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DEVELOPMENT - Machado Proposal II

[redacted]

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FOR FURTHER CORRESPONDENCE SEE:

1969 - 1971.

RECORDS MANAGEMENT SECTION
February 1969

Mr. McNamara, 4/16

In case you do not wish to read through all this I would be glad to provide you with a summary of the "Machado Proposal".

RBS 4/2

Dec - Machado Prop.

FORM No. 57 | INTERNATIONAL DEVELOPMENT ASSOCIATION | INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT | INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

TO: Mr. Robert S. McNamara, President DATE: April 2, 1968

FROM: Luis Machado, Executive Director

SUBJECT: The Machado Proposal

Annexed hereto you will find (marked No.1) the proposal that I submitted to the Financial Policy Committee on July 26, 1963. It deals with the possibility of using the power conferred by Article IV, Section 1, paragraph (iii), of the Bank's Articles of Agreement, to guarantee in whole or in part loans made through the usual investment channels, to assist in financing World Bank projects.

At the time of my proposal (about 5 years ago), the Bank had no difficulty in raising in the capital markets of the world all the funds needed for its normal operations. The balance of payments problem afflicted only the undeveloped countries. Even in the following year, 1964, the Bank was able to raise money at 4-1/8%.

While my proposal was directed primarily to assist the undeveloped countries in meeting their perennial shortage of medium and long-term local funds to supplement the foreign exchange provided by the Bank, there is no reason why in the future the same procedure might not be used to finance the machinery, equipment, supplies and services supplied by capital exporting countries for projects in developing countries.

I am annexing hereto, in addition to my proposal, three studies (marked 2, 3 & 4) made by the Staff on the subject.

My proposal has never been discussed by the Financial Policy Committee nor by the Board of Executive Directors.

I feel that, under the conditions prevailing in the money markets of the world, it might perhaps be useful to give it now some consideration.

Annexes:

1. Machado's Proposal of July 26, 1963.
2. Economic Department Study - April 14, 1964 - (SSM/A/64-21)
3. Report by D. Avramovic - June 2, 1964 - (SSM/A/64-34)
4. Report of Economic Department - February 10, 1966 - (EC/O/66-22)

Form No. 89
(9-62)

INTERNATIONAL BANK FOR
RECONSTRUCTION AND DEVELOPMENT

INTERNATIONAL DEVELOPMENT
ASSOCIATION

INTERNATIONAL FINANCE
CORPORATION

ROUTING SLIP

Date: March 22, 1966

OFFICE OF THE PRESIDENT

Name	Room No.
Mr. Luis Machado	1000

	Action		Note and File
	Approval		Note and Return
	Comment		Prepare Reply
	Full Report		Previous Papers
	Information		Recommendation
	Initial		Signature

Remarks

Dear Luis,

As you can see, this is till a draft internal confidential paper, but I thought you would like to see it. Of course, I would be happy to have any comments that you may have on it.

Irv

From

Irving S. Friedman

FORM NO. 61.EC
(7-35)

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
INTERNATIONAL DEVELOPMENT ASSOCIATION

CONFIDENTIAL

ECONOMIC COMMITTEE

4

EC/O/66 - 22

February 10, 1966

Value Linking of Domestic Bond Issues

1. The attached draft report "Value-Linking of Domestic Bond Issues", dated February 10, 1966, has been prepared in the Economics Department. The study upon which it is based originated in the memorandum presented by Dr. Luis Machado to the Financial Policy Committee of the Bank in July 1963 1/. In this memorandum, Dr. Machado outlined a proposal by which the Bank would become more directly involved in the financing of local currency expenditures in certain of its member countries. His proposal--what has come to be called the "Machado Proposal"--had two primary elements. Firstly, that governments faced with the local currency problem should, in certain circumstances, issue bonds the real value of which would be maintained by being linked to the official rate of exchange. Secondly, that the World Bank should be prepared, if requested by the government concerned, to guarantee this undertaking to maintain the monetary parity in local currency of the bonds thus issued.

2. Various aspects of this proposal were examined in two subsequent Bank reports: in a staff study dated April 10, 1964, (distributed under reference SSM/A/64-21), and in a report submitted to the Senior Staff on June 2, 1964, (reference SSM/A/64-34). The present report is not concerned with the policy issues raised by the Proposal, which in some respects range beyond the purview of economic analysis, but only with the specific question of value-linking.

3. There has been continuing interest in the Bank in the role that value-linking can play, and has played, in relation to the problem of internal resource mobilization for priority projects in countries in which price increases are currently being experienced, or in which fears of such price increases are widespread. The present report has been prepared in response to this interest in value-linking; both the description and analysis of experience given in the report, while presented in a more general context, are largely extracted or distilled from the original staff study. In particular,

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1/ "Memorandum on possible World Bank assistance to help the less developed member countries raise the local currency required to complete financing of development projects", dated July 26, 1963

it should be emphasized that no further field work has been undertaken for the purpose of this report, and that the field work undertaken for the original study was limited to two countries (Finland and Israel) over very short periods (four or five days in each country). The inability to draw on any systematic study of experience with value-linking in Latin American countries was emphasized in the first two reports and still represents a major gap in our knowledge.

4. The report is being distributed for comment, and also to seek the guidance of the Committee members regarding the extent and content of any future work which the Economics Department should undertake in this field of study. It would be particularly helpful in this regard if members could say whether they would consider it useful for the field work to be extended to other countries, and, if so, which countries they have specifically in mind. Furthermore, because of the actual or potential importance of life insurance in the generation of private savings, and because of the significance of value-linking to insurance business in Finland and Israel, it would be especially helpful if members could advise on the possibility and desirability of extending the study to an examination of the growth (positive, negative or zero) of life insurance savings in countries which have experienced inflationary conditions, but in which value-linked bonds have not been available for portfolio investment. This latter possibility has gained additional significance in the light of the UNCTAD resolution (one of the few resolutions which found support among both developing and developed countries) which contended that a larger proportion of the savings generated through insurance companies in the developing countries should be retained in those countries, and not remitted for reinvestment in the U.S. and Europe.

5. Any comments and suggestions you may have on the report, or the matters raised above, would be appreciated and should be sent in writing to me, with two additional copies to Mr. Stanley Please, by the close of business on Monday, February 21, 1966.

C. F. Owen
Secretary

D I S T R I B U T I O N

Messrs.	Friedman	Bell	Maiss
	Kamarck	Edelman	McDiarmid
	Adler (J.H.)	Gilmartin	Sadove
	Avramovic	King (B.B.)	Thompson
	Rist	Larsen	Weiner
	de Vries	Lipkowitz	Wright

DRAFT
CONFIDENTIAL

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

INTERNATIONAL DEVELOPMENT ASSOCIATION

VALUE-LINKING OF DOMESTIC BOND ISSUES

February 10, 1966

Economics Department

Prepared by: Stanley Please

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INTRODUCTION

It is universally agreed that inflation considered in vacuo is undesirable. However, it is now more widely coming to be recognized that such a standard of reference is irrelevant; that the attainment of a high level of economic growth combined with a high level of employment of those factors of production which are scarce, is likely to lead to a rising general price level. This is not necessarily because the process of growth might in a given environment require a generally rising price level (e.g., for providing increased profit incentives to investment decision-makers, for effecting structural changes in the economy, etc.), but because in given institutional circumstances the growth process might result in pressures on market prices which in aggregate lead to a rise in the general level of prices. It is not the purpose of this paper to get drawn into this whole area of controversy. We would certainly maintain most strongly that economic policies should be resolutely pursued to reduce to a minimum the rise in the general level of prices associated with any rate of growth and employment. Particularly important in this regard is the need to reduce the structural problems which make output from certain bottleneck sectors less responsive to price changes than is both feasible and desirable. For it is these inelasticities which are in large part responsible for the situation in which the full employment/maximum rate of growth ceiling is considerably above that ceiling to employment and growth which would keep the general level of prices stable. To the extent that steps can be taken to reduce the gap between these two conceptual ceilings, the area of policy dispute is narrowed.

