bregets; kat's way I hostpones writing to som sneedly. I see now that the only tomande hoger itoms for which the calendarion comes be made now, with he made all along avaslith, an antomother and tollice. And I fear but in was case,

The changes in taste were have been been to committee that the calculation will not prove much. I therefore for abanoon to their the notenting for he tome berry I'm may, however, for he Not not useless the as it stands; it goes a little feeten into the make relationship between demand and more - ordination to my the same I hope yn are well; Karelmo tell, me about your work, I hope it knyrerøry (as always), and I'm are enjoying in Com meenly J. Mararlax

Marschakt 100 Buckingham Road Yonkers-Nepperhan, N. Y. Tel.: Nepperhan 5569 Way 16, 1940 by dear trish, I am ampines to hear about you. I han under in by air mail ormal from time ago. To-say a steamshif (brown - hatran) 5 (for the first sime) tanony mail to Nisway, so I am taning this offertunity to refeat. I am sure many further here sheere my anxiety and would like to unow whether your flans muy bring You her at in the new feetage, is whether 5 oven be of any use - e.g. in tellery on your behalf when your desires are as present. Hoping that I'm and your family are well Euros eur J. Mars chare