But both analysis under assumptions which are realistice for many countries and experience over the past decade suggest that a policy choice must ultimately be made regarding the rate of price increase which it is thought permissible to accept for any combination of growth rate and employment. Some people might still be willing to take the view that the stability of prices is of paramount importance whatever the cost in terms of growth and/or employment. Alternatively, they would argue that it is only through asserting this paramountcy that national policies will give price stability the relative importance it deserves. But it is apparent that governments themselves, to the extent that any deliberate weighing of alternatives has been undertaken, have adopted a different order of preference.

Furthermore, governments and international financial institutions must often be willing to accept that it is difficult if not impossible for a country to adjust its policies so rapidly that a continuing inflationary process can be abruptly halted. Stabilization policies must often reflect a willingness to settle for a decline in the rate of price increases for a considerable period, otherwise the best can become the enemy of the good. Finally, even in an economy in which price stability has been achieved, perhaps over an extended period, there can still exist an inflation psychosis resulting from such factors as the knowledge of the knife edge upon which the policy rests, the warning reflected by price movements in neighboring countries, etc.

It follows from the above that it is ostrich-like for national and international economic policy-makers to close their minds to the acceptance of inflation or of fears of inflation as a condition which will possibly, if not probably, exist in many countries - developed and less developed. Without weakening the emphasis that should continue to be given to price stability (and this cannot be too strongly emphasized throughout this study), they would be foolish and inflexible in attitude, to refuse to consider what can be done to counter in part or in full the undesirable consequences of inflation.

These undesirable consequences fall into three groups:

(1) Social - inflation redistributes income and wealth and this is undesirable to the extent that it is regarded as a redistribution in an anti-social direction.

(2) Balance of Trade - under a system of fixed or partially fixed de facto rates of exchange, the exports of a country suffer and its imports increase if its rate of price increase is ahead of that of its trading customers and suppliers (actual or potential).

(3) Economic decisions having a time dimension are distorted.

This paper is addressed to the third of these consequences. It represents an attempt to isolate the nature of some of the problems which arise under this head and to investigate the feasibility of correcting the particular distortions which arise through the device of index linking of bond issues.

II. SAVINGS INVESTMENT AND INFLATION

1. Introduction

In principle there are few economic decisions which do not have a time dimension. Certainly the purchase of most consumer goods and of many consumer services must in some sense be based on expectations including expectations about future prices. For instance a decision to have one's hair cut today at a given price would be reconsidered if there was an expectation that the price of the haircut and of all other things including one's labor were likely to have varied by tomorrow or by next week. However, except in conditions of hyper-inflation when money prices are superseded by barter terms for all transactions, price changes resulting from a change in the general level of prices are not so rapid nor the time horizon to which people can or do operate, so distant, that decisions relating to many economic actions are likely to be markedly changed because of changes in price expectations. This of course does not rule out the possibility of a change in consumer decisions stemming from an expectation of a change in the price of a given commodity or service which is unrelated to a change in general prices.

Whilst this is true of many economic decisions, it is not true of those decisions the very essence of which is that their costs and benefits extend over a long period of time. These are the decisions to save and to invest. Of necessity these decisions must be made on the basis of assumptions regarding the level and structure of prices which will pertain at points of time well into the future. It is therefore, a priori, unlikely that these decisions will be unchanged when expectations regarding future prices change. The justification for selecting for analysis this limited range of economic decisions is partly the general one that any analysis must draw the line somewhere but secondly that from the point of view of economic growth, decisions relating to savings and investment are of pre-eminent importance and thus any distortion of them (for good or ill) is of significance for the World Bank and all institutions having responsibility for implementing the growth goals of the national and international communities.

2. Inflation and Savings

The expectation of rising prices, it is generally held, will adversely affect the level of domestic savings in a community. If, it is argued, savers or potential savers believe that the real value of both their savings and the accumulating interest on their savings will decline over time, then their willingness to save will be undermined. In effect what is assumed is that the marginal disutility of saving increases as more income is saved. To induce a given level of saving requires that the discounted benefit of the saving should be sufficient (no more and no less in equilibrium) to offset the marginal disutility of this level of savings. A reduction in this discounted benefit which is the outcome of an uncompensated change in price expectations, will, therefore, lead to a contraction in the supply of savings.

Undoubtedly this argument is highly plausible though it must be recognized that it might be offset by the income effect of the change in the relationship of present to future prices. Such an effect would stem from a desire on the part of some savers to attain a given real income in the future (e.g., for retirement) and thus to increase their savings in conditions in which there was an expectation of a rise in the probable future price level as compared with previous expectations in this regard. It is generally held, however, that this income effect is insufficient to offset the substitution effect outlined in the previous paragraph.

The major weakness in the above analysis, however, is that it is too limited in its assumptions. Whilst it might be true that ceteris paribus a decline in the real future value of savings will reduce the willingness to save, in fact many of the factors in the situation will be altered as a result of the inflationary process. In particular inflation leads to a redistribution of income. To the extent that this is a movement in favor of those income recipients having a high marginal propensity to save and away from those having a low marginal propensity to save, total savings may increase. This may occur despite the fact that any individual income receiver or recipient group would at a given level of income save less in conditions of inflationary expectations than when it is believed that prices will remain stable. There are in fact strong grounds for believing that inflation will lead to a shift of income towards profits and away from the rentier class and probably from the wage and salary earning class as well. A shift of this nature can be expected to result in a higher level of savings than would otherwise have been forthcoming unless for any country there is known to be a likelihood of increased profits being almost entirely used for increasing distributions to shareholders.

Not only does the inflationary process result in a change in savings through its effect on the distribution of income, it also affects the contribution of the public sector to the flow of savings. The effect on public savings in any country at any time will be the net result of a variety of factors some of which will tend to increase and others to decrease this magnitude. In the traditional government sector (i.e., excluding public enterprises), forces are likely to be at work which will make for an increase in government savings (or a reduction in government dis-saving) during a period of inflation. If the costs of goods and services purchased by the government increase in proportion to the general increase in prices, then it is only necessary for the tax structure to be slightly progressive in order that government revenue should increase more rapidly than government expenditure. This divergence might be less marked if the lag in the response of revenue to price increases is greater than in the case of expenditure. But this lag applies only to direct taxes and even in this case would be mitigated to the extent that people and firms built up reserves on the basis of tax accruals. The foregoing analysis assumes that neither government expenditure in real terms nor government tax policy is varied from what it would be in non-inflationary conditions. Because of the buoyancy of revenue at unchanged tax rates when inflationary price and income increases are taking place, it is possible that the government will refrain from imposing increased tax rates and new tax measures which it would otherwise have done. This same danger

would also arise if the government took the buoyancy of revenue as an opportunity for increasing its revenue in real terms above its hypothetical level under non-inflationary conditions.

Nevertheless in many countries the most marked effect of inflation on public savings operates through public enterprises especially those in the public utility field. During a period of inflation these enterprises almost universally find the price level for their products or services insufficiently flexible in the face of rising input prices. This inflexibility might stem from legal or conventional restrictions on their price structure. Furthermore, it might be the outcome of a deliberate, if perhaps misconceived, attempt to hold back the rise in the general price level or it might merely be a development which arises by default. Whatever the forces at work, the outcome is the same, namely, a failure of public enterprises in inflationary conditions to generate a high level of internal funds for financing their development and for augmenting the total supply of domestic savings. In fact in many instances railways and other public transport, electricity, undertakings, water supply undertakings, etc. run deficits on their revenue accounts which represent net dis-saving quite apart from the demands they make on savings for financing their development programs.

It will be apparent that conditions of inflation and of inflationary expectations have conflicting effects on savings in both the public and in the private sectors of the economy. The outcome in any particular country at any particular time will of course be the arithmetic sum of these negative and positive changes. There seems no reason why we should necessarily assume the net result will be a reduction in total savings. Given this uncertain outcome from the a priori analysis of the problem, it would seem that the only means of determining the effect of inflation on savings is by empirical study. In fact such a study is beset with both conceptual and statistical problems and is only just being commenced in the Bank. It is certainly no part of this paper to pursue this important task. At the same time it should be emphasized that even if an empirical study were to show that savings were not adversely affected by inflation and if at the same time the economic development of the country were being held back by a lack of savings, it would be desirable to counter the effect of inflation on those elements in total savings which are adversely affected.

3. Inflation and Investment

Where availability of domestic savings is the crucial determinant of the level of investment (i.e., where the structural balance of payments problem and the problems of willingness and ability to utilize investible funds are not of significance), the effect of inflation on the quantity of investment will, of course, follow from what was said in the previous section regarding savings; any favorable or unfavorable effect of inflation on savings will bring with it a rise or fall of investment.

As important as the question of the level of investment is the question of the effect of inflation on the allocation of a given volume of investment between competing alternatives. It is now widely accepted that if economic growth is to be maximized there is a need "to compute returns (on an investment) from the point of view of the economy as a whole" and that to achieve this it is necessary to evaluate both costs and benefits in terms of their real values, which may differ from the values relevant for various financial aspects of a project."[1/] Of importance in this connection is any divergence which arises between the financial cost of an input and its opportunity costs and, within this category of problems, the divergence between the financial cost of capital and its opportunity cost.[2/]

The distortion in the pattern of investment which arises out of fear of currency depreciation results from the different distributions of the gains and losses which arise as a result of inflation according to the method by which investment is financed. In general whilst holders of equity investments increase their share of total property income the share of bondholders is reduced.[3/] In the less developed countries where the capital market is unlikely to be particularly well-organized and equity share issues to be in very small supply, the most obvious way to acquire an equity holding in real capital assets is by their direct purchase. This, of course, is the rationale behind investment in land, objets d'art, precious metals, etc.. It is also the rationale behind investment in housing and other real estate. Whilst the supply of investible funds for investments in which an equity interest can be obtained - including real estate investment - is increased, the supply of funds to bond financed investments decreases. However, this changed pattern of investment is in response to changes in the financial return on privately invested capital and does not in the circumstances of inflationary expectations reflect the economic return on alternative forms of capital formation.

A partial solution to this undesirable diversion of investment funds is provided in certain private sectors of the economy by equity investors in effect sharing part of their expected return with bondholders by offering a higher rate of interest on borrowed funds. Hence the appeal to many institutional investors of real estate mortgage business. For the public sector, however, equity investment as such is impossible for ownership of the relevant real assets, which is what is involved with an equity holding, cannot be alienated to private individuals. Therefore in a period of inflation the public sector is denied access to an adequate supply of investible funds, and some of the priority projects in this sector are liable

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1/ IBRD - "The Evaluation of Agricultural Projects: A Study of Some Economic and Financial Aspects" (E.C. 128), prepared by Herman E. van der Tak.

2/ See IBRD: "On Estimating the Economic Cost of Capital (EC-138), prepared by Jochen K. Schmedtje.

3/ Inflation will also vary the proportion of property to non-property income as well.

to be passed over in favor of others in which an equity interest is possible, even though some of the latter may include projects of less priority. The distortion in the relative attractiveness of the two sectors of the capital market - equity and bond - which is likely to arise in the process of inflation, is also likely to result in a distortion of the pattern of real investment, since one sector of real investment - infrastructure, including public utilities - is customarily bond-financed, while the other sector - manufacturing and housing - is customarily either equity-financed or directly purchased or financed by some mixed form of equity-bond instruments; and whatever is bond-financed is at a disadvantage when inflation prevails.

Even in non-inflationary conditions, conventional customs may cause a diversion of funds from priority public projects. "One of the peculiarities of traditional public finance", writes Mr. Alan Day[1/], "is that governments have commonly accepted rules of conduct which impose restrictions on their freedom of action which no commercial enterprise would regard as appropriate". One of these rules is the: "... traditional limitation on the financial policies of governments which is still accepted almost everywhere - even though it runs counter to every example set by commercial enterprise. This limitation is the convention - which is accepted almost unthinkingly - that the only way in which a self-respecting government should raise money is by issuing fixed interest securities. These securities may sometimes be very long-dated and sometimes very short" but all must "satisfy the fixed interest rule". The results of this limitation, it is argued, are firstly that the government has to stand a higher debt service charge than would otherwise be necessary; secondly that investors' portfolios are unnecessarily restricted; and thirdly, and most relevant to this study, that: "important and socially desirable projects which it is very widely agreed need to be carried out, but which may well be possible only if there is a substantial transfer of resources into the hands of the government, local authorities or other public authorities are not undertaken or are delayed in their implementation".

It is of course impossible to estimate the extent to which inflation or inflationary expectations have distorted the investment pattern in particular countries. Certainly the mere existence of heavy investment in low priority sectors of the economy is no evidence. The pattern of investment in any country is primarily a reflection of the society to be found there: the distribution of income between people and groups and the relative strength of the public and private sectors are probably the two most fundamental considerations. Widespread luxury house building activity (surrounded by slums) essentially reflects the pattern of income distribution and the propensity to consume of the higher income groups: a "distorted" pattern of investment is a function of a "distorted" pattern of income shares, perhaps of limited productive investment opportunities and of the scale of social values adopted by the wealthy group of the society. Similarly, widespread and lavish government buildings (in the face of housing shortage) essentially reflect the existing political power of the government and the specific taste of the past or current holders of this power. Such distortions inevitably

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1/ Alan Day: "A New Stake in the Country"?, Westminster Bank Review, February 1964.

slow down the rate of economic growth, but they are basic to the society itself at a point of time.

At the same time there are pointers in, for instance, Bank reports which indicate that the distorting effect of inflation is not simply a theoretical possibility. For instance the Bank study on "Financial Aspects of Social Security in Latin America"[1] reports that: "A natural reaction of the social security institutions against the risk of inflation has been the great interest shown by them in investing a substantial proportion of their reserves in real estate." Country reports also mention the problem from time to time. The 1963 report on Costa Rica[2], for example, argued that there should be "a larger share of public sector savings used in the financing of high priority public projects rather than in the private sector". This is a reference in particular to the fact that two state agencies (the National Insurance Institute and the Social Security Fund) which "accumulate large savings have authority to invest as they see fit" and have in fact opted to lend "most of their savings to the private sector mainly on mortgages".

4. Capital Flight

One particular aspect of the general problem of the distorting effect of inflation on the utilization of investible funds is that of capital export. In the view of many observers this in fact represents the major effect of inflation on the utilization of domestic funds. Even the most conservative estimates of capital flight[3] conclude that "there is incontrovertible evidence" that the flow from Latin America is "appreciable" and that there are "indirect indications" that it is "large". Furthermore, part of the "vanishing three billion" referred to in the paper presented by Mr. Irving Friedman to the International Economic Association in July 1965 is represented by the reverse capital flows from the developing countries and it would not have to be a large proportion of this total to be significant in absolute terms particularly for the group of countries most affected by the problem.

Political motives are usually considered to be of preponderant importance in inducing the flight of capital. These fall into two general categories. There is, firstly, the reluctance to invest in domestic public bonds, despite the desire to receive future interest payments and repayments of capital in local currency, because of the lack of confidence in the ability and/or willingness of future governments to honor their obligations to bondholders. Secondly, there is the more far-reaching political motive for exporting capital which springs from the fear that a political revolution will take place of a kind which may lead to the expropriation of private capital and to the renunciation of internal public debts.

1/ Economic Staff, "Financial Aspects of Social Security in Latin America" (1962).
2/ Economic Position and Prospects of Costa Rica, dated May 27, 1963.
3/ E.g., Paul Host-Madsen - "How Much Capital Flight from Developing Countries?" (Finance and Development, Vol. II, No. 1, March 1965).

In addition, however, in certain countries fear of the internal and/or external depreciation of a currency and other economic considerations are undoubtedly also important. These might induce a speculative short-run movement of capital in which case it imposes a liquidity problem on the country concerned and in the light of the low level of their exchange reserves is likely, as a result, to undermine their growth rate. Alternatively, it might represent a longer run movement of funds resulting from a more general lack of confidence in a country's currency or in its ability to provide an adequate pattern of security/income/liquidity for the investor. On general grounds it would be surprising if this second factor were not of considerable importance for many developing countries and more especially for the smaller of these countries. For these countries will often offer a very restricted range of financial investment opportunities to the many investors who wish to diversify their portfolios. It is only by exporting some of their capital that they could achieve the range of holdings they desire. This would not matter if foreign investors in seeking a similar spread in their portfolios took up a comparable volume of securities issued by developing countries, particularly the smaller of these, but in fact the need to do so hardly exists and the flow of funds is predominantly a one-way affair. Whatever the motivation - political or economic - this flow of investible funds from the developing to the developed countries is in direct contradiction to the socio-economic priority accorded to investment in the developing countries by the international community and by the national governments which it represents. It is in this sense that the flight capital problem can conceptually be regarded as part of the general problem of the distortion of the investment pattern resulting from the existence of inflation or of inflationary expectations.

III. ALTERNATIVE POLICIES FOR CORRECTING INFLATION-INDUCED DISTORTIONS

It is a matter of quantitative study and judgment country by country to determine the adverse effects of inflation on the components and total savings of a country and on the allocation of these investible funds. If these effects are judged to be significant then the government can utilize either individually or in combination a variety of policy measures to correct them. Of course it could be argued that in these circumstances the government should in fact aim at stabilizing prices for it is this that can be represented as the disease itself rather than merely its outward manifestation. We assume here that this is either impossible or undesirable to achieve without incurring an unduly high cost.1/

The possible corrective measures which a government can take in these circumstances, fall into two broad groups.

Firstly, it can impose exchange controls on the export of capital and domestically can reinforce these exchange controls by controls over the investment portfolios of institutional investors - the banks, insurance companies, social security institutions, etc. Quite apart from any general considerations regarding the form which the economic organization of a country should take and which might inhibit the use of controls, the more pragmatic considerations of administrative feasibility and of cost set limits to their use. Furthermore, in relation to capital flight, controls can do nothing about the repatriation of past capital exports from a country and in fact there is likely to be a direct relationship between the efficiency of the controls and the unwillingness to repatriate capital.

Secondly, a country can use a straightforward increase in interest rates in order to bring about a better allocation of resources domestically and to dissuade people from sending their capital overseas. Whilst it is generally agreed that some increase in interest rates is desirable in very many developing countries, it is doubtful whether even a drastic upward shift in them, even if this were politically and socially possible, would override the economic fears which drive investors overseas and into real estate. To do so they might have such a deflationary effect as to seriously impair growth.

In regard to these two alternatives - controls and rate of interest policy - a recent Fund paper on "Restrictions on Trade and Payments in Latin America" concludes: "It is not possible to resolve the differences about best techniques for capital control in any short discussion. It does seem clear, however, that direct restrictions, that is, restrictive licensing of exchange transactions, will not work in the Latin American environment." The paper subsequently states, "...there is also a case against relying solely on monetary policy. A policy of monetary restraint pushed to the point where it is effective in curbing capital flight may well have serious effects on the level of economic activity in the economy."

1/ See Chapter I above.

There is a third possibility which conceptually could be regarded as part of the second of the above two categories of policy measures but which is often more convenient to treat as a separate category. This is the device of value-linking of bond issues and/or other savings media. It is this device which is the subject of this paper.

IV. VALUE-LINKING

There is a long and impressive history of support by economists to the idea that monetary obligations over time should be tied to some measure of the real value of the monetary unit.[1] This support stems firstly from considerations of social justice and secondly from the favorable effect that value-linking has on the supply and utilization of domestic investible funds. There is less agreement amongst them when the wider aspects of economic policy are brought into consideration.

1. Considerations of Social Justice

It is widely held that an uncompensated rise in general prices unfairly robs creditors to the advantage of debtors. This is particularly true if the rise in prices were unexpected and therefore could not be taken into consideration in fixing the terms of a loan or if, even if expected, there is no hedge against inflation which is generally available or the government restricts the allowance to be made for rising prices by fixing a maximum nominal interest rate on all or some transactions. Unless this switching of income from creditors to debtors is part of an explicit government policy to redistribute income (e.g. the "euthanasia of the rentier") it is in general to be deplored. In particular an erosion of the savings of the lower and middle income groups results from reducing the real value of social security funds and insurance policies. This in fact will inevitably result from the widespread policy of forcing these institutions to invest in low-income uncompensated government bonds in times of inflation. The justice of "exploiting" the ultimate investors in these captive institutions whilst leaving other investors free to invest overseas, in real estate, etc., is certainly questionable.

2. Effect on Supply and Utilization of Investible Funds

In the most general terms the economic advantages of value-linking are the obverse of the economic disadvantages of inflation or of inflationary expectations. These have been seen to be the adverse effect on some savers of an expectation that prices will rise and the consequent distortion in the use of funds which results from the attempt of savers to insulate themselves from the consequences of such a general price increase. Value-linking explicitly recognizes the existence of these price expectations and in so doing counters the adverse effect on savings decisions and the consequent effect on the pattern of investment. In this regard two distinct aspects of the value linking device must be clarified.

Firstly, value-linking removes the risk or part of the risk which savers must otherwise accept that a fall in the value of a national currency will be reflected in a fall in the real value of savings and the earnings thereon. On the assumption that saving, or that group of savings decisions to which the value-linking is directed, is negatively related to uncertainty regarding the future value of savings, the reduction or abolition of this risk will increase the flow of savings.

1/ See David Finch, "Purchasing Power Guarantees for Deferred Payments", International Monetary Fund Staff Papers, February 1956.

Secondly, however, the introduction of value-linking might result, and be intended to result, in a rise in the rate of return on savings. The government's motivation in this respect might simply be to avoid an increase in the nominal rate of interest on borrowing. Alternatively, it might represent an explicit decision to increase the return selectively for those borrowers holding value-linked financial assets. Whatever the motive the importance of this second factor is that the effect it has on savings and on investment should then be compared with the effect which a straightforward rise in nominal interest rates would have on these magnitudes. That is to say, the level and pattern of savings and investment after the introduction of value-linking should not be compared with the level and pattern at existing nominal rates of interest but with the higher level of rates which could be expected to result in the same total income payment to bondholders. The alternative way of looking at this problem is to take the view that Robson takes[1] that the introduction of value-linking is aimed at or is an occasion for reducing the monetary cost to the government of a given volume of bond issues. The reasoning here is the general one that the more closely the terms of bonds (and other financial assets) are tailored to the requirements of the lender, the lower will be the cost to the borrower. In terms of the inflation problem this reasoning implies that by explicitly providing a guarantee against the depreciation in the monetary values of savings, the government can generate a given volume of borrowed funds at a lower cost to itself than by the use of an unselective rise in interest rates. Thus those who are most pessimistic about future prices will be willing to invest in value-linked bonds at a very low or even negative rate of interest.[2] As more and more linked bonds are issued so they would have to be tailored to the needs of those with less and less pessimistic price expectations until, given the government's own expectations about future prices, it becomes cheaper for the government to issue non-linked bonds. Furthermore the greater degree of market discrimination which the government can exercise (by, for instance, issuing non-transferable bonds) the more it can take advantage of variations in the price expectations of different savers in order to keep the interest cost low - i.e., it can cream off what would otherwise be rent elements in interest payments to savers.

3. The Side-Effects of Value-Linking

Many economists who have argued that value-linking is an effective technical device for increasing the flow of domestically available savings and improving the pattern of utilization of this flow, have nevertheless expressed overwhelming reservations when it comes to recommending its adoption. These reservations stem from the undesirable side-effects which it is considered would stem from its use. There appear to be three of these but the first is of paramount importance.

1/ Peter Robson: "Index-Linked Bonds" (Review of Economic Studies, Vol. XXVIII, No. 75, October 1960).

2/ That such a possibility is not merely a theoretical abstraction is illustrated by the negative rate of interest on certain overseas deposits in Swiss banks.

This first reservation is the belief that the introduction of value-linking has an unfavorable effect on the climate of expectations. This arises, so it is argued, from the fact that by implying a willingness to live with inflationary expectations rather than fighting them head-on, government use of the device merely aggravates the position. Alan Day, for instance, powerfully demolishes the case for sole reliance by the government on fixed-interest borrowing both in times of stable prices and of rising prices yet dismisses the argument for value-linking in one sentence: "..such arrangements (value-linking of bond issues) have been very rare, and understandably have been frowned upon because they imply a deliberate acceptance of inflation by the monetary authorities".1/ Similarly Edwin Nevin, despite his conviction that the public debt in the less developed countries should be tailored to the needs of economic growth, nevertheless rejects value-linking for this purpose for: "above all, it is a clear admission of the expectation of defeat by the one agency in the economy which has both the power and the responsibility for combating inflation".2/

Whilst accepting the possibility that value-linking could in certain circumstances aggravate the climate of inflationary expectations, it is surprising that virtually no mention is made in the literature of the opposite and equally plausible possibility. This is that a government embarking on a stabilization program might wish to reinforce its other financial measures by indicating its willingness to compensate those who in fact respond to its new program by increasing their savings and by making these savings available for priority uses but whose faith is then found to have been misplaced. Does this not reflect strength rather than weakness?

It is apparent that this conflict of possible reactions can only be judged case by case. Certainly any decision by a government to use value-linking should be complemented by other fiscal, monetary, etc. policies which impress upon the public that the decision is part of a disciplined economic policy and not one which can be interpreted as a sign of weakness. At the same time there seems no a priori reason why we should assume that the effect on expectations must necessarily be to worsen them.

Moreover the whole discussion of the effect of value-linking on expectations is in terms of the impact effect of the introduction of a value-linked obligation into a securities market in which no such linking has previously existed. This, however, is too limited a view. It can be argued that once introduced their effect on expectations is neutral; that in setting the terms of subsequent issues of value-linked bonds, the government must

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1/ Op. cit. P.

2/ Edward Nevin: "Public Debt and Economic Development" published by the Economic Research Institute in Dublin, 1962. Both these writers favor the issue of a so-called "national equity" by the government rather than the value-linking of government bonds. This suggestion is examined in an Appendix where it is emphasized that to be effective in achieving its objectives, a national equity must not be an alternative to value-linking but an extension of value-linking. Thus its consideration pre-supposes the acceptance of the arguments for value-linking itself.

accord with market expectations regarding future changes in the general level of prices as expressed in the market prices of existing linked and non-linked bonds. In general a case can be made for the introduction of value-linked bonds into the debt structure of some developing countries before the immediate need arises for them and preferably at a time when there is little or no expectation of future price increases. This would enable people to purchase such bonds at a time when price expectations become more pessimistic without the possibility of aggravating the problem which arises in these circumstances by making a new issue of what would be novel bonds.

The second side-effect which leads to widespread hesitation in recommending value-linking is the fear that its introduction, perhaps on a small scale to begin with, would inevitably spread to all public borrowing and into private loan transactions as well, leading to what has been called "the abdication of the local currency". This fear seems frequently to be based on the assumption that a value-linked bond would carry the same nominal rate of interest as one which is not linked in this way. This is not necessary. In fact for an initial small issue of linked bonds the terms could be such as to be aimed at those investors having the greatest fear of inflation and who would therefore be willing to accept a very low nominal rate of interest (even a negative one) in return for a maintenance of value clause. Any subsequent spread of value-linking would depend on the expectations regarding the extent of future price rises of both borrowers on the one hand and lenders on the other. In the case of an economy possessing a developed capital market borrowers will find, given their own expectations regarding future prices, that their financial needs are most cheaply met by tailoring their bond issues as closely as possible to the requirements of lenders. Whilst such a high degree of sophistication cannot be assumed in the capital markets of the developing countries, nevertheless a crude attempt to meet the requirements of savers can be attempted. However it is possible that governments will have attempted to pursue an artificially low interest rate policy and in these circumstances, of course, the introduction of value-linked bonds the return upon which is to be determined by changes in prices rather than by the government, will make them very attractive to lenders and unless non-linked bonds are made competitive their issue will be impossible. However the introduction of value-linking pre-supposes a recognition of the need for government and other borrowers to accept market expectations of savers as given and thus there seems no reason to assume that linked and non-linked assets would remain uncompetitive.

One final side-effect of value-linking to which attention is drawn is its possible adverse effect upon the level of public savings. The argument is that any measure which makes lending to the government more attractive (and value-linking is one such measure) is dangerous because it reduces the pressure upon the government to be more disciplined in regard to both its expenditure policy and its taxation policy. Thus any gain in terms of increased private savings and a better utilization of private savings which might arise out of the introduction of value-linking would be cancelled in whole or in part by a decline in public savings. To the extent that this possibility is judged to be a real danger, it reemphasizes the need to consider value-linking merely as part of a broader policy package and not as a measure to be judged in isolation.

V. THE FORM OF VALUE-LINKING

The value-linking of bond issues can and has taken a variety of different forms. These differences arise out of variations in the way in which the various elements which enter into a bond contract are combined. The range of possibilities can be classified according to the combination of seven significant elements in the loan contract:

(a) The type of linking employed to guarantee the real value of the bond issue. Five broad possibilities exist in this respect:

i. Linking to the price of the products manufactured by the borrower.
ii. Linking to an index of prices in general.
iii. Linking to an external currency or group of currencies.
iv. Linking to an index of equity share prices.
v. Linking to a non-financial index such as an index of total production, of productivity, etc.

(b) Linking may apply to interest, principal or both.

(c) Linking in respect of interest and/or principal may be 100% or less.

(d) The linkage may be a "one-way" obligation which is only operative in the event of a fall in currency value.

(e) Bonds may be redeemable either at maturity or alternatively at the option of the lender and/or borrower.

(f) Bonds may be marketable or not.

(g) The tax treatment of the gain resulting from the operation of the guarantee may be varied.

1. Type of Linking - The standards of value to which index bonds are linked must, if they are to be successful, satisfy certain conditions. To begin with changes in the standard must be readily apparent to bondholders and reasonably beyond dispute. Furthermore, the changes must be smooth and reflect longer term changes in market conditions rather than short-run changes in these conditions. Individual commodity or other market prices are suitable for the linking of borrowing obligations undertaken by particular enterprises engaged in buying or selling the commodity but not for the government. Thus the linking of railway bonds to basic railway rates in France, of bonds issued by a cement company in Israel to the price of cement in that country, and of bonds of a citrus company to the price of orange groves, appear to have worked satisfactorily. For different reasons all these prices are relatively stable in the short run and they are also easily monitored by the enterprises. Their attraction to bondholders is that whilst they will give some security against inflation they will also in a very general way reflect

the increased potential profitability of the enterprises and enable the bondholders to share in this profitability.

For the government in general, however, (i.e., aside from public enterprises) linking to particular prices is not only largely irrelevant but also raises enforcement difficulties (subsidizing of prices, determining the standard product the price of which is to be monitored, etc.). The general level of prices is obviously more relevant in this case. This raises the fundamental problems of index number construction as well as the bondholders' fear that the index will be "rigged". For this reason it appears more satisfactory to take an index of retail prices or of wholesale prices. In practice, however, the index used has been the cost of living index (e.g., Finland and Israel). This has the disadvantage of covering a limited range of goods and services which are usually those which enter into the consumption pattern of a limited income group and sometimes of those living in a limited geographical area(e.g., the main cities). Being more limited it is not only less likely to reflect more general changes in prices but also more likely to be rigged. In order to stimulate confidence it is possible to set up extra-governmental machinery either for calculating an index of prices or alternatively for arbitrating in the event of a dispute between bondholders and government. In Finland, for instance, the Central Bank acts as the referee in private contracts which have been linked to many different internal indices.1/

Both because of these problems of using price indices for linking purposes and also because of the crucial importance in many cases of the capital flight problem, frequent use has been made of the exchange rate as the basis for linking bond issues. This refers to those bond issues which are subscribed and serviced in local currency but whose repayment and/or interest is determined by changes in the exchange rate. Thus we exclude foreign currency bond issues which represent the equivalent of an external debt operation notwithstanding the fact that their issue was made internally. These latter issues raise problems of external debt servicing capacity which are different in kind from the augmenting of the internal debt.

The most common foreign exchange link is to the dollar but there was, for instance, a bond issue in Finland in 1958 which was linked to the pound sterling. Furthermore, bonds linked to the price of gold come within this category as in the case of the Penay loan in 1952 in France which was linked to the price of a 20 franc gold coin on the free market in Paris.

1/ Another possibility in this respect, though not one that has yet been used, is to use the IMF or the IBRD for this purpose.

Several major and related problems arise with the use of a foreign exchange linkage. Firstly is the difficulty of saying what movements have occurred in the exchange rate over a period of time unless it is specifically stated that it is the registered par value of the currency. For the purpose of dealing with the capital flight problem this de jure value is of significance. It is also significant though to a lesser degree for the maintenance of value of long-term savings on the assumptions that (a) dollar prices (or other relevant external prices) rise less than domestic prices and (b) exchange rates over the long period reflect relative price levels in the two countries. Of course even if these assumptions are realistic the maintenance of the real value of savings will only be 100 per cent if dollar or other external prices remain constant and if the repayment of the bonds comes reasonably soon after a change in the exchange rate and not just before such a change. This last difficulty reflects the basic problem of taking par values, namely the considerable delay in effecting changes in these values. Apart from the inequity arising out of the problem just referred to, is the fact that the impact of discontinuous but large changes in exchange rates is such that governments are liable to delay the decision for an inordinately long period thus making the ultimate change even more drastic.

The situation is more complex when a system of multiple exchange rates exists. The alternatives are either to take the free rate of exchange or alternatively to determine a shadow rate. The latter possibility raises all the problems of index number construction and calculation already touched upon. The former is the most satisfactory solution though it raises obvious problems where the free market is an unofficial market. Furthermore, the free market is likely to be unduly subject to short-term speculative forces. The need in principle, is for something between the rigidity of par values and the sensitivity of the free market but this rarely exists.

Israel has had the most extensive experience with dollar-linked bond issues. However, the social and budgetary impact of the devaluation of the Israeli pound in 1962 convinced the authorities there that the external linkage of internal obligations should be discouraged: The 66% revaluation of dollar-linked monetary obligations which occurred in 1962 when the Israeli pound was devalued by 40%, whilst it would have been acceptable if spread over several preceding years, created widespread friction, unrest and dissatisfaction simply because it was concentrated at one point of time.

France was most experimental in her linking devices during the period up to 1957 when the government used these measures. Mention has already been made of linking to individual commodity prices and to the price of gold. In addition bonds were issued upon which either the interest or the repayments were linked to stock market prices and to an index of industrial production. Both of these can be justified for different reasons. The former gives bonds a link to equity prices which can be expected to reflect both changes in real and money income whilst the latter gives a link to real growth in that sector of the economy in which the productivity of resources is likely to rise most rapidly. Neither, however, seem to focus clearly on the significant elements in the problem of dealing with the barriers to the effective mobilization of private domestic saving for priority sectors of the economy. Their justification would be primarily in terms of the immediate availability and widespread acceptance of the relevant indices among the financial community.

It would seem, therefore, that both general considerations and experience indicate that the value-linking of bonds should be primarily in terms of some index of general prices. Only in special cases would it be desirable to use an index of some other macro-economic aggregate such as industrial production or a linkage to a more limited magnitude such as a particular market price. Linking to the exchange rate, as already emphasized, raises so many problems that it should be used with extreme caution.

2. Range of Linking

Once the principle of linking is accepted for a bond issue there is no reason in logic why its application should be restricted to certain elements in the total pattern of terms pertaining to the bond issue. However, the primary justification for value-linking is that it will in certain circumstances have favorable effects upon economic decision-taking. Thus the particular terms offered became not so much a matter of logic as of tailoring them to meet those problems which are judged at any time to be of crucial or significant importance. To begin with the linking measure can be in respect of both interest and principal and logically should be. However, if it is felt that the major impediment to an adequate flow and allocation of private saving is the fear of a depreciation in the real value of savings rather than an inadequate return on savings (though the two cannot really be treated separately - e.g., an adequate return will dissipate fears of a fall in the real value of the capital sum), then in these circumstances it is adequate to link the principal without the interest being linked. On the other hand if it is the maintenance of the real value of a future income stream which is considered to be important or if this is considered adequate security for savers in the circumstances, then only the interest element need be linked. In both Finland and Israel linking has typically applied to both interest and repayment whereas in France up until 1958 (when linking was made illegal) it has applied either to the interest or repayments on a bond issue but never to both.

Linking has normally meant complete linking of those elements which are guaranteed in this manner. However in Finland whilst both interest and repayments have been covered, the coverage has not been complete. In particular, compensation has normally only been in respect of 50 per cent of the change in the relevant price index. Thus interest and repayments are increased by 1 per cent for every 2 per cent increase in the index. No explicit justification for this limitation appears to be available. The cynical say that it is merely the arithmetic means of those who believe in full linking and those who do not believe in its desirability at all. In addition the terms of value-linking in Finland have often been delimited in two further respects. Firstly only upward movements in the relevant price index are embodied in the linkage and secondly there has frequently been an initial threshold of between 1 and 10 per cent before the linkage comes into effect. In fact given the price movements which have occurred and the terms of the bond issues, these two restrictions have not been operative.

3. Other Terms of Linking

The remaining elements which can enter into value-linked bond contracts (items e, f and g listed at the beginning of the chapter) are not

unique to value-linking. They do, however, have a distinct significance when considered in relation to value-linking. For instance if there is justification for the widespread fear that value-linking once started will dominate the bond market and if this is considered undesirable, then it is possible to confine its use by the issue of non-marketable bonds to certain investors. At the same time it might be necessary to provide liquidity for such bonds by making them redeemable at the option of the lender. If, for example, it was felt that the growth of savings through life insurance could be stimulated by giving policy holders security against a decline in the real value of their savings, then it might be desirable for the government to make available to insurance companies some form of non-transferable linked paper for inclusion in their asset portfolio. A condition for the purchase of such bonds might need to be a willingness on the part of the insurance company to include a linkage clause in its life policies.

VI. VALUE-LINKING IN FINLAND, FRANCE AND ISRAEL

1. Description of the Experience of Three Countries

(a) Finland

The first value-tied loan in Finland was not a capital market transaction. The bonds were given to displaced persons entitled to compensation after the war; the intention was to maintain the real value of the compensation claims during the 10 years over which the payments were to be made. But the bonds could be sold in the market, and were traded at favorable prices. The city of Helsinki issued a loan with an index clause, and when the Government had to resort to borrowing of some size, a pattern had been set. In the years 1953-1957 about 80 per cent of new government issues were index-linked, and about 45 per cent of other new issues.

The National Pension Fund was the first institution to introduce indexation in its lending, and was soon followed by the private insurance companies. Index clauses were applied in insurance contracts and bank deposits, they penetrated most of the capital market and it has been estimated that about 80 per cent of the total credit volume incorporated an index clause by the end of 1958. After the stabilization measures in the late fifties the use of index clauses declined for some time, but they have recently become widespread again.

Complete value-linking has been exceptional in Finland. Most government loans have carried a clause guaranteeing 50 per cent linking and this has been applicable in most of these cases to both principal repayments and to interest. The clause has been restricted to upward movements in the index to which the payments are linked and there has frequently been an initial threshold (from 1 to 10 per cent) before the clause comes into effect. A variety of index links have been used including the cost of living index, the wholesale price index (either for goods in general or for domestic goods) and finally the exchange rate of pound sterling. The following represents a selection of the types of guarantees which are to be found in Finnish linked bond issues.

Government 6.5 per cent bond loan 1954 (March 1st)

Interest: 6.5 per cent

Emission price: 97.5

Maturity: 15 years

Redemption: First 4 years: 6 per cent per annum of par value.

Last 9 years: 7 per cent per annum of par value.

Index clause:

Index used: Cost of living index

Regulated: Interest and repayments

Base index: 104

Clause: Interest and repayments are increased by 1 per cent for each two points increase in the index. This applies only when the index is more than four points above the base index. The index figure to be used is the index for the month two months prior to the date of payment.

Government Bond Loan 1955 with Flexible Interest

Interest: 2 per cent above the interest on 6 months deposits in the two largest commercial banks

Emission price: par

Maturity: 10 years

Repayments: 1/10th annually

Index clause:

Index used: Cost of living index

Regulated: Interest and repayments

Base index: 100 (October 1951)

Clause: Interest and repayments are increased by 1 per cent for each two per cent increase in the index. This applies only when higher than 105.

Loan Issue by an Industrial Mortgage Bank (7.5 per cent, 20 years)

Type of linking: Exchange rate

Regulated: Interest and repayment

Base rate: The selling rate for pound sterling as quoted by the Bank of Finland, December 1, 1958.

Clause: Interest rate and repayments are to be increased by half of the percentage increase in the exchange rate. This applies only when the rate is more than 3 per cent above the basic rate. No reductions are made if the rate falls below the basic rate.

Loan Issue by a Shipping Company

Index used:	Retail prices for domestic goods
Regulated:	Interest and repayments
Base index:	2187 (1935 = 100)
Clause:	Interest and repayments are increased by half of the percentage increase in the index. The last published index figure is to be used.

(b) France

Following a lead set by public and private enterprises after the War, the government introduced index clauses into its borrowing contracts. Table 8 below indicates the use of index regulations in bond issues in the period 1952-57.

Table 8

(billions of old francs)

Issues by:	Index Regulation	Ordinary Bonds	Total
The government	681 1/	319	1,000
Public corporations	255	401	656
Private enterprises	144	139 2/	283
Others	-	40	40
Total	1,080	899 2/	1,979

1/ Excluding 233 billion issued for the conversion of other bonds.
2/ Including 16 in convertible bonds (convertible in stocks under certain conditions)

Source: Statistiques et Etudes Financieres, No. 105, September 1957.

Each index-linked bond issue has contained a guarantee in respect of either the principal or the interest payment but not both and the guarantee has been to the full 100 per cent of the change in whatever index the principal or interest is to be linked. A whole range of indices has been used upon which to base the maintenance of value guarantee. The principals of government bond issues have been linked to the free market price of a certain gold coin (the "napoleon"), to stock prices and to a combination of stock and bond prices whilst interest payments have been linked to the volume index of industrial production.

Public and semi-public corporations issued bonds with a great variety of index linkings. The cost of living index or other general

indicators were not used because the courts on several occasions have declared such contracts illegal. Interest, capital or both have been linked to the level of electricity production in the case of bonds issued by the electricity industry, to the level of productivity in the industry in the case of bonds issued by the coal industry, and to the level of product prices in the case of bonds issued by both the transportation and electricity industries. Other industries have used total value of their sales as the base for such index linking.

Private companies have generally avoided a direct link to their own prices or production, but have offered an additional interest related to distributed profits or other indicators of company earnings, thus giving the bondholders some of the advantages of an equity holder. Nevertheless, there are examples of rather strict regulations in issues by private companies; in one issue both interest and capital are linked to steel prices, cement prices and the wage level. Two complicated formulas determine the payments to be made to the bondholders.

As part of the stabilization program, indexation of new issues was declared illegal in 1958. Whilst this prohibition was on indexation to prices of goods and services having no direct relation with the business of either the borrower or the lender, the Treasury has refused to approve any indexation provisions whatsoever, or even any provisions giving the bondholder an interest in the profits of the issuing enterprise.

The following represents a selection of the types of guarantees which were used in France.

Government 3.5 per cent bond loan 1952

Interest:	3.5 per cent	
Maturity:	60 years	
Redemption:	at par	
Index clause:	Index used:	The price of a 20 franc gold coin on the free market in Paris
	Regulated:	The repayments

Government 5 per cent bond loan, May 1956

Nominal interest:	5 per cent	
Maturity:	15 years	
Redemption:	at 105	
Index clause:	Index used:	Industrial production
	Regulated:	Interest payments

Government 5 per cent bond loan, 1956 (September-October)

Interest:	5 per cent	
Maturity:	15 years	
Redemption:	at par	
Index clause:	Index used:	The average of bond and stock prices the previous year
	Regulated:	The repayments

Government 5 per cent bond loan, 1957

Interest:	5 per cent	
Maturity:	12 years	
Redemption:	at 110	
Index clause:	Index used:	Index of stock-prices the previous year
	Regulated:	The repayments

(c) Israel

In 1951 government bonds denominated in dollars were given as compensation for foreign securities requisitioned by the state. The bonds were favorably quoted in the market, and set a pattern for following issues which were denominated in Israeli Pounds but linked to the U.S. dollar; both repayments and interest payments were to be increased proportionally with an increase in the official price of the dollar. Public corporations and private companies have issued bonds pegged to the price of their product, to the cost of living index, to the dollar or to a combination of these final two indices. Investors have often been given the option to choose between a dollar link or a price link. Some special bonds entitle the holder to the purchase of a flat, land or a citrus orchard at a price fixed in advance. Until recently both interest and principal have been 100 per cent value-linked. Value-linking has spread very widely and it is claimed that the Israeli Pound was practically abandoned as a standard of payments in long-term financial contracts. Close to 90 per cent of the domestic bonds listed on the stock exchange at the end of 1962 had some kind of linkage.

Table 9

Domestic Bonds Listed[1] on the Tel Aviv Stock Exchange

(nominal value, end of 1962)
(Million IL)

	Government	Government Guaranteed	Other	Total
Dollar-linked	185	57	157	399
Index-linked	74	13	56	143
Mixed-linked	13	-	80	93
Linked, total	272	70	293	635
Non-linked	64	-	2	66
Total	336	70	295	701

1/ Short-term loans are not listed.

Source: Bank of Israel Annual Report 1962

The development of bond and stock prices is given below.

(1950 = 100)	1950	1955	1960
Non-linked bonds	100	100	103
Linked bonds	100	266	313
Shares	100	219	402

The devaluation of the Israel pound which occurred in 1962 increased the dollar-linked debt by two-thirds in terms of local currency. It had been anticipated but nevertheless the prices of dollar-linked bonds rose by 55 per cent over the year. The devaluation increased the total debt of house-owners by 17 per cent and measures were introduced to help farmers with dollar-linked debt. It was decided that the dollar-link should not apply for repayments during the first three years, and several conversion schemes were set up. The farmers could choose between a conversion into price-linked debt or into non-linked debt with a 3 per cent higher interest rate; the costs should be covered partly by the government, partly by the devaluation gains of financial institutions.

After the devaluation and stabilization measures in 1962 the government expressed its intention to stop all issues in currency-linked bonds, but to continue the issue of index-linked bonds. The use of indexation subsequently declined and the public developed a preference for non-linked securities which have had a higher interest than linked securities. The maximum legal rate of interest on non-linked "approved" loans was set at

12 per cent in 1963 (it had been 9% previously) and that on linked transactions at 8 per cent thus giving a 1 per cent rise from 3 per cent to 4 per cent in the premium to cover the risk of non-linkage. Whilst new issues of dollar-linked bonds have been forbidden since 1962 transactions continue to occur of course in previous issues and recently their prices have tended to rise again after a period of stability following upon the devaluation.

The following represents a selection of the types of guarantees which have been used in Israel.

Government 6 per cent bond loan 1957 ("Housing Loan")

Interest:	6 per cent	
Maturity:	13 years	
Redemption:	over the last 10 years	
Index clause:	Index used:	Cost of living index
	Regulated:	Interest and repayments
Quotation July 1962:	In per cent of nominal value:	124
	In per cent of par[1/] value:	105.7

1/ The increment due to the index-clause is added to the nominal value, the par value thus includes the accumulated index compensation.

Government 6 per cent bond loan 1960 ("Development Loan")

Interest:	6 per cent	
Maturity:	15 years	
Redemption:	over the last 10 years	
Linking:	Linkage used:	The exchange rate for dollar
	Regulated:	Interest and repayments
Quotation July 1962:	In per cent of nominal value:	144
	In per cent of nominal value at new exchange rate 1/	86.4

1/ The increment due to the exchange-clause is added to the original nominal value; the price has not increased correspondingly and is - in this sense - below par.

2. The Lessons from Finnish and Israeli Experience

It is apparent from the foregoing descriptive account that value-linking has been most extensively developed in Israel and Finland. In order to derive some practical judgments regarding the economic effects which have resulted from this experience a limited on-the-spot investigation of the judgments of the central banks, commercial banks, savings banks, insurance companies, pension funds and finance ministries was undertaken in March 1964. It must be emphasized, however, that the use of the technique in both countries has not been the outcome of any explicit appraisal of its economic desirability. In fact in both countries value-linking was introduced initially as a measure of social/political justice to a small group of ex-propriated asset owners whom the government wished to compensate. From this restricted beginning it has in both cases snow-balled through the economy.

The most striking and surprising fact that emerges from talking to people who are active in the financial and capital markets in both these countries is their widespread acceptance of value-linking as a desirable technique in general once it is expected that a rise in prices in the future is either politically or economically inescapable. The surprise stems from the fact that traditionally opposition to value-linking has come from financial circles rather than from economists.1/ Of course there is universal

1/ David Finch, op. cit. page 2

concern and complaint that governments seem unable or unwilling to control the inflationary process and it is emphasized that value-linking is in no way considered to be an alternative to stable prices but merely as a second-best solution. But there seemed to be virtually no support for the view which is so strongly emphasized in the more abstract discussion of value-linking and to which reference was made previously that the device itself is inflationary because it reinforces peoples' expectations that prices will rise in the future. It was suggested that this might be a possibility when value-linking is initially introduced but that subsequently the interest differential between linked and unlinked obligations comes merely to reflect investors' expectations rather than the other way round. The question the government or other bond-issuing authority apparently has to ask itself is always: given price expectations in the market, what interest differential between linked and non-linked bonds is necessary in order that they should be competitive with each other?

Of more significance in relation to the inflation problem was felt to be the effect of value-linking on savings and investment. Both in Israel and in Finland the insurance companies and the banks are convinced that by being able to guarantee either in whole or, in the case of Finland, in part, the real value of peoples' savings, their business has been increased considerably. The insurance companies in particular are certain that, but for their introduction of value-linked policies based on their portfolios of, in part, value-linked obligations of the government and other public bodies, their life business would have been very small. Without the existence of value-linked obligations only real estate could have provided the basis for such policies because the equity market is too little developed and too risky to provide the asset structure they require. In both countries, furthermore, these savings institutions believe that had they not succeeded in generating these increased savings, that the income would have found its way mainly into the purchase of consumer durables rather than into alternative savings outlets. Opinion differed as to whether a higher interest rate would be just as effective as a value-linking of policies and savings accounts but in Finland, at least, the insurance companies considered that the past history of their currency was such that only a guarantee to provide a given sum in real terms in the future could convince some potential policy-holders of the desirability of long-term saving. For this reason they regretted the Finish practice of limiting the value-linking of bond issues to 50 per cent of the increase in the price level.

Changes in the level of saving, however, result also from changes in public savings as well as of private savings and the relevant judgment to be made here was whether value-linking of government bonds in these countries had reduced fiscal discipline. In Israel nobody was willing to countenance this view either in respect of the central government itself or of the autonomous public agencies. In Finland, however, the point was made in a more general context when the view was expressed in the Central Bank that anything which made government bonds more saleable, including the development of a more active capital market, was a cause of concern because it eased the financial pressure upon the government.

As regards the pattern of savings use, to begin with neither Finland nor Israel has had a capital flight problem. Undoubtedly domestically it has made more funds available to the public sector though there are critics in Israel who argue that the real return on the investible funds would be higher if more were to be left in the private sector to be distributed in part through the 'black' capital market.

In Finland a problem which is being actively discussed is the effect of value-linking on the growth of an equity market and therefore on the supply of funds to private industry. Whilst one group holds that value-linking educates investors away from fixed-interest securities and can be regarded as an intermediate step on the way to completely variable-return securities, another considers that by providing investors with a hedge against inflation, value-linking reduces the flow of funds into equity shares.

As regards techniques of linking, there is universal disapproval in Israel of exchange-rate linkage. (Finland has had virtually no external linkage whatsoever). The 1962 devaluation of the Israel pound had such an impact effect on the society when many of its internal obligations were linked to the dollar, that the government was forced to yield to the demands in particular of houseowners and farmers. Furthermore, although the suggestion was categorically denied by some people, the view persists in some quarters that the actual devaluation was delayed because of the anticipation of this impact effect. That this universal disapproval of dollar-linking seems not to have affected at all the attitude towards value-linking in general is an indication of the extent to which the policy has become acceptable to the financial institutions and its merits recognized by them in a situation in which inflation is expected to persist.

Regarding the actual determination of the internal value-link, the general point was often made that the index of prices must be widely respected if it is to be acceptable and effective. In Finland the Central Bank acts as the referee in private contracts which have been linked to many different internal indices.

It is obviously impossible to isolate the effects of value-linking in the countries which have employed it upon their rate of economic growth. Certainly the growth performance of the three countries whose experience we have examined has been favorable as compared with other countries at a similar level of development, though it is always open to the purist to argue that it might have been more favorable but for value-linking. However, within the countries nobody appears to entertain this view that value-linking has hampered their growth rates - rather the reverse, given the apparent inevitability of inflation.

APPENDIX A

A National Equity

Because, in particular, of the undesirable announcement effect which value-linking is thought to have on the climate of expectations in an economy, the suggestion has been made that governments should issue an obligation which would be called a national equity. This financial instrument is designed to correct the distortions in the economy which result from the fear of future inflation and from the orthodox limitation on government bond issues to fixed interest securities, but at the same time to do so without giving the appearance that the government itself feels that future price increases will occur. These objects would be achieved, it is claimed, by issuing bonds which are linked not to changes in the internal and/or external value of a currency but to changes in the level of its gross national product. Two major variants on the proposal emerge at this point.

Firstly Nevin has argued[1/] that such bonds should be linked to changes in a country's real national product per head. This it is stated will firstly give investors "an asset whose yield can grow pari passu with the national output as a whole" and secondly will represent "an announcement by the authorities of the probability, not of inflation, but of continued economic growth, the psychological effect of this", it is added, "would be of value in promoting that growth itself". Certainly if in certain countries at certain times conditions are judged propitious for such an announcement effect then this proposal is to be commended. However, if inflation or fear of inflation exists then the investor is likely to recognize that any increase in the valuation of his bond resulting from an increase in national productivity will not result, if these fears are realized, in his yield growing "pari passu with the national output". His yield will in fact fall if the rate of inflation is greater than the rate of increase in national productivity. Only by basing the increase in the value of a bond upon both productivity and price changes can the objective desired by Nevin be attained.

This is the merit of the second variant which, as outlined by Alan Day[2/], would link the value of the proposed government bond issue to changes in the level of a country's gross national product in current prices over the life of a bond issue. Certainly there is, from the economic point of view, much to be said in favor of such a linkage. It extends the range of choice of assets available to investors by, in effect, going beyond mere value-linking and giving investors a share in any increase in real production resulting either from increased productivity or from an increase in population. It is, however, somewhat inconsistent on Day's part to present such a proposal and yet to argue as he does against simple value linking. The sole justification for doing so is the supposed undesirability of value-linking itself upon the climate of expectations in a country. If it is considered that the announce-effect of a value-linked bond issue when combined with other fiscal and monetary measures will be considerably more adverse than the announcement effect of a national equity, then the apparent inconsistency in Day's position is easy to understand. Furthermore, in these circumstances it might be necessary to extend the linking of bond issues in the way suggested by Day if the object of the linking is to be achieved.

1/ Edward Nevin: "Public Debt and Economic Development" (Economic Research Institute, Dublin, 1962).

2/ Alan Day: "A New Stake in the Country"? (Westminster Bank Review, Feb. 1964).

However the examination of the Nevin/Day proposal has not been pursued in this report. To begin with to our knowledge no experience with this type of bond exists by which its effectiveness and problems can be judged. Secondly, however, the idea of a national equity can be considered not so much as an alternative to value-linking as an extension to it. Thus if the case for value-linking is accepted in principle, then this acceptance would apply to the extension of the idea as well. Whether a particular bond issue should take the narrower or the extended form would then be decided upon grounds of their anticipated effects on expectations and secondly upon such technical considerations as the statistical, administrative, etc. difficulties involved in applying the linkage